

The Government of the Republic of the Union of Myanmar

Ministry of Education



Year 2 Semester 2

EDU2209
Curriculum and Pedagogy Studies:
Local Curriculum

Teacher Educator Guide

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.

TABLE OF CONTENTS

PREFACE	i
TABLE OF CONTENTS	iii
HOW TO USE THIS GUIDE	1
Unit 3. Agriculture	35
3.5. Plant Diseases and Methods of Control	37
3.5.1. Causes of plant diseases	37
3.5.2. Methods of disease control	41
Expected student teachers' responses for the review questions in TB	44
3.6. Landscape Gardening for Schools	45
3.6.1. Pruning	45
3.6.2. Adapting plants	48
Expected student teachers' responses for the review questions in TB	52
Unit Summary	53
Key messages	53
Unit reflection	53
Further reading	54
Unit 4. Career Development and Career Skills.....	55
4.1. Employability Skills and Career Development	57
4.1.1. Employability and career skills	57
4.1.2. Career development in Myanmar	62
Expected student teachers' responses for the review questions in TB	70
4.2. Career Development and Counselling	72
4.2.1. Guiding middle school students for the career development and career skills	72
Expected student teachers' responses for the review questions in TB	79
Unit Summary	80
Key messages.....	80
Unit reflection	80
Further reading.....	81
Unit 5. Home Management Skills.....	83
5.1. Meal Planning and Nutrition.....	85
5.1.1. Healthy eating plan with local and traditional foods	85
Expected student teachers' responses for the review questions in TB	92
5.2. Financial Literacy	93
5.2.1. Introduction to financial literacy.....	93

Expected student teachers' responses for the review questions in TB.....	100
5.3. Sustainable Living	101
5.3.1. Recycled products for sustainable living	101
Expected student teachers' responses for the review questions in TB.....	106
Unit Summary	107
Key messages.....	107
Unit reflection	108
Further reading.....	108
Unit 6. Assessment.....	111
6.1. Assessment of Local Curriculum	112
6.1.1. Assessment approaches for Local Curriculum	112
Expected student teachers' responses for the review questions in TB.....	118
Unit Summary	120
Key messages.....	120
Unit reflection	121
Further reading.....	122
Glossary	123
Bibliography	126
Annexes.....	137
Annex 1: Disease Symptoms	137
Annex 2: The Food Groups.....	141

HOW TO USE THIS GUIDE

Who will use this Local Curriculum Teacher Educator Guides?

This Teacher Educator Guide has been designed to help you facilitate student teachers' learning of Year 2 Local Curriculum. It is addressed to you, as the teacher educator, and should be used in tandem with the Student Teacher Textbook as you teach Local Curriculum. This Teacher Educator Guide contains step-by-step instructions to help you guide the student teachers in your class towards achieving the learning outcomes for each unit and lesson in the Student Teacher Textbook.

When and where does Year 2 Local Curriculum take place?

A total of 22 teaching periods (Semester 1: 10 teaching periods; Semester 2: 12 teaching periods) are allotted for Year 2 Local Curriculum 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 Local Curriculum Teacher Educator Guide?

The organisation and content of both Local Curriculum Student Teacher Textbook and Teacher Educator Guide align with Local Curriculum subject syllabus of the four-year Education Degree College programme.

Year 2 Local Curriculum contains the following topics:

- Introduction to Local Curriculum
- Ethnic Language, Culture and Local Economy
- Agriculture
- Career Development and Career Skills
- Home Management Skills
- Assessment

For each lesson, the Teacher Educator Guide includes:



Competencies gained: This list of competencies highlights the teacher competencies from the Teacher Competency Standards Framework (TCSF) that are focused on in that lesson.



Time: This is the total teaching minutes and number of 50-minute class periods allocated for the lesson as per the syllabus.



Learning strategies: This is an overview of all the learning strategies used during the suggested lesson learning activities.



Assessment approaches: This is an overview of all the assessment approaches suggested to be used before, during and after the lesson learning activities.



Preparation needed: This can include: guidance on what you need to know about the topic and references to subject knowledge resources; technology preparation; links to other subjects; room organisation; time management; and reference to expected answers.



Resources needed: This can include: printed media, flipchart paper, coloured paper, marker pens, URLs, video clips, low/no cost resources, and practical equipment.



Learning activities: Each lesson includes a variety of suggested learning activities designed to help student teachers achieve the expected learning outcomes within the allotted time. Each lesson should begin by activating the student teachers' prior knowledge or fostering interest in the subject. Learning activities are varied and in line with competency-based approaches to teaching and learning.



Facilitator's notes: These instruction boxes are included as an occasional 'safety net' at key points during the lesson, reminding you to quickly check that the lesson is flowing in the direction as planned, and to check if there are any points to emphasise to ensure that student teachers are learning effectively before moving forward.



Assessment: This comes at the end of each activity. It is an explanation or recap as to how each activity can be assessed formatively in order to assess success and inform future teaching. Instructions for facilitating various types of assessment are included in the *Toolbox for assessment approaches*.



Possible student teachers' responses: These are responses that you may get from the student teachers from each learning activity's assessment.



Check student teachers' understanding: This is the lesson plenary. At the end of the lesson, revisit the learning outcomes and TCSF competencies, and briefly assess the extent to which they have been achieved. Summarise the competencies and how they were addressed by the lesson content. Explicitly remind student teachers what they have studied and how they did so.



Extended learning activities: Some lessons in this guide include ideas on ways to adapt the learning activities to provide additional stimulus for student teachers to deepen their learning. These extended learning activities emphasise the benefits of flexibility in learning to respond to diverse needs and interests of student teachers. It is not mandatory to complete these learning activities during the class period.



Differentiated learning activities: Some lessons in this guide include ideas on ways to adapt the learning activities by considering different learning needs and interests of student teachers towards attaining the learning outcomes and TCSF competencies. These differentiated learning activities emphasise inclusive and flexible practice in teaching and learning. It is not mandatory to complete these learning activities during class period.

For each sub-unit, the Teacher Educator Guide includes:



Expected student teachers' responses for the review questions in TB: A box at the end of each sub-unit gives you the answers to the review questions in the Student Teacher Textbook. This section exists to support your knowledge as a teacher educator, and enables you to support your student teachers by confirming the answers to the questions in their Student Teacher Textbook. It is NOT part of the lesson.

Each unit of the Teacher Educator Guide ends with a **Unit Summary**, which includes:



Key messages: This is a summary of the unit, including a reminder of the key points that student teachers should take from the unit.



Unit reflection: This section is part of the student teachers' self-study material and is included in the Student Teacher Textbook. It is duplicated here to inform you of its content. Your only task here is to remind the student teachers to read it. It does not form part of any lesson. It provides the student teachers with reflection points or questions relating to the learning in the unit.



Further reading: Suggestions for additional resources are listed according to the relevant unit. You can use these resources to learn more about the topic yourself or encourage student teachers to look these up in the library, on the internet, or in your Education Degree College's e-library.

Please note that the learning activities in the Student Teacher Textbook are designed for individual self-study. At times, these individual learning activities may be incorporated into the learning activities outlined in this guide. You may also wish to assign the learning activities in the Student Teacher Textbook for homework, or encourage student teachers to do them at their own pace.

While this Teacher Educator Guide contains detailed learning activities to help you plan and deliver lessons, the instructions in this guide are only suggestions. The student teachers in your classroom will have different characteristics and learning needs. As their teacher educator, you are encouraged to come up with your own learning activities which suit these needs, interests, and ability levels. You should feel free to change and adapt the lessons as much, or as little, as needed.

What is a competency-based curriculum?

The Student Teacher Textbooks and Teacher Educator Guides for all Education Degree College programmes follow a competency-based approach. This is outlined in the Education Degree College Curriculum Framework for the four-year degree and is based on the Myanmar Teacher Competency Standards Framework (TCSF).

A competency-based approach means that the teacher education curriculum does not just focus on subject content. Rather, it emphasises the development of knowledge, skills, and attitudes and their application in real-life contexts. Competency-based curriculums are learner-centred and adaptive to the evolving needs of learners, teachers, and society.

The following elements are integrated throughout this Teacher Educator Guide, in line with a competency-based approach to teacher education:¹

- **Contextualisation:** The learning content and learning activities are based on the Myanmar context to ensure that student teachers can relate what they learn to daily life.
- **Flipped classroom:** This pedagogical concept and method replaces the standard lecture-in-class format with opportunities for student teachers to review, discuss, and investigate module content with the teacher educators in class. Student teachers are typically expected to read the learning materials before class at their own pace. Classroom time is then used to deepen understanding through discussion with peers and problem-solving activities facilitated by you, the teacher educator.
- **Collaborative learning:** This educational approach involves groups of student teachers working together to solve a problem or complete a task. Learning occurs through active engagement among peers, either face-to-face or online. The main characteristics of collaborative learning are: a common task or activity, small group learning, co-operative behaviour, interdependence, and individual responsibility and accountability (Lejeune, 2009).²
- **Problem-solving:** This involves the act of defining a problem; determining the cause of the problem; identifying, prioritising and selecting alternatives for a solution; and implementing a solution. The learning content and activities included in this Teacher Educator Guide provide opportunities for student teachers to apply their problem-solving skills as appropriate.

¹ Adapted from the Glossary of curriculum terminology (UNESCO-International Bureau of Education, 2013)

² Lejeune's Collaborative Learning for Educational Achievement (1999)

Course rationale and description

This course will prepare student teachers with the competencies required to teach the Local Curriculum subject through modelling the values and attitudes promoted in the basic education curriculum for the types of citizens and society Myanmar envisions to create. It is important for student teachers to comprehend the position of Local Curriculum in the new Basic Education curriculum and in creating inclusive learning environment for all Myanmar children, and how this curriculum is developed by and responds to local needs. Student teachers will acquire knowledge and skills in the range of topics identified for Local Curriculum, such as local ethnic languages, history, traditions and cultures, and local economy and business, particularly agriculture. They will further develop a deep understanding on the ultimate purpose and importance of Local Curriculum, for the relevance of education in Myanmar local contexts and its contribution to students' learning progress and further to the intercultural respect and peacebuilding. With reference to the Education Degree College Curriculum Framework, in Years 1 and 2 student teachers are expected to develop their fundamental knowledge of Local Curriculum and basic pedagogical knowledge and competencies for teaching Local Curriculum. In Years 3 and 4, they will further strengthen deeper understanding of Local Curriculum subject knowledge and gain a more systematic grasp of the effective implementation of Local Curriculum subject curriculum, instruction and assessment.

Basic Education Curriculum objectives

This subject, Local Curriculum, is included in the pre-service Education Degree College (EDC) curriculum to ensure that teachers are prepared to teach the local curriculum as defined for basic education in Myanmar. Middle school teachers will be trained as subject area specialist and learn about academic standard equivalent to middle and high school level in order to ensure a strong subject proficiency foundation for being effective teachers for middle school students (Education Degree College Curriculum Framework, 2018).

The objectives of Basic Education Curriculum are as follows:

- a) Ensure every school-age child learns until the completion of Basic Education;
- b) Generate critical thinking skills in students, progressively throughout their primary education and are hence, equipped with five strengths;

- c) Engage students to become responsible and accountable individuals who abide the laws in compliance with civic, democracy and human rights standards;
- d) Cultivate students with appreciation to open-mindedness, curiosity, innovation and cooperation;
- e) Strengthen 'union spirit' by allowing students to appreciate and preserve the languages, literatures, cultures, arts, traditional customs and historical heritage of all national ethnic groups and hence, evolve as citizens capable to pass on those valuable assets;
- f) Give rise of students who appreciate and conserve natural environment, and involve in the dissemination of knowledge and skills in respect to sustainable development;
- g) Enable the quality environment for education in conformity with international standards, and strengthen the quality of learning and teaching process by integrating technology in line with today's needs;
- h) Promote sound body and sportsmanship through participation in sports and physical education activities, and school health activities;
- i) Develop foundational knowledge for higher education, with inclusive to technical and vocational education; and
- j) Empower to become global citizens who embrace diversity as individual or group, respect and value equality, and are armed with fundamental knowledge of peace to practise in their daily lives.

Learning outcomes for student teachers for Local Curriculum subject:

- To construct a better understanding of the alignment of Local Curriculum 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.
- To apply the competencies gained around Local Curriculum subject in their teaching practice to effectively support their students' learning process to achieve objectives of Local Curriculum subject as stated below.

Teacher competencies in focus for Year 2 Local Curriculum

This section identifies key competencies from the Myanmar Teacher Competency Standards Framework (TCSF) specifically relevant for this subject. These teacher

competencies give an overall compass for what student teachers should know and be able to do when graduating from this course. This overall teacher competencies links to the specific learning outcomes expected by Local Curriculum strands as outlined in the syllabus.

Table A. Teacher competencies in focus: Year 2 Local Curriculum

Competency standard	Minimum requirements	Indicators
A4: Know the curriculum	A4.1 Demonstrate understanding of the structure, content and expected learning outcomes of the basic education curriculum	A4.1.1 Describe key concepts, content, learning objectives and outcomes of the lower secondary curriculum for the subjects and grade level/s taught A4.1.3 Describe the assessment principles underpinning the Lower Secondary curriculum
A5: Know the subject content	A5.1 Demonstrate understanding of the subject matter to teach the assigned subject/s for the specified grade level/s	A5.1.1 Describe key concepts, skills, techniques and applications for the subjects covered in the grade levels taught A5.1.2 Include in lessons accurate and relevant information, examples and exercises to support student learning of core subject content, skills and procedures A5.1.3 Link key concepts, principles and theories to real life applications to build discipline specific foundations and skills for different classes and grade levels taught
	A5.2 Demonstrate understanding of how to vary delivery of subject content to meet students' learning needs and learning context	A5.2.1 Describe ways to contextualise learning activities for the age, language, ability and culture of students to develop understanding of subject related principles, ideas and concepts A5.2.2 Explain how lessons are contextualised to include localised information and examples related to the subject content, concepts and themes
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 B1.2.3 Create opportunities for students to investigate subject-related content and concepts through practical activities
	B1.3. Demonstrate good lesson planning and preparation in line with students' learning ability and experience	B1.3.1 Plan and structure lesson to ensure all the lesson time is used effectively
B2: Assess, monitor, and report on students' learning	B2.1 Demonstrate capacity to monitor and assess student learning	B2.1.3 Use questioning and discussion techniques to check students' understanding provide feedback

Competency standard	Minimum requirements	Indicators
	B2.2 Demonstrate capacity to keep detailed assessment records and use the assessment information to guide student's learning progress	B2.2.1 Record students learning progress accurately and consistently B2.2.3 Communicate students' learning progress and achievement to students, parents and other educators
C1: Service to profession	C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role models	C1.1.1 Comply with professional codes of conduct, rules and regulations in line with the five traditional responsibilities of the Myanmar teacher
	C1.3 Demonstrate understanding of the possible effect of local culture and context on student participation in school	C1.3.1 Show interest in and take time to learn about the students' culture, language and community
	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	C3.2 Demonstrate respect for diversity of students and the belief that all students can learn according to their capacities	C3.2.1 Organise the classroom to encourage all students' participation in the lesson content, activities and interactions with the teacher
	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 opportunity	D2.1.1 Discuss teaching practices with supervisors and colleagues, and willingly seek constructive feedback
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

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

Teaching young adult learners

The student teachers in your classroom are young adult learners. As such, evidence suggests that they will learn best when:

- The course content is related to their prior knowledge and experiences;
- There are opportunities for them to be active in their learning, both in and outside the classroom; and
- They are asked to develop their critical thinking and social skills and to take ownership of their own learning.

The different types of content delivery and learning strategies proposed in this Teacher Educator Guide are based on the following ‘good practice’ principles of teaching adult learners:

- 1. Keep it relevant.** Adults tend to be goal-oriented and practical. They want to understand how what they are learning will be important in their daily lives. This means that it is important to have clearly defined goals and objectives for what student teachers will accomplish in a lesson, and why. Student teachers need to see the relevance of what they are learning for their future jobs as teachers. You can tell them explicitly what they are learning or how individual learning activities will be useful to them as teachers.
- 2. Recognise your student teachers’ backgrounds.** Your student teachers are coming to you with at least 18 years of life experience. The content of your course should reflect the level of education that they have completed and the realities of their daily lives. Adult learners need to be shown respect by valuing the experience and knowledge that they bring to the class. In your lessons, you can look for places where student teachers can draw on their real-life experiences and prior knowledge to help them understand and connect to a topic.
- 3. Encourage exploration.** As adult learners, your student teachers are capable of learning on their own and being self-directed. Activities that require problem-solving and collaboration can help your student teachers to connect deeply and meaningfully with the lesson content. To do this, look for ways to actively involve your student teachers through discussion groups, real-life practice and opportunities to teach others. It may help to think of yourself as a *facilitator* of learning, rather than a teacher. You can encourage the student teachers in your classes to take ownership of their learning by finding out what is interesting to them and encouraging them to pursue these things.

Guidelines for inclusive and equitable classroom practices

Inclusion is the act of ensuring that all persons are free from discrimination of any kind and enjoy equal rights. In terms of inclusion in education, a child should be able to enjoy their right to education, regardless of their gender, language, ethnicity, religion, disability, socioeconomic status and geographic location, as set forth in the

1990 UN Convention on the Rights of the Child. The vision of the Ministry of Education (MoE) is to ensure significant advancement towards adhering to the terms of the UN Convention. Its aim is also the achievement of the Sustainable Development Goal for Education, namely: *SDG Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.*

The achievement of SDG Goal 4 can be realised through the creation of inclusive, learner-friendly environments at all levels of the Education Degree College. While teacher educators can model inclusive and equitable classroom practices to their student teachers, administrators can also contribute by creating mission and/or vision statements and policies that celebrate inclusion, including a policy against discrimination.

As a teacher educator, actively promoting inclusion and gender equality in the classroom is an essential element of your teaching. Facilitating a safe and positive environment and atmosphere where all student teachers feel that their contributions are equally valued, and have equal access to learning, requires you to be mindful of the teaching and learning strategies and resources you use.

It is your responsibility not only to ensure your student teachers have equal access to learning, but also to ensure that they understand and value the importance of inclusion and gender equality and take that knowledge with them into their own teaching practice. The skills, knowledge, values and attitudes developed in the classroom with regards to creating inclusive, learner-friendly environments, either implicitly or explicitly, can have a long-lasting impact on the future behaviour of your student teachers.

General strategies to facilitate an inclusive classroom

Teachers, as facilitators, are responsible for creating high quality, inclusive learning environments where all students are supported to experience success in their learning.

- Think about each student teacher and consider the barriers they may experience because of their gender, disability, religion, ethnicity, language, geographical context, and socio-economic situation.
- Be aware of your own biases and reflect on your actions and teaching strategies.
- Ensure that all genders are represented and recognised, be aware not to reinforce gender stereotypes.

- Be sensitive to the marginalisation of different ethnic or religious groups experienced or continue to experience.
- Be aware that student teachers from ethno-linguistic groups who may not be as confident in using the language of instruction in the school. Use terms that all students would be familiar with and check for understanding throughout the lesson. If needed, provide translations of key documents and materials for all student teachers.
- Recognise and acknowledge different religious practices and try to represent all in the class and not have a bias towards the most predominant culture or religion in the population.
- Ensure that activities and examples are accessible to student teachers from all socio-economic groups and can all participate. Use local examples relevant to the locality and materials that are easy to acquire, low-cost and are readily available.
- Provide accommodations and adapt lessons for student teachers with disabilities.
- Make sure you present the key learning points of the lesson through visual, auditory and if possible tactile cues – respond to different learning styles.
- Be flexible and offer a variety of activities for different student teachers to explore the same learning competencies and learning outcomes.
- Have high expectations of all student teachers and focus on helping each of them achieve the learning outcomes.

Ensure gender inclusivity in the classroom

Gender stereotypes are often inadvertently reinforced in the classroom through the use of language, pedagogical approaches and resources that support the preconceived culturally expected norms, roles, and responsibilities of women and men. By promoting a gender-inclusive environment in the classroom, you can support both male and female student teachers in building a healthy understanding of gender equality and further mainstreaming of this gender-sensitive and inclusive practice into basic education classrooms.

- Ensure that there is equal representation of male and female voices, names, quotes and examples.
- Ensure that illustration examples do not reinforce any existing stereotypes.
- Use equitable and gender-inclusive language and ensure that your student teachers do likewise.

- Help and encourage your students to be gender aware, highlight any perceived gender-biased attitudes and encourage your student teachers to reflect on their own actions.
- Ensure that you interact equally with male and female student teachers, addressing and engaging them both to the same degree in your teaching, across different subjects. For example, when asking questions, asking for volunteers, selecting activity leaders, giving complements, giving eye contacts, or even remembering the names of student teachers.
- Arrange the classroom setting in a gender-sensitive and equal manner, in terms of classroom decorations, seating arrangement, and group formation/division.

Specific guidelines to adapt a lesson according to the different needs of your student teachers

Types of situations	Guidelines
Student teachers not interested in lesson topic	Make relevant connections between topic and their lives
	Show them practical applications of topic
	Use examples related to their interests
	Include games and activities which require the student teachers to collaborate together on the lesson content
Unmotivated student teachers to engage in activities	Provide choices within the classroom
	Increase opportunities for peer-based learning
	Ensure learning tasks are at an appropriate level of difficulty
Student teachers reluctant to participate in class	Provide options for participation
	Be flexible in expectations for participation among peer partners/ small groups
	Encourage and support the participation of quieter student teachers
Student teachers who may finish their work more quickly	Develop and prepare extension activities
Student teachers who may take longer time to complete the tasks	Allow more time to complete work if they need it
Student teachers who respond better to visual input (including learners with hearing impairments)	Use objects/pictures, colour-coded information for visual organisation
Student teachers who respond better to auditory input (including learners with visual impairments)	Use lecture or discussion-based learning, peer-based activities, audiobooks, text-to-speech software
Student teachers with learning or attention challenges	Use small chunk of information, frequent repetitions, multiple examples, concrete learning experiences, actual demonstration, hands-on learning
Student teachers who learn better kinaesthetically	Use hands-on learning, touching objects, tactile graphics, frequent movement, project-based learning

Types of situations	Guidelines
Culturally diverse student teachers	Use culturally-relevant materials and instructional methods
Student teachers with disabilities	Group them with student teachers who can offer support and assistance, not with those who are facing difficulties
Student teachers with hearing impairments	Ask them to sit near the whiteboard/chalkboard
	Make sure that they can see your lips to be engaged through lip-reading
	Provide written representations of what is being communicated
Student teachers with visual impairments	Ask them to sit near the whiteboard/chalkboard
	Use large-print materials with the contrast enhanced
	Provide instructions verbally as well as visually
	Provide a variety of engaging activities engaging other senses
Student teachers who prefer expressing themselves through printed words (including students with speech difficulty)	Use journaling, fill in the blank activities, essays, stories or poems
Student teachers who are verbally expressive (including students having writing difficulties)	Include discussions in class or “reporting back” to questions
Students teachers who communicate best with drawings, diagrams (including students with speech or writing challenges)	Use visuals, poster making or other artistic formats
Student teachers who express themselves better through demonstration and movement	Use drama/skit, body movements, building models
Student teachers who need time to think before responding (including second-language learners)	Provide time for them to construct responses before sharing with you or their classmates
Student teachers who have limited mobility	If movement is required, adjust the lesson to include variations that allows the student teachers to demonstrate knowledge by using other parts of their body or wheelchair movement.
	Have them demonstrate the competency using a written or oral description
Student teachers with complex physical disabilities	Use of scribe to support writing
Student teachers with learning/organisational challenges	Encourage peer support
	Use sentence-starters in writing, word banks, pictures, to-do-lists, task checklists

Inclusive, quality assessment to enhance learning

Traditional assessment strategies create barriers for many students. Inclusive assessment allows student teachers to maximise access to learning opportunities, but also considers their individual differences and contributes to improving the quality of education.

- Use formative assessments frequently. Use the data that you get from formative assessments to influence instructional decisions.

- Design and adapt tests so that they are accessible to all student teachers.
- Ensure that all instructions are clear and easy to understand, questions are at the reading level of all students, and diagrams are clear and easy to read.
- Allow student teachers with disabilities to be supported by providing assistance in writing down their answers or understanding the questions as needed (this can be a student teacher from another year group or class or a designated teaching assistant)
- Use assessment rubrics with benchmarks towards the learning goal, using a rating scale such as ‘not yet evident’, ‘beginning’, ‘developing’ and ‘independent’. The benchmarks can be adjusted depending on the lesson or individual learning goals. Other alternatives include checklists, personal feedback, student self-assessment, portfolio with selecting highlights and areas for improvement.
- Ensure that there is more than one way for you to check understanding in a lesson. Provide several options for student teachers to express learning through a variety of assessment tasks.

Accommodations for student teachers who may experience barriers in participating in assessment tasks

Type of accommodations	Ideas
Accommodations in presentation	Provide oral reading of the assessment (either by recorded voice or adult reader)
	Use large print for the assessments
	Provide audio amplification to aid in listening (hearing aids of speakers)
	Use computerised screen readers of text
Accommodations in response	Use a computer or a scribe to help with answering of questions
	Circle answers directly in the text booklet rather than a separate book
	Use organisational devices (calculators, organisers, spell checkers, dictionaries)
Accommodations in setting	Administrate the test in a separate place to minimise distraction
	Test in a small group
	Adjust lighting in a room (more or less light for students who need it)
	Provide noise buffers (headphones, ear plugs, earphones)
Accommodations in timing	Extend time to complete a test
	Allow multiple or frequent breaks
	Change the order of a test (e.g., provide easier subjects first to decrease anxiety)
	Test over multiple days rather than one day

Enhance inclusive teaching through reflective practice

You should constantly reflect on your teaching practice to ensure that you are providing quality education that is accessible and engaging for all of your student teachers, regardless of their background. After every lesson, think about these questions for your reflection:

1. Teaching is planned with all student teachers in mind.

- Do lesson activities take account of student teachers' interests and experiences?
- Are varied teaching strategies and methods used?
- Do the student teachers understand the purposes of lesson activities?
- Does the lesson plan support the achievement of intended learning outcomes?
- What works well and what does not work well for whom? Is there a better way to teach the subject?
- Have I anticipated different learning styles, preferences, abilities, and needs of student teachers and designed activities to cater to their needs?
- How have I considered student teachers' understanding and prior knowledge? How have I adapted my lesson to scaffold understanding and address a range of needs?

2. Lessons encourage the participation of all student teachers.

- Are all student teachers, regardless of gender, addressed by their name equally?
- Are there locally, culturally, and personally relevant materials that engage the interest of the student teachers?
- Do student teachers feel they are able to speak during lessons?

3. Student teachers are actively involved in their own learning.

- Are student teachers encouraged to take responsibility for their own learning?
- Does the classroom environment encourage independent learning?
- Have I designed the lesson to allow student teachers an element of choice in how they learn?

4. Student teachers are encouraged to support one another's learning.

- Do seating arrangements encourage student teachers to interact?
- Are student teachers sometimes expected to work in pairs or groups?
- Do student teachers help one another to achieve the goals of lessons?

5. Support is provided when student teachers experience difficulties.

- Am I watching out for student teachers experiencing difficulties?
- Do students feel able to ask for help?

6. Positive learning behaviour is based on mutual respect.

- Are there established rules for taking turns to speak and listen?
- Do student teachers feel that their voice is being equally heard?
- Are bullying, gender stereotyping and discriminatory biases discouraged?

7. Student teachers feel that they have somebody to speak to when they are worried or upset.

- Are the concerns of all student teachers listened to, regardless of background?
- Do I make myself available for student teachers to talk with me privately?
- Have I created an encouraging and positive learning environment?

8. Assessment contributes to the achievement of all student teachers.

- Have I used assessment to encourage learning?
- Are the assessment techniques inclusive and accessible for all student teachers?
- Are all student teachers actually learning what they are supposed to?
- Are student teachers given constructive feedback on their work?
- Have I supported student teachers for tests or examinations according to their individual needs?
- Do I ensure that diversity is respected, even within one united formal assessment system?

Toolbox for teaching and learning strategies

This Teacher Educator Guide includes suggested learning activities for each lesson in the Student Teacher Textbook. These learning activities are intended to help support you as you plan your lessons but they do not dictate what you must do to help student teachers develop the desired knowledge, skills and attitudes for each lesson. On the contrary, you are encouraged to come up with the lesson activities that will best help the student teachers in your classroom to learn, given their unique backgrounds and needs.

Many of the learning activities listed below are used in this Teacher Educator Guide. You can also use this list to help you plan, or further adapt, your lessons. This is not an exhaustive list of teaching and learning strategies. You may wish to brainstorm additional teaching strategies by visiting <http://www.theteachertoolkit.com/index.php/tool/all-tools> or other similar websites.

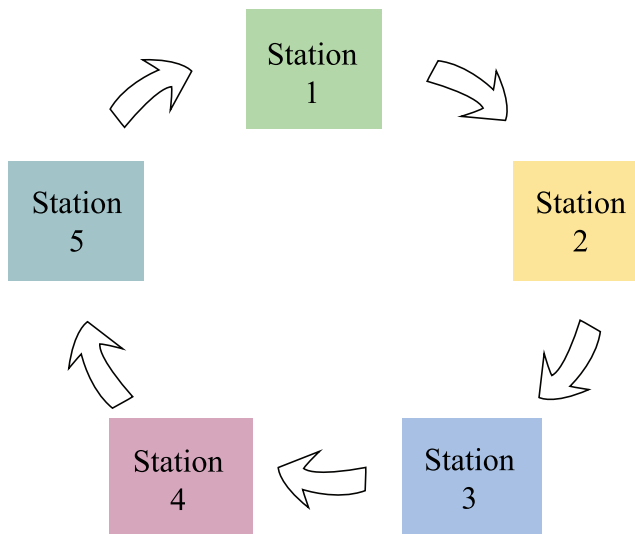
Assignments: The assignments that you give to student teachers might include formal written essays, portfolios and reflection journals. They also might be smaller, developmental tasks – for example, a short homework assignment answering questions about a reading. Assignments can help student teachers to review previously taught materials. They can also help student teachers prepare for future learning – for example, you might assign student teachers to read the Student Teacher Textbook content in advance of the next lesson.

Case studies: Working through case studies can help student teachers to develop their problem-solving and critical thinking skills as they must apply what they are learning to a scenario or story (the ‘case’). To complete a case study, student teachers first read the scenario and then discuss and answer one or more open-ended questions about the scenario. Case studies often require student teachers to propose solutions to the problem presented in the scenario.

Directed activities: These are activities set by you, as the teacher educator, but carried out by the student teacher independently. For example, a directed activity might be for a student teacher to interview a basic education teacher during their Practicum school placement, or to independently research a specific teaching method. Directed activities are typically followed up in tutorials, seminars or workshops which provide an opportunity for student teachers to share about what they have learnt and to learn from their peers.

Gallery walk: In a gallery walk, student teachers work in groups to answer questions or complete a task on poster paper at various stations. They then rotate stations and add comments, questions, or further content to the poster at that station.

You can also use a version of the gallery walk to display student teachers' work. In this type of gallery walk, posters created during individual or group work are displayed around the room. Student teachers then circulate at their own pace to either simply view the posters, or to add their questions or comments to the poster.

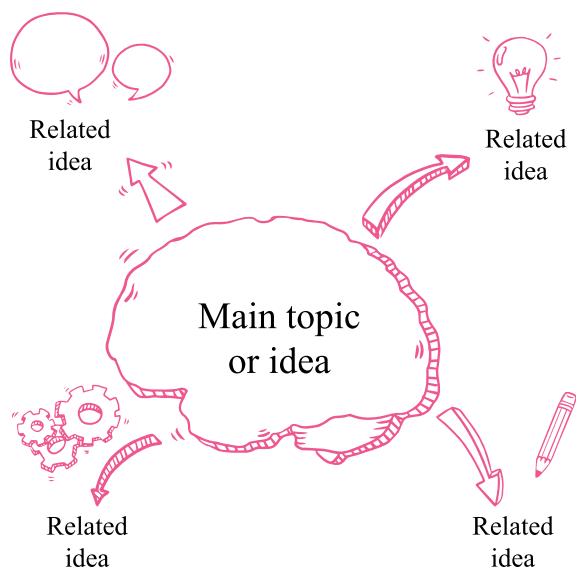


Graphic organisers: Graphic organisers are a simple and effective tool to help student teachers brainstorm and organise their thoughts and ideas in a way that makes it easier for them to understand. Graphic organisers can be used in any lesson for brainstorming, planning, problem-solving or decision-making.

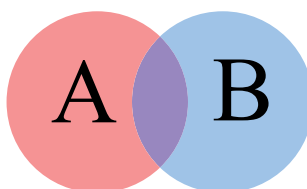
Some of the most popular graphic organisers that you will see in your Teacher Educator Guides include:

- **Concept map (also called a mind map):** Concept maps, or mind maps, can be used to visually show the relationships between concepts or ideas. They are useful for brainstorming and also organising information. Concept maps

can be organised in different ways and with different levels of complexity but most start with broad topics first, connected to sub-topics (or more specific concepts) to form a web of connecting ideas. The diagram below shows a very simple concept map.



- **Venn diagram:** Venn diagrams can be used to compare and contrast at least two different things or ideas (A and B). In the Venn diagram below, the overlapped area represents the characteristics belonging to both A and B and the two areas without overlap are for listing the characteristics that belong only to A and those that belong only to B.



- **KWL chart:** KWL charts can help student teachers organise information before, during and after a unit or a lesson. They can be used to engage students in a new topic, activate prior knowledge, share unit objectives and monitor student teachers' learning. KWL charts can be completed as a small group, whole class or by an individual. Before the lesson or unit, student teachers

should fill in the first two columns about what they already know and what they want to know. After the lesson or unit, they can fill in the column about what they have learnt.

K What I <u>K</u> now	W What I <u>W</u> ant to know	L What I <u>L</u> earnt

- **T-chart:** T-charts can help student teachers examine two facets of a topic; for example, the advantages and disadvantages, or facts versus opinions.

Heading 1	Heading 2

Group work: Group work refers to any time you ask student teachers to cooperatively work together in groups on a task (for example, see the Jigsaw activity below). Group work can help motivate student teachers and encourage active learning. It requires student teachers to practise key critical thinking, communication and decision-making skills. Student teachers can work in groups to answer questions, create a presentation, write a lesson plan, analyse a case study, conduct a role-play and many more learning activities. You may wish to assign roles to group members – for example, recorder, presenter and team leader – to make sure that everyone is involved in the task.

Jigsaw: In a jigsaw activity, small groups of student teachers become experts on one component of a topic and then ‘teach’ that component to their peers. This gives student teachers the opportunity to work with others and to see different points of view. The jigsaw technique is especially effective because each student teacher is responsible for another’s learning, and student teachers come to realise that each group member has something important to contribute to the group. In a jigsaw, student teachers must practise using many important skills, including communication, problem-solving and critical thinking.

Lecture: Lectures are largely one-way communication between you, as a teacher educator, and a group of student teachers. They can be useful for delivering straightforward new content. Even when giving a lecture, you can involve student teachers more actively by pausing to ask and respond to questions, or by asking a student teacher to reflect or comment on the topic.

Micro-teaching: During a micro-teaching experience, a student teacher, or a small group of student teachers, teaches their peers all or part of a lesson. They then receive feedback on the mini-lesson and reflect on the experience in order to develop practical skills and apply their learning. Micro-teaching is an important opportunity to prepare for the Practicum Lesson Study and school placements. It can also provide a chance to focus on specific core teacher practices; for example, asking open-ended questions or giving students positive feedback.

Modelling: Modelling is an instructional strategy in which the teacher demonstrates a new concept or approach, and students learn by observing. As a teacher educator, you may choose to demonstrate a learning activity or teaching strategy, rather than simply telling the student teachers about it – this is modelling.

Modelling may also be followed by a discussion about how you presented the activity or strategy and what impact that had on the student teachers as learners. This can highlight the role of modelling in teaching and encourage student teachers to reflect on how they might use modelling in their own teaching in the future.

Observation: Student teachers can observe a peer or expert teacher teaching, then participate in structured, reflective discussion to make sense of what was observed. You may also observe a student teacher teaching all or part of a lesson and then follow this with a discussion to explore and develop the student teachers’ thinking

and practice. This strategy is an excellent opportunity to make links between theory and practice, and to support student teachers in making accurate assessments of their progress.

Practicals: Practical activities can include demonstrations by you as teacher educator (for example, showing how to conduct a science experiment) and those led by, or involving, student teachers (for example, having student teachers complete a mathematical investigation and associated worksheet). This strategy can help student teachers to understand how different activities can help students learn. Practical activities can also encourage student teachers to connect theory to their developing practice as teachers.

QR Codes: QR codes are a mobile friendly way to enter web addresses or check out links of specific information. Instead of clicking on links, a collection of small black squares, known as a QR code, is scanned.



First, student teachers will need to use their smartphone to download a QR code scanner or reader from the iOS Apple Store or Google Play, using mobile data or available internet connection. After downloading the scanner, connected students can hold up their phone, point their camera, scan the code and be directed to a given location. Teachers should be encouraged to use these codes in their own classrooms and know how to generate them easily and quickly.

These QR codes can be a great tool used for the flipped classroom approach, allowing student teachers to easily access links, websites, and download worksheets. You can also use them in warm up activities, assessments, surveys and other learning activities to include VLE in the classroom.

Please note that you and your student teachers will need mobile data or internet connection for the scanner to work.

Reading groups: A reading group is a small group session focused on the analysis and interpretation of a text, most commonly an academic paper. The paper is usually issued in advance and student teachers are expected to be familiar with its contents

before attending the reading group. One student teacher may be asked to present the paper to the group, followed by a discussion to which all student teachers contribute. This strategy helps to familiarise students with academic writing as well as with the ideas within papers. Discussions may focus on the content, presentation or the methodology of the papers presented.

Role-playing: Role-play is a technique that allows student teachers to explore realistic situations as they interact with people and scenarios in a simulated way to try different strategies. This can allow student teachers to work through common challenges, or specific aspects of teaching, in a safe and supportive environment.

Self-study: In a self-study, student teachers must take responsibility for their own learning, with you as a guide. This strategy can supplement face-to-face and Education Degree College-based learning and is important to help frame, supplement, and consolidate new learning. Self-study can take a number of forms, such as reading around topic areas and action planning. Self-study includes time to think about specific areas of education.

Seminars: Seminars are small group sessions where questions can be explored, and views can be debated and analysed. Students usually complete preparatory work or reading before the seminar. While you would lead the seminar as a teacher educator, all student teachers are expected to contribute to discussions. Seminars can be good for developing student teachers' deeper thinking about content with which they are already familiar.

Think-pair-share: Think-pair-share is a simple and collaborative strategy where learners work together to solve a problem or answer a question. To use think-pair-share in your class, you can follow these three steps:

1. **Think:** Begin by asking a specific question about the text. Ask student teachers to 'think' about what they know or have learnt about the topic.
2. **Pair:** Each student teacher should pair up with a classmate, or with a small group.
3. **Share:** With their partner or small group, student teachers should share and discuss their thinking about the question. You can then expand this time of sharing into a whole class discussion about the topic.

Tutorials: Tutorials are one-on-one or small group sessions between you and a student teacher. Tutorials allow for personalised, detailed discussion and exploration of ideas. They may have a pastoral or academic focus and may be used to support student teachers who are struggling with specific academic content, or who have missed out on an in-class learning experience.

Virtual Learning Environment (VLE): This widely-used tool is a teaching strategy to supplement and support learning and self-study. In VLE, activities, study skills and website links are shared with student teachers, and different tools are used to explore understanding, such as wikis, forums and blogs. An e-library is available for student teachers to access teaching and learning resources.

Workshops: Workshops are group sessions in which student teachers engage with new content and skills in order to develop their understanding and practice. This strategy often incorporates a great deal of collaboration and discussion as well as more lecture ‘teaching’ by you, as teacher educator. Workshops allow for detailed discussions about a topic and for student teachers to practise applying what they are learning.

Toolbox for assessment approaches

There are many different ways you can monitor student teachers’ learning before, during, and after a lesson. This Teacher Educator Guide includes many of these assessment approaches. Remember that providing feedback, either written or verbally, is an important part of formative assessment. Your feedback is what will help student teachers to learn and improve on future tasks. You can think of formative assessment as a chance for student teachers to practise before the summative assessment, where they will be asked to show what they have learnt through a larger test, exam or project.

Some of the most popular assessment methods you will see in this Teacher Educator Guide include:

Demonstration: In a demonstration, you may ask a student teacher to show you – or demonstrate – a skill that they have been learning. For example, you may ask a student teacher to demonstrate a dance technique, a step in a science experiment, or a movement in physical education. By observing the demonstration, you can monitor student teacher progress and provide suggestions for improvement. As with all

formative assessment approaches, the feedback you provide on the student teacher's demonstration is what will help him or her to improve.

Homework assignments: Checking student teachers' homework assignments, which may include tasks such as reading and answering questions or looking up additional information, is a good way to monitor if they are on the right track. Depending on the homework assignment, you may wish to discuss answers as a class, check for completion, or collect and provide written feedback.

Journal log/reflection papers: These are a detailed log of student teachers' thoughts and feelings about their professional development and growth. The journal log and reflection papers are intended to help student teachers think deeply about their own learning by reflecting on their progress towards becoming a teacher. The process of consciously reflecting on their learning will help student teachers make connections between the content they learnt in a subject and other subjects, solve problems that come up, and learn from their experiences. Teacher educators may provide advice to student teachers on the areas to focus on when preparing the journal logs and reflection papers.

Observation: Informal observation – by circulating the room, listening to groups discuss, and making eye contact – is a good way to get a general sense of whether student teachers understand the material. More formal observation would involve using a checklist or criteria that you are looking for in a student teacher's answers or presentation. You can then provide feedback on the basis of what you have observed.

Peer-assessment: If you ask student teachers to evaluate or judge, the work of their peers, this is called peer-assessment. You will need to have the appropriate peer-assessment tools – either a rubric or a checklist – so that student teachers can provide feedback to their classmates based on established criteria. When student teachers observe each other during micro-teaching and complete an observation sheet, this is a form of peer-assessment.

Presentation: A presentation may be similar to a demonstration but often involves more preparation on the part of the student teachers. Asking groups or individuals to present their work – perhaps at the end of the lesson – is an excellent opportunity to check for understanding, correct any misconceptions and provide feedback.

Projects: Projects are completed by each student teacher, either individually or collaboratively in a group. This is to demonstrate their understanding in the subject content knowledge and their competencies gained through designing, planning and developing projects. Student teachers work on a project over a certain period of time to investigate a topic or a real-life issue. Teacher educators are requested to provide instructions on completing the projects, including the rubrics of the assessment.

Question and answer: Asking student teachers both closed-ended and open-ended questions is a good way to monitor whether student teachers understand the material. During question and answer sessions, be sure to call on a variety of student teachers for their responses. While you may want to use some closed-ended questions (with one correct answer) to check understanding, you will be able to foster better and deeper discussions through open-ended questions, which have more than one right answer and generally require more thinking on the part of the student teachers.

Quiz: You may wish to use a short quiz to test the knowledge of your student teachers. Quizzes can be graded in class as a whole class activity, or you may wish to collect and check the quizzes outside of class. Quizzes can also be seen as a way to ‘practise’ for a summative test or exam.

Self-assessment: In a self-assessment, student teachers evaluate their own strengths and weaknesses. This process can help them to understand their own gaps in skills or knowledge and to create a plan to address these gaps. Self-assessments are good ways to encourage student teachers take ownership of their own learning and development. As in peer-assessment, student teachers will need some coaching to understand the assessment criteria and how to apply them to their own work or skill sets.

Written examinations: Written examinations are conducted usually at the end of each semester to test the basic subject content specific knowledge and reflection of related pedagogy discussed during the course.

General tips for facilitating a lesson

Some of the teaching and learning strategies suggested here and throughout this Teacher Educator Guide may be new to you. If so, it is recommended that you spend

some time carefully planning out how you will use them in your lessons so that student teachers can achieve the desired learning outcomes.

The following are some additional general tips that you can implement to help your student teachers learn.

Before teaching a class, you may wish to do the following:

- Choose a small amount of content to deliver. Keep in mind that in a given 50-minute class period, you generally do not want more than one-third of the class period should be focused on content delivery. This will enable there to be enough time for student teachers to practise their skills and deepen their understanding of the topic.
- Note down the key points you think are most important for your student teachers to learn from the lesson content. You can refer to these as you deliver the content to the class to make sure you discuss these key points.
- Make sure you are clear on how you will carry out the content delivery and the learning activities. Refer to the suggestions in this guide and discuss with other teacher educators, if needed. Always feel free to change the suggested steps so that the lesson activities work well for your specific classroom situation.
- For each learning activity, prepare clear written instructions for your student teachers describing, step-by-step, how to do the activity. The instructions could be displayed on a presentation slide, printed on a handout or written on the board. Make sure the instructions are large enough to be read by all student teachers.
- You may want to practise explaining the instructions verbally, going slowly and step-by-step. This will help you be ready to explain the instructions to your student teachers before the activity, so they will understand what to do. You can practise the explanation with a friend or colleague ahead of time and then ask them what needs to be explained more clearly.
- If time allows, prepare to model of what student teachers are expected to do during the activity. This might involve one or two teacher educators doing a short role-play, pretending they are the student teachers doing the activity. This will enable student teachers to *see* exactly what they should be doing.
- If student teachers are expected to produce something at the end of an activity, you may wish to prepare an example, or ‘end product,’ to show student teachers what they should be aiming to create during the activity.

During class, just before the content delivery or any learning activity, if applicable, it may be helpful to:

- Distribute any materials or learning supplies that student teachers will need to carry out tasks you will ask them to do. Make good use of the e-library to request student teachers to access necessary teaching and learning materials online as appropriate.
- Provide clear verbal and written instructions to student teachers about any task you would like them to do as you deliver the content.
- Model what the student teachers should do using a short role-play.
- Show the example end product to student teachers that you prepared before class.
- Ask one or more student teachers to repeat back to the class how to do the activity, using their own words, to make sure they understand the instructions.
- Tell student teachers how long they have to complete the activity.

Throughout the class, it may be helpful to:

- Look for any signs that suggest whether the student teachers understand the content you are delivering or the task they are working on. If you suspect certain points may be difficult for student teachers to understand, consider explaining the information in a different way or breaking down the information into smaller, more manageable pieces.
- Walk around to all parts of the classroom to:
 - Ensure all student teachers are on task;
 - Answer questions student teachers have;
 - Ensure student teachers have all the materials needed to do the activity; and
 - Assess student teachers' understanding by observing whether they are carrying out the activity as instructed.
- Encourage student teachers to ask questions.
- If you detect a misunderstanding, either talk directly to the student teacher to clarify, or if the whole class may benefit from the clarification, call the attention of all student teachers and explain to everyone.
- Check for **Facilitator's notes** instruction boxes for points to emphasise and to ensure that student teachers are learning effectively before moving forward.

At the end of class, it may be helpful to:

- Consider following the suggested ways to “Check student teachers’ understanding” at the end of each lesson. This is an opportunity to summarise the lesson and to briefly assess the student teachers’ achievement of the learning outcomes and understanding of how the lesson addressed the Teacher Competency Standards Framework (TCSF).
- Assess student teachers’ understanding by asking them to share a point from the content you delivered that they thought was particularly interesting, or that surprised them.
- Encourage student teachers to ask questions and provide comments on what you have just taught them.
- Ask one or two student teachers to share what they produced during the activity. If the activity was not designed to produce an end product, ask one or two student teachers to describe what they learnt from the activity.
- After student teachers share their work or their thoughts, choose one or two aspects of what they shared to emphasise to the class. The point you choose to emphasise should be key points that you would like all student teachers to learn and remember from the activity.

As a teacher educator, you have an important role to play in creating a classroom where all student teachers feel free to ask questions, share their reflections, and practise teaching in a safe supportive environment. It is your feedback and support that will help them grow into teachers who can foster the holistic development and learning of Myanmar’s children and youth.

Table B. Year 2, Semester 2, Local Curriculum content map

Units	Sub-units	Lessons	Learning Outcomes	TCSF		Periods
				Minimum Requirements	Indicators	
3. Agriculture	3.5. Plant Diseases and Methods of Control	3.5.1. Causes of plant diseases	<ul style="list-style-type: none"> Recognise causes of plant diseases and common symptoms evidenced in certain plants 	A5.1 B1.2 C1.4	A5.1.1 A5.1.2 A5.1.3 B1.2.3 C1.4.1	1
		3.5.2. Methods of disease control	<ul style="list-style-type: none"> Describe how to prevent and control plant diseases 	A5.1 B1.2 C1.4	A5.1.1 B1.2.3 C1.4.1	1
	3.6. Landscape Gardening for Schools	3.6.1. Pruning	<ul style="list-style-type: none"> Discuss methods of pruning for landscape gardening 	A5.1 B1.2 B2.1	A5.1.1 B1.2.1 B1.3.1 B2.1.3	1
		3.6.2. Adapting plants	<ul style="list-style-type: none"> Explain methods of shaping and adapting plants in specific forms during landscape gardening 	B2.2 D2.1 D3.1	B2.2.1 B2.2.3 D2.1.1 D3.1.1	1
4. Career Development and Career Skills	4.1. Employability Skills and Career Development	4.1.1. Employability and career skills	<ul style="list-style-type: none"> Explore and identify employability and career skills relevant for the 21st century Discuss how these employability and career skills can be fostered through lifelong learning 	A5.1	A5.1.1	1

Units	Sub-units	Lessons	Learning Outcomes	TCSF		Periods
				Minimum Requirements	Indicators	
		4.1.2. Career development in Myanmar	<ul style="list-style-type: none"> List examples of career fields in various regions of Myanmar Select some careers relevant to the local and regional contexts and examine the career development process for those particular careers Reflect on and discuss the career exploration process and how their own interests and skills are in line with a chosen career path 	A5.1	A5.1.1	1
	4.2. Career Development and Counselling	4.2.1. Guiding middle school students for the career development and career skills	<ul style="list-style-type: none"> Identify the importance of the career Counselling for middle school students Discuss various approaches to career guidance, exploration and Counselling programmes at the middle school levels 	A4.1 A5.2	A4.1.1 A5.2.2	1

Units	Sub-units	Lessons	Learning Outcomes	TCSF		Periods
				Minimum Requirements	Indicators	
5. Home Management Skills	5.1. Meal Planning and Nutrition	5.1.1. Healthy eating plan with local and traditional foods	<ul style="list-style-type: none"> • Explain the features of a healthy and nutritious meal plan • Appreciate the local and traditional foods as cultural heritage • Examine how to improve nutrition with diverse local and traditional foods • Develop one-day meal plan with local and traditional foods by considering different ways to make local and traditional foods healthier 	A5.1 A5.2 C1.1	A5.1.1 A5.2.1 C1.1.1	2
	5.2. Financial Literacy	5.2.1. Introduction to financial literacy	<ul style="list-style-type: none"> • Illustrate the basics of financial literacy and financial management skills • Discuss the basics of managing budgeting, income, savings and expenses • Develop a monthly budget applying financial management skills 	A5.1	A5.1.1	1

Units	Sub-units	Lessons	Learning Outcomes	TCSF		Periods
				Minimum Requirements	Indicators	
	5.3. Sustainable Living	5.3.1. Recycled products for sustainable living	<ul style="list-style-type: none"> Explain what sustainable living means and how it is relevant to home management skills Discuss the implication of making recycled products for sustainable living in Myanmar 	A5.1 B1.2 C1.4	A5.1.1 B1.2.2 C1.4.1	1
6. Assessment	6.1. Assessment of Local Curriculum	6.1.1. Assessment approaches for Local Curriculum	<ul style="list-style-type: none"> Identify formative assessment approaches for the Middle School Local Curriculum Identify summative assessment approaches for the Middle School Local Curriculum Develop success criteria for assessing middle school students' learning process 	A4.1	A4.1.1 A4.1.3	1
Total number of periods						12

Unit 3

Agriculture

This unit will continue to help student teachers build on the knowledge they have gained in Semester 1, to help them further understand and teach basic agricultural science skills as a subject area in basic education schools across Myanmar.

Expected learning outcomes

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

- Explain the importance of agriculture in Myanmar;
- Describe local crops in respective regions and communities of Myanmar;
- Identify the differences between agronomic crops and horticultural crops;
- Discuss what acidic soil problems exist and how to correct acidic soils;
- Explain types of alkaline soil problems and how to correct alkaline soils;
- Discuss the value of organic manures in agriculture;
- Describe storage and utilisation of organic manures for crop production;
- Explain the procedure of propagating certain plants using a simple grafting technique;
- Recognise causes of plant diseases and common symptoms evidenced in certain plants;
- Describe how to prevent and control of plant diseases;
- Discuss methods of pruning for landscape gardening; and
- Explain methods of shaping and adapting plants in specific forms during landscape gardening.





Competencies gained

A5.1 Demonstrate understanding of the subject matter to teach the assigned subject/s for the specified grade level/s

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

B2.1 Demonstrate capacity to monitor and assess student learning

B2.2 Demonstrate capacity to keep detailed assessment records and use the assessment information to guide students' learning progress

C1.4 Demonstrate responsibility and accountability for the use of education resources

3.5. Plant Diseases and Methods of Control

This sub-unit introduces basic knowledge about plant diseases, common plant disease symptoms and methods of control. It will help student teachers to become familiar with some common plant diseases and methods of control in teaching agriculture lessons for basic education students.

3.5.1. Causes of plant diseases

Expected learning outcome

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

- Recognise causes of plant diseases and common symptoms evidenced in certain plants.



Competencies gained

A5.1.1 Describe key concepts, skills, techniques and applications for the subjects covered in the grade levels taught

A5.1.2 Include in lessons accurate and relevant information, examples and exercises to support student learning of core subject content, skills and procedures

A5.1.3 Link key concepts, principles and theories to real life applications to build discipline specific foundations and skills for different classes and grade levels taught

B1.2.3 Create opportunities for students to investigate subject-related content and concepts through practical activities

C1.4.1 Use school supplies and resources appropriately



Time: One period of 50 minutes



Learning strategies: Group work discussion, brainstorming, concept map, practical



Assessment approaches: Presentation, observation, self-assessment



Preparation needed: Student teachers should have completed the reading in Lesson 3.5.1. in advance of the lesson; color print-outs of plant disease symptoms in Lesson 3.5.1. Student Teacher Textbook (also included in Annex 1 TG); check that there are some plants/plant parts presenting symptoms of plant disease in the school compound – if there are not any, collect and provide samples (from outside the school compound) for student teachers to assess



Resources needed: Marker, flip chart, tools to collect plant/ plant part samples (if needed)



Learning activity 1. Group discussion: Plant diseases and its causes (20 minutes)

1. Group the student teachers into small groups of five or six.
2. Ask them to discuss these questions in their groups:
 - “What are the causes of plant diseases?”
 - “How does the disease triangle explain the factors that can cause plant diseases?”
3. Ask for a few volunteer student teachers to share their discussion points to the whole class.
4. On a sheet of flipchart paper, ask student teachers to draw a concept map with “Plant disease: Effect on farmers” in the centre. Student teachers should reflect on these questions when drawing the concept map:
 - “How will plant diseases affect farmers? What are the implications of these plant diseases?”

5. Let each group present their discussion points and concept map.
6. You can write a compiled list of plant diseases from the groups' suggestions on the board or on a sheet of flipchart paper. Facilitate the group discussion and provide necessary feedback.
7. After all groups have presented, you can share some further examples of plant diseases to the class.
8. For time management, you can ask each group to only present new points building on what the prior groups have already presented.



Assessment

Observe and check the groups' discussions, presentations and concept maps. You can also check their understanding through Q&A after the group discussions/presentations.



Possible student teachers' responses

Student teachers should base their answers on what they have read in their textbook. Their lists of plant diseases will vary and will depend on their prior knowledge and the information in their textbook.



Learning activity 2. Practical and group discussion: Symptoms of plant diseases (25 minutes)

1. Briefly explain about the symptoms of disease.
2. Place student teachers in small groups of five or six. Distribute 1 or 2 color copies of the pictures different plant diseases (Annex 1 TG) for each group (same as the pictures in their textbooks).
3. In groups, they should review the different disease symptoms for the different plant diseases.
4. Assign the student teachers to collect plant/plant part samples that are seemingly infected with diseases found in the school compound or their surroundings. Each student teacher should find at least two different samples.
5. Back in their groups, allow time for each student teacher to answer these questions in their textbooks:
 - “Why do you think the plant or plant part sample is infected? What are the observable disease symptoms?”
 - “What plant disease do you think it is infected with? What could be the cause of this plant disease?”

6. If required, support the student teachers to identify the plant disease symptoms in the sample that they have collected.
7. In each group, allow the student teachers to present their findings and plant samples to their group members. The groups should ask the presenter 1 or 2 questions after their presentations.



Assessment

Observe and check the student teachers' discussions and presentations. At the end of the presentations you can ask the class, "What are the symptoms of plant diseases?", to assess the student teachers' understanding of the topic. You can also observe the plant samples the student teachers have collected to assess their ability to locate and identify plant diseases.



Possible student teachers' responses

Student teachers should identify plant or plant part samples that have been infected with disease through their prior reading of the information in the textbook. The plant samples and plant diseases student teachers find will vary depending on what is located in their surroundings.



Check student teachers' understanding (5 minutes)

1. The activities that the student teachers completed in this lesson will help them better understand real plant disease symptoms and it will be useful in teaching agricultural lessons at basic education schools.
2. Ask student teachers to look back at the learning outcomes of this lesson. Did this lesson help them to achieve them? How?
3. Remind the student teachers of the TCSF competencies this lesson focused on.
4. Summarise or recap the main points of the lesson.
5. Set the homework assignment (research) for student teachers to complete in preparation for the next lesson:

Homework assignment: In preparation for the next lesson, student teachers will need to conduct research to find out about plant diseases that are common in their local area. Explain that student teachers can conduct the research using the internet, the library, or by asking their family members, farmers or responsible members in their local community.

3.5.2. Methods of disease control

Expected learning outcome

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

- Describe how to prevent and control of plant diseases.



Competencies gained

A5.1.1 Describe key concepts, skills, techniques and applications for the subjects covered in the grade levels taught

B1.2.3 Create opportunities for students to investigate subject-related content and concepts through practical activities

C1.4.1 Use school supplies and resources appropriately



Time: One period of 50 minutes



Learning strategies: Flipped classroom, research, group discussion, brainstorming, mind map, group project, presentation, gallery walk



Assessment approaches: Group project, presentation, observation



Preparation needed: Student teachers should have completed the reading in Lesson 3.5.2. and the research on plant diseases found in their local area before the class.



Resources needed: Marker, flip chart, A4 paper, colour pencils/ crayon/ markers, arts and crafts materials (optional); VLE materials (optional, and depending on availability) e.g. colour printer, PowerPoint, phone camera



Learning activity 1. Group project: Disease control measures (45 minutes)

1. Introduce methods of disease control.
2. Ask student teachers to reflect on this question, “Why is it important to prevent and control plant diseases?” You can write a mind map on the board to document their ideas.
3. Check if the student teachers have completed the prior research. Discuss about the common plant diseases found in the local area.
4. Place the student teachers into small groups of five or six.
5. In their groups, student teachers should choose one plant disease that is common in their local area. This should be based on the research they have completed prior to the class.
6. As a group, student teachers should create a poster or leaflet to raise awareness about the disease control measures that can be taken to prevent the common plant disease they have chosen.
7. Student teachers can choose the medium with which they present this information. Examples can include: a poster, leaflet, video, PowerPoint presentation, photo collage, 3D collage etc.
8. The aim of this project is to raise awareness among the local community and farmers about methods to prevent and control plant diseases.
9. Make sure to encourage student teachers to utilise visuals to capture the attention of the intended audience.
10. If student teachers cannot finish their project in the time available, ask them to finish it as a homework assignment before the next lesson.



Assessment

You can assess student teachers’ understanding of methods to prevent and control diseases during the group brainstorming (mind map) activity.

For the group projects, you should observe the groups’ teamwork and provide support where needed. You should provide feedback on their projects by assessing how well they have achieved the aim of designing a visual material that could be used to raise awareness among the local community and farmers about methods to prevent and control plant diseases.



Possible student teachers' responses

Student teachers' projects will vary according to the plant disease they have chosen. They can base their methods of prevention and control based on the information in their textbooks, as well as their independent/ group research.



Extended learning activity. Gallery walk and presentation (10 minutes)

1. Each group should place their project around the classroom (if VLE materials are used, student teachers can present their project to the class).
2. Student teachers should take time to walk around and observe each project.
3. After the gallery walk, each group should be prepared to answer a few questions on their project from both you and other student teachers.



Assessment

Allow student teachers to ask questions about each project after the gallery walk. You can also conduct a short question and answer to assess student teachers' understanding about what criteria are important in visual materials to raise awareness about key issues in the local community.



Possible student teachers' responses

Student teachers' responses will vary depending on their projects and the questions asked. The criteria can be based on the assessment criteria used to assess the projects.



Check student teachers' understanding (5 minutes)

1. The activity that the student teachers completed in this lesson will help them better understand how to prevent plant diseases. Student teachers can apply this knowledge when teaching agricultural lessons at basic education schools, as well as to inform the local community about plant disease prevention and control methods.
2. Ask student teachers to look back at the learning outcomes of this lesson. Did this lesson help them to achieve them? How?
3. Remind the student teachers of the TCSF competencies this lesson focused on.
4. Summarise or recap the main points of the lesson.
5. In preparation for the next lesson, ask student teachers to complete the reading and watch the video clips in Lesson 3.6.1. in advance.



Expected student teachers' responses for the review questions in TB

Question 1: Draw a “disease triangle”.

Answer: Student teachers' answers should be based on the disease triangle introduced in their textbooks in Lesson 3.5.1. (Figure 3.12).

Question 2: What are symptoms of a plant disease?

Answer: Student teachers' answers should be based on the “disease symptoms” section in Lesson 3.5.1. in their textbooks.

Question 3: Explain cultural control measures for plant diseases.

Answer: Student teachers' answers should be based on the “cultural control” section in Lesson 3.5.2. in their textbooks.

3.6. Landscape Gardening for Schools

This sub-unit covers pruning and training, which are some of the major practices in landscape gardening. Student teachers can use the knowledge and skills developed from this lesson for their future schools to help them create a green and beautiful school campus in real-life.

3.6.1. Pruning

Expected learning outcome

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

- Discuss methods of pruning for landscape gardening.



Competencies gained

A5.1.1 Describe key concepts, skills, techniques and applications for the subjects covered in the grade levels taught

B1.2.1 Use teaching methods and learning strategies appropriate for the class – culture, size and type

B1.3.1 Plan and structure lesson to ensure all the lesson time is used effectively

B2.1.3 Use questioning and discussion techniques to check students understanding and provide feedback



Time: One period of 50 minutes



Learning strategies: Flipped classroom, VLE (videos), group discussion, observation, practical



Assessment approaches: Observation, Q&A, reflection journal



Preparation needed: Student teachers should have completed the reading and watched the video clips in Lesson 3.6.1. in advance; cleaning and sharpening of pruning tools (hand pruners, pruning saw and pruning shears); download the two video clips related to pruning:

“Heading back” pruning video:

<https://www.youtube.com/watch?v=1bYEEaXxkw4>

“Thinning out” pruning video:

<https://www.youtube.com/watch?v=kZV0iSXLfOM>



Resources needed: Pruning tools (hand pruners, pruning saw and pruning shears) – enough for one tool for each group; some ornamental plants; projector and screen; downloaded videos from Lesson 3.6.1.



Learning activity 1. Group discussion and practical activity: Heading back and thinning out pruning (45 minutes)

1. Check if the student teachers have finished watching the two video clips on types of pruning before the lesson.
2. Place the student teachers into small groups of five or six.
3. Review the meaning of pruning and types of pruning to the student teachers.
4. In groups, let student teachers discuss about these questions:
 - “Why is pruning an important method used in landscape gardening?”
 - “What are the similarities and differences between “heading back” pruning and “thinning out” pruning?” (remind student teachers to think about the technique, tools used, and intended effect)
 - “How can we decide whether to use “heading back” pruning or “thinning out” pruning methods?”

5. Demonstrate pruning methods on some potted ornamental plants to the student teachers. Demonstrate the safe and appropriate way to use the different pruning tools.
6. Assign the student teachers to prune some ornamental plants in the school compound practically. You can allocate each group to share one of the tools used for pruning.
7. Encourage student teachers to think carefully about which pruning methods they should use and why.
8. Guide and give feedback to the student teachers during their pruning.
9. Student teachers should reflect on their pruning practical activity in their textbooks. For time management, this can be completed as a homework assignment.



Assessment

Observe student teachers' groups discussions by circulating around the classroom. Ask a few groups to share their discussion points or conduct a short Q&A.

Observe and evaluate the students' application of knowledge on pruning of some ornamental plants in practical work. You also can ask student teachers to share their reflection points at the end of the lesson.



Possible student teachers' responses

In the practical activity, student teachers should follow the instructions for the pruning methods that you have explained in the class. Student teachers should decide to use the “heading back” or “thinning out” pruning method depending on the nature of the plant they are pruning.



Check student teachers' understanding (5 minutes)

1. The activity that the student teachers completed in this lesson will help them better understand pruning methods for landscaping gardening. This will be useful when teaching agricultural lessons at basic education schools. Student teachers will also be able to apply these methods to conduct or provide advice on landscape gardening in their local communities or in their future school compounds.

2. Ask student teachers to look back at the learning outcomes of this lesson. Did this lesson help them to achieve them? How?
3. Remind the student teachers of the TCSF competencies this lesson focused on.
4. Summarise or recap the main points of the lesson.
5. In preparation for the next lesson, ask student teachers to complete the reading and watch the video clips in Lesson 3.6.2. in advance.

3.6.2. Adapting plants

Expected learning outcome

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

- Explain methods of shaping and adapting plants in specific forms during landscape gardening.



Competencies gained

B2.2.1 Record students learning progress accurately and consistently

B2.2.3 Communicate students' learning progress and achievement to students, parents and other educators

D2.1.1 Discuss teaching practices with supervisors and colleagues, and willingly seek constructive feedback

D3.1.1 Identify relevant professional learning material to improve own practice



Time: One period of 50 minutes



Learning strategies: Flipped classroom, VLE (videos), group discussion, think-pair-share, individual assignment, gallery walk



Assessment approaches: Observation, Q&A, peer-assessment



Preparation needed: Student teachers should have completed the reading and watched the video clips in Lesson 3.6.2. in advance.



Resources needed: Flipchart paper, A4 paper, pencils, colour pencils, markers, video clips on espalier training and topiary training:

Espalier training video clips:

<https://www.youtube.com/watch?v=OdD13x2mRM0>

<https://www.youtube.com/watch?v=bRzpL30jRzA>

Topiary training video clips:

<https://www.youtube.com/watch?v=OwepKnyyj7w>

<https://www.youtube.com/watch?v=mk1EM-RZKFY>



Learning activity 1. Individual assignment: Design your own garden (45 minutes)

1. Check if the student teachers have finished watching the four video clips on espalier training and topiary training before the lesson.
2. Place the student teachers into small groups of five or six.
3. Explain to the student teachers about the meaning of “training of plants” and the different types of training.
4. In groups, let student teachers discuss about these questions:
 - “Why are training methods used in landscape gardening?”
 - “What are the common training methods used for shaping and adapting plants in landscape gardening?”
 - “How can we use these training methods?”
 - “Which training methods do you like best? Why?”

5. Ask student teachers to imagine their dream garden. Let them think for a few minutes about these questions:
 - “What plants and trees would you choose to have in your garden? Why?”
 - “How big will the garden be? What can fit inside this garden?”
 - “How would you shape and adapt your plants? What training methods would you use?”
6. In pairs, let student teachers share their ideas about their dream garden with each other. You can call on a few volunteers to share their ideas with the class.
7. Explain to student teachers that now they will have the chance to design their own garden. This will be an individual assignment.
8. On flipchart or A4 paper, student teachers should draw their ideal garden and label the different trees and plants that they want to include. They should also label the pruning methods and training methods that they would use in order to get the shape or form of the trees and plants that they desire.
9. If time allows, student teachers can conduct a gallery walk to observe their peers’ dream gardens.



Assessment

Observe student teachers’ group and pair discussions by circulating around the classroom. Ask a few groups to share their discussion points or conduct a short Q&A.

Observe and evaluate the students’ application of knowledge on training methods through their designing of their own garden. Student teachers should apply their knowledge of pruning and training methods when labelling their garden.



Possible student teachers’ responses

Student teachers’ individual assignments will vary based on their interests, imagination and creativity. However, all student teachers should mention which training methods they will use in order to get the shape and form of the plants/ trees that they desire.



Check student teachers' understanding (5 minutes)

1. The activity that the student teachers completed in this lesson will help them explain and use these training methods when teaching agricultural lessons at basic education schools. Student teachers will also be able to apply these methods to conduct or provide advice on training methods for landscape gardening in their local communities or in their future school compounds.
2. Ask student teachers to look back at the learning outcomes of this lesson. Did this lesson help them to achieve them? How?
3. Remind the student teachers of the TCSF competencies this lesson focused on.
4. Summarise or recap the main points of the lesson.
5. In preparation for the next lesson, ask student teachers to complete the reading Lesson 4.1.1. in advance. They should also review Lesson 4.1.1. in Year 1, Semester 2 Local Curriculum (career skills) in advance of the lesson.



Expected student teachers' responses for the review questions in TB

Question 1: Define “pruning”.

Answer: Student teachers' responses will vary but should touch on the following elements: Pruning means the removal of plant parts, such as buds, developed shoots, and roots, to maintain a desirable form by controlling the direction and amount of growth. Pruning methods depend on the life span, structure, and growth habits of a plant. If the natural form of the plant is undesirable, we can direct the growth to a limited degree to the desired form through pruning.

Question 2: When is heading back necessary?

Answer: Student teachers' responses may be varied – but the general sentiment should be that heading back pruning is used to rejuvenate plants.

Question 3: What is “training” in landscape gardening?

Answer: “Training of plants” refers to the shaping and adapting of plants to specific forms so they can function more efficiently or effectively. Training includes tying, fastening, staking or supporting them on a trellis or pergola in a certain fashion. It can also mean removing some of the parts of a plant to form a specific shape.

Question 4: Give a brief description of how to use the open centre training method.

Answer: In this technique, the trunk is allowed to grow only up to a certain height and the leader stem is pruned to encourage the growth of scaffold branches. This technique produces what are also called “vase-shaped” shapes. The open centre technique allows full sunshine to reach each branch.

Unit Summary



Key messages

- Agriculture is the backbone of our economy, contributing to the overall economic growth of the country. As the majority of people in our country live in rural areas and are engaged in agricultural activities, learning and teaching about agriculture in Basic Education schools will be of immense help to promote our agricultural sector.
- In this unit, student teachers have learnt and developed key basic agricultural lessons such as the importance of agriculture in Myanmar, the nature of agronomic crops and horticultural crops, correction of acidic and alkaline soils, utilisation of locally available animal manures, plant propagation by grafting, plant diseases and its control measures, and pruning and training of plants.
- Student teachers should be encouraged to take this agricultural knowledge and skills with them to transfer to their future generation of students when they become teachers at Basic Education schools.



Unit reflection

Now that student teachers have learnt the basic concepts and knowledge of agriculture to be taught to middle school students in future, they have developed some technical know-how and practical experiences on agriculture lessons.

Allow student teachers to spend some time reflecting on what they learnt in this unit and how they have learnt about it.

Student teachers should think about how they will carry over their knowledge and skills to teach these agriculture lessons effectively to middle school students.

Student teachers would need to read and review some lessons in future. Some useful and relevant links are provided for further reading.



Further reading

Hill, D., & Waller, J. (1990). *Pests and diseases of tropical crops (Vols. 1-2)*. London, England: Longman.

List of plant diseases. (2016, July 15). In *Encyclopedia Britannica Online*. Retrieved from <https://www.britannica.com/topic/list-of-plant-diseases-2033263>

Michigan State University Extension. (2012, December 19). Signs and symptoms of plant disease: Is it fungal, viral or bacterial? Retrieved from https://www.canr.msu.edu/news/signs_and_symptoms_of_plant_disease_is_it_fungal_viral_or_bacterial

Plant disease control [PowerPoint slides]. Retrieved from <http://cemerced.ucanr.edu/files/40658.pdf>

Sharma, P. *Plant disease management* [PowerPoint slides]. Retrieved from <http://www.hillagric.ac.in/edu/coa/ppath/lect/plpath111/Lect.%2013%20P1%20Path%20111-%20Principals%20of%20plant%20dis.%20management.pdf>

3.6.

Principles of pruning. (n.d.). Retrieved from <https://images.homedepot-static.com/catalog/pdfImages/1d/1d7d9b5d-d71b-4a8d-b0f5-c2caf8f8f7e.pdf>

Pruning and training. (n.d.). Retrieved from <http://ecoursesonline.iasri.res.in/mod/page/view.php?id=1588>

Singh, A. K., & Sisodia, A. (2017). *Textbook of floriculture and landscaping*. New Delhi: New India Publishing Agency.

Unit 4

Career Development and Career Skills

This unit introduces student teachers to the concept of employable skills and covers the range of life skills necessary to establish in students at an early age. It also provides basic information about various career opportunities that may be available in the different regions and states of Myanmar.

Expected learning outcomes

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

- Explore and identify employability and career skills relevant for the 21st century;
- Discuss how these employability and career skills can be fostered through lifelong learning;
- List examples of career fields in various regions of Myanmar;
- Select some careers relevant to the local and regional contexts and examine the career development process for those particular careers;
- Reflect on and discuss the career exploration process and how their own interests and skills are in line with a chosen career path;
- Identify the importance of the career Counselling for middle school students; and
- Discuss various approaches to career guidance, exploration and Counselling programmes at the middle school levels.





Competencies gained

A4.1 Demonstrate understanding of the structure, content and expected learning outcomes of the basic education curriculum

A5.1 Demonstrate understanding of the subject matter to teach the assigned subject/s for the specified grade level/s

A5.2 Demonstrate understanding of how to vary delivery of subject content to meet students' learning needs and the learning context

4.1. Employability Skills and Career Development

This sub-unit introduces some considerations to be taught in Middle School about the careers available in various regions and states. Local industries that offer employment opportunities are introduced, and other income generating activities and employment sectors are also covered.

The first lesson focuses on employable and career skills. The second lesson provides some basic information about various careers possible in various regions and states, such as handicrafts, making commercial goods and small medium enterprise. It also discusses the skills relevant to those careers that would help middle school students think about their future careers.

4.1.1. Employability and career skills

Expected learning outcomes

By the end of the lesson, student teachers will be able to:

- Explore and identify employability and career skills relevant for the 21st century; and
- Discuss how these employability and career skills can be fostered through lifelong learning.



Competency gained

A5.1.1 Describe key concepts, skills, techniques and applications for the subjects covered in the grade levels taught



Time: One period of 50 minutes



Learning strategies: Class discussion, observation, pair discussion, presentation



Assessment approaches: Observation, Q&A



Preparation needed: Student teachers and teacher educators should review Lesson 5.2.1. (Career Skills) in Year 1, Semester 2 Local Curriculum before the lesson; student teachers should have completed the reading in Lesson 4.1.1. (career and employable skills) in advance; download video clip ‘Strengthening Small Scale Business through MAT’: <https://www.youtube.com/watch?v=tkdhIlx5DZE>



Resources needed: Flip chart, marker pen, video clip



Learning activity 1. Class discussion: Review and understand employable skills (15 minutes)

1. Check if student teachers have completed the prior reading.
2. Explain the following to student teachers:
 - The region or state that student teachers will eventually be teaching in will influence the types of career that will be available to students when they have left school.
 - The unique market needs and income generating activities in each state/region should be taken into consideration when teaching this subject at your future school.
3. Ask student teachers to reflect on the following questions:
 - a. “What are the career skills discussed in Year 1?”
 - b. “What are the new essential employable skills that you have discussed in Year 2?”
4. Ask student teachers to share their ideas and record their answers on the board or on flipchart paper in the form of a T-chart:

Year 1	Year 2

5. Ask volunteers to share their understanding of each new employable skill discussed in Year 2. Other student teachers can add their opinions.
 - a. You can allow student teachers to discuss briefly in pairs first.
6. As a class, brainstorm ways these employability and career skills can be fostered through lifelong learning. Write student teachers' suggestions on the board.
7. Guide the discussion and provide feedback as necessary. You can ask these guiding questions if required:
 - a. How can we improve these employability and career skills?
 - b. What are your ideas about lifelong learning? Can we only learn when we are young and at school?
 - c. Do you think it is possible to keep learning as your grow older? How?
8. Summarise employable skills:
 - The term employable skills refer to a set of sought-after skills as well as behaviours that make a person a highly attractive candidate.
 - These are skills which businesses desire.

- Student teachers and middle school students can improve their skills in many ways every day. We can continue learning throughout our lives by taking on new classes or attending workshops, learning from our peers or members of our community (through observation or asking questions), or simply from our everyday or new experiences.
- Furthermore, student teachers can assess their employable skills by taking free online tests.



Assessment

Observe student teachers' awareness of the career skills discussed in Year 1 and the new essential employable skills discussed in Year 2 by asking Q&A and recording their ideas on the T-chart. Observe the class discussion and provide guidance and feedback as necessary.

Encourage student teachers to share their experiences and opinions about the importance of the different essential employable skills.



Possible student teachers' responses

Student teachers should base their answers from their review of Lesson 5.2.1. from Year 1 Semester 2 (career skills) and prior reading of Lesson 4.1.1. from Year 2, Semester 2 (career and employable skills).

Student teachers' explanations of the different employable skills may vary due to their personal experience and opinions. You should encourage experience sharing.



Learning activity 2. Video presentation and discussion: Social and personal development skills (30 minutes)

1. Ask student teachers to observe Table 4.1. 'Social and personal development skills connecting to employable skills' in their textbooks.
2. In pairs, ask student teachers to discuss how social and personal development links to employable skills. Ask a few student teachers to share their ideas.
3. As a class, watch 'Strengthening Small Scale Business through MAT' video clip: <https://www.youtube.com/watch?v=tkdhIix5DZE> .

4. In pairs, ask student teachers to discuss the following question:
 - a. In the future, if your students work in the career outlined in the video, what employable skills are needed? Explain with reasons.
5. Let student teachers write their explanations individually in their textbooks.
6. Invite a volunteer in each group to present their ideas and experience.
7. Record the skills that they identify on the board. Give all pairs an opportunity to share their thoughts.
8. Summarise by emphasising that professional work skills are important for everyone because we use these skills in many different aspects of our lives to solve everyday problems.



Assessment

Observe student teachers' discussions about how social and personal development links to employable skills. You can ask a short Q&A to assess their understanding.

Assess student teachers' application of knowledge through observing their ability to identify the employable skills needed to work in the career outlined in the video clip.



Possible student teachers' responses

With reference to the career in the video clip, student teachers should be able to give a variety of employable skills that might be need. This should relate to their future students' social and personal behaviours, for example, using critical thinking, problem solving, decision making, leadership skills or oral communication skills.



Facilitator's notes

Check on less confident student teachers while they are reviewing the lesson to see if they understand the content by asking questions and giving cues for comprehension.



Check student teachers' understanding (5 minutes)

1. In this lesson, student teachers have developed their understanding of career and employable skills which will be useful when preparing middle school students for successful future careers.
2. Ask student teachers to look back at the learning outcomes of this lesson. Did this lesson help them to achieve them? How?
3. Remind the student teachers of the TCSF competencies this lesson focused on.
4. Summarise or recap the main points of the lesson.
5. In preparation for the next lesson, ask student teachers to complete the reading in Lesson 4.1.2. in advance.

4.1.2. Career development in Myanmar

Expected learning outcomes

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

- List examples of career fields in various regions of Myanmar;
- Select some careers relevant to the local and regional contexts and examine the career development process for those particular careers; and
- Reflect on and discuss the career exploration process and how their own interests and skills are in line with a chosen career path.



Competency gained

A5.1.1 Describe key concepts, skills, techniques and applications for the subjects covered in the grade levels taught



Time: One period of 50 minutes



Learning strategies: Flipped classroom, class discussion, group work, think-pair-share, presentation



Assessment approaches: Observation, Q&A



Preparation needed: Student teachers should have read Lesson 4.1.2. prior to the class; you should do some prior research about career opportunities available in different local and regional careers around Myanmar to provide as examples (since the region that student teachers will work in the future will vary)



Resources needed: Flip-chart, markers, printed articles on jobs within the area, local career descriptions



Learning activity 1. Speed reflection: Career (10 minutes)

1. Split student teachers into two equal-sized groups. If required due to space limitations, you can split student teachers into four equal-sized groups.
2. Ask two groups to form two lines, opposite each other. Each student teacher will face another student teacher.
3. Tell the student teachers that you will ask them a question and they will have to tell their answers to their partners.
4. Allow 2 minutes for the partners to discuss their answers for each of the following questions:
 - “What is a career?”
 - “Why did you choose to become a teacher?”
 - “How is being a teacher part of my career?”
5. Wrap up the activity by asking for volunteers to share their answers in front of the whole class.



Facilitator’s notes

In order to make the grouping more engaging, have students initially line up according to birthday month, and then divide the student teachers into two groups. In this manner, you are also ensuring that student teachers are not only pairing up with student teachers they are familiar with – this gives a chance for student teachers to get to know each other better.



Assessment

Assess how engaged student teachers were in their conversations with their peers. Remember that you are not assessing them on the quantity of their answers, but rather on student teacher's ability to reflect and formulate answers.



Possible student teachers' responses

Students may have an array of answers to the question “What is a career?” They may respond by touching on the content already learnt in Year 1. Their responses will mainly say how a career is a way to make a living. A career is an occupation undertaken for a significant period of a person's life which has opportunities for progress.

Student teachers may give an array of answers to the question “Why did you choose to become a teacher?” Draw from your own personal experiences as to why you chose to become a teacher, and reflect on the parallels with your student teacher's responses.

For “How is being a teacher part of my careers?”, student teachers may answer that they plan to be a teacher for a longer period of time, potentially for their whole career. It is also their way to make a living. This question should be linked to the first question.



Learning activity 2. Group discussion: Myanmar industries (10 minutes)

1. Group student teachers into groups of three or four.
2. Check if student teachers have completed the reading of “Overview of Myanmar industries” prior to the lesson.
3. Student teachers should discuss the following questions in their groups:
 - a. Which industries do you consider the most important to the country? To your local community? Why?
 - b. Which industries are connected to one another? Why?
 - c. Which industries would be the most relevant for middle school students in your community to learn?

- Once the discussion time has elapsed, ask a few student teachers to volunteer to share about what their group has discussed.



Facilitator's notes

To improve the discussion, adapt and employ different strategies to create a more comfortable atmosphere for students. Move out of the students' immediate sight. By the teacher sitting in the back of the classroom during the discussion, students are forced to focus on each other. If the conversation still lulls, then you can step in to ask follow-up questions to get the students talking again.

When you are leading the discussion towards the end of this learning activity, it is important to wait. All too often teachers do not give students time to answer before they answer their own questions. The wait time after the question is asked gives students time to process the question and come up with an answer.

Even in small group discussions, students who are shy or less confident may not contribute. But there are ways you, as the teacher educator, can make students feel more comfortable. Have students do a think-pair-share within their smaller groups before asking them discuss in their small groups. To encourage and challenge these shier students, ask them to be the representative from their group to summarise their group discussion.



Assessment

Assess student's quality of discussion by employing group assessment so that students are assessed by the collective work of the group rather than individually; thereby encouraging collaborative peer work.



Possible student teachers' responses

Student teachers may say that the business industry or small to medium enterprises (SME) are the most important industries in Myanmar, since economic development is dependent on the landscape and conditions of the country's businesses. Other student teachers may argue that the technology industry is the most important because it promotes the most efficiency and ensures that our country and communities

modernise. Others may argue that since 70 percent of the population is involved in agriculture, and we are all reliant on the food our country produces, the agriculture industry is the most important. Student teachers may also argue that the tourism and handicraft industries are important as they ensure the preservation of our natural and cultural heritage. Regardless of the variety of answers and possible reasons, make sure that student teachers draw connections between the different industries and challenge their assumptions if it seems that one industry is being favoured above the rest.



Learning activity 3. Think-pair-share and group discussion: Local career exploration (25 minutes)

1. Ask the student teachers “What are some career opportunities available in your local or regional area?”. Record the answers on the board. You can also provide suggestions if required.
 - a. As the teacher educator, you can share printed articles on jobs within the area and read local career descriptions from your research prior to the lesson. This will provide student teachers with some real-life examples of career opportunities available in the local area. You can add these examples onto the board.
2. Explain briefly about what public, private and third sectors are.
3. In pairs, student teachers have to use the answers from the brainstorming activity on the board to fill in the table in their textbooks. The aim for student teachers is to divide local and regional careers into the three categories of public, private and third sector, and explain why they have divided them that way.
4. After student teachers have finished filling in the table, ask a few student teachers to share their answers.
5. Let student teachers briefly think about which of the private sector businesses would be considered a micro-business, small business and medium sized business, based on the number of employees they think there would be. They should discuss their ideas in pairs.
6. Each pair should choose one local/ regional private sector career to discuss about (micro-business, small business, medium-sized business)

7. In pairs, student teachers should discuss:
 - a. What kind of career is this? What kind of work does it involve?
 - b. What skills are needed to do this job successfully?
 - c. What skills can one gain from this career?
 - d. What is the value in this career?
8. Student teachers can write their discussion points on flipchart or A4 paper if desired.
9. Monitor the student teachers' discussion in pairs and give support to answer the questions if required.
10. Invite a few pairs to present the discussion points for their chosen career. Other pairs can add their opinions if needed. You should provide appropriate feedback and build on student teachers' discussion points to consolidate their understanding.
11. Summarise the presentation points.
 - All regions/states in Myanmar have plenty of regional products, for example in agriculture, forest, sea, several minerals, wide growth in manufacturing sectors and private sector activities, etc. This leads to a variety of private businesses (micro-business, small business, medium-sized businesses) existing in different local and regional areas.
 - Emphasise the importance of developing middle school students' employable skills, which are essential for their future successful careers.



Assessment

Can student teachers give a variety of careers in their region? Encourage the student teachers to share their experience about careers and jobs in their region.

As the learning activity progresses, circulate around the classroom and answer any clarifying questions students might have. Be careful not to give so much information that student teachers are not given the opportunity to come up with their own analysis. Assess student teachers on their ability to summarise and present about their chosen career succinctly.



Possible student teachers' responses

Student teachers should be able to give a variety of careers in their local/regional based on their experiences.

Student teacher responses will depend on the careers that they choose to discuss about. Anticipate that presentations will pertain to local context. But essential basic career skills will form the foundation of many careers.



Extended learning activity. Group discussion: Inclusive education (15 minutes)

1. Explain that inclusive education in middle schools is important to ensure that *all* students feel welcome to participate, learn and succeed at school.
2. Ask the student teachers about what issues and barriers middle school students might face in participation at school. These might be factors related to gender, disability, ethnicity, race, religion, socioeconomic status. Write down student teachers' ideas on the board.
3. Discuss about the challenges that middle school students may face relating to these different factors.
4. Ask follow-up questions based on these factors and challenges. After asking each question, let student teachers spend a few minutes discussing with their partner, before asking a few volunteers to share their ideas with the class. Example questions include:
 - a. Have you witnessed students being prevented from taking part in an activity, due to their gender?
 - b. Can you recall a time in which you experienced or witnessed a student who struggled expressing gender the way they want to?
 - c. Discuss an example of an experience where you or another student faced discrimination based on race, ethnicity or religion.
 - d. Have you seen students with different learning capacities not being given the support they require?
5. After sharing experiences on what factors sometimes prevent students from accessing education, discuss about the ways in which student teachers could support these students.

6. Allow student teachers to lead the discussion. Here are some discussion prompts:

- a. How can we support students dealing with personal difficulties?
- b. How can we reach out to students that are facing discrimination?
- c. How can we prevent discrimination in the classroom?
- d. How can we learn more about the varying needs and abilities of our students?
- e. How can we build a friendly, welcoming and inclusive environment that is accessible for *all* students, regardless of background?



Assessment

Observe student teachers' pair and group discussions.



Possible student teachers' responses

Student teachers' responses will vary according to their personal experience. Make sure that you develop an environment of trust where student teachers feel comfortable to share their experiences, which may sometimes be personal. Remind student teachers to be aware of any preconceived biases they may have. Encourage student teachers to think inclusively in order to develop their inclusive education mindsets.



Check student teachers' understanding (5 minutes)

1. Ask student teachers how to understand SME and how to connect different categories of SME. In this lesson, student teachers have developed their understanding of businesses, enterprises and career opportunities that are available in their local and regional area. This will be helpful when providing career guidance to their future middle school students. Remind student teachers that career opportunities may vary from region to region depending on the products, businesses and resources that are available.
2. Ask student teachers to look back at the learning outcomes of this lesson. Did this lesson help them to achieve them? How?
3. Remind the student teachers of the TCSF competencies this lesson focused on.

4. Summarise or recap the main points of the lesson.
5. In preparation for the next lesson, ask student teachers to complete the reading in Lesson 4.2.1. in advance.



Expected student teachers' responses for the review questions in TB

Question 1: What are essential employable skills?

Answer: Student teacher's responses will vary. It is important that they are able to put things into their own words. However, it should hit the following elements – employable skills are the skills employers look for in potential employees. They include problem-solving, communication ability, adaptability, collaboration ability, time and resource management, organisation, technology use, information use and personal behaviour.

Question 2: What do you think middle school students should know about essential employable skills? Why?

Answer: This is a personal question, there will be a variety of responses that can be expected from student teachers. The advice they could provide can be based on personal experiences or key points they have learnt from the lesson. Middle school students should know that these skills turn students into a very attractive candidate or employee.

Question 3: How will you advise middle school students to develop their skills?

Answer: This is a personal question, there will be a variety of responses that can be expected from student teachers. The advice they could provide can be based on personal experiences or key points they have learnt from the lesson.

Question 4: What is the value of learning about regional and local careers?

Answer: Being able to understand and discuss regional and local careers with middle school students is one of the many ways to encourage and foster economic and cultural growth within the country.

Question 5: How can you encourage middle school students to explore local career options?

Answer: Encouraging middle school students to explore careers through role play – allowing them to pretend to have different jobs and then reflect on which they were most interested in; asking middle school students what they like to do in their free time and use this information to guide recommendations to students; encourage middle school students to go out and identify careers in their area.

4.2. Career Development and Counselling

This sub-unit introduces the concept of career skills. This subject area will cover a range of life skills that are necessary to establish in students at an early age, and provides some basic information about career counselling that may be available in discuss methods of guiding middle school students in choosing potential careers.

4.2.1. Guiding middle school students for the career development and career skills

Expected learning outcomes

By the end of the lesson, student teachers will be able to:

- Identify the importance of the career Counselling for middle school students; and
- Discuss various approaches to career guidance, exploration and Counselling programmes at the middle school levels.



Competencies gained

A4.1.1 Describe key concepts, content, learning objectives and outcomes of the lower secondary curriculum for the subjects and grade level/s taught

A5.2.2 Explain how lessons are contextualised to include localised information and examples related to the subject content, concepts and themes



Time: One period of 50 minutes



Learning strategies: Brainstorming, class discussion, group work, pair work, think-pair-share and research



Assessment approaches: Observation, Q&A, Self-assessment, Peer-assessment



Preparation needed: Student teachers should have completed the reading in lesson 4.2.1. in advance; You (teacher educator) should find online sources, newspapers articles or use your own knowledge and experience to assist student teachers in their research about different careers in Learning activity 2.



Resources needed: flip charts, maker pens, research materials on different careers



Learning activity 1. Brainstorming: Career counselling case study (10 minutes)

1. Let student teachers read the case study about Shwe Mi and Nyi Nyi in their textbooks.
2. Let student teachers discuss the following questions in pairs:
 - a. Why do you think Nyi Nyi does not want to go to work?
 - b. Why might Shwe Mi be happy at work?
 - c. Why might Nyi Nyi and Shwe Mi have different experiences?
3. Let the student teachers come up and write their answers on the board.
4. Summarise as follows:
 - When middle school students think about choosing a career, it is important to think about the many different opportunities that are available. Most importantly, you have to think about what they might like or enjoy doing, as well as utilising the qualities and skills that they have. Remember, that they should choose a career or job that would also challenge them in order to support their personal growth.

- If middle school students will think about these factors carefully and thoroughly, there is a higher chance that they will be happy in their future work.
- However, it is also important to be flexible and adaptable, since sometimes it is impossible to plan or foresee everything, and there will be factors outside their control or awareness that might affect their happiness at work.



Assessment

Observe student teachers' discussions and you can provide feedback on the ideas they have shared on the board.



Possible student teachers' responses

Ideally, the student teachers will try to understand Shwe Mi's and Nyi Nyi's situations and reflect on why each of their experiences was different. For example, they might imagine that the workplace is a small bookstore.

The student teachers can think about what kind of person would be happy working in a bookstore. Perhaps Shwe Mi likes to read. She likes talking to customers about books and helping them find what they want. She is also good at the business side and knows what kinds of books to stock and how to arrange them on display for sale. Then the students can imagine why Nyi Nyi would not be happy in a bookstore. What kind of person is he? Perhaps he has a lot of energy and does not like to be inside. Perhaps he does not like to read. Perhaps he does not like the owner telling him to restock the books – he finds this work boring and the owner demanding.

Finally, student teachers can think about a better choice for Nyi Nyi. Since he has so much energy, maybe physical work would be better for him, like making deliveries or even construction. Or maybe he is interested in health and fitness, so could work at a gym. Or, since he does not like dealing with an owner, he can start his own small business with friends from his village.



Learning activity 2. Think-pair-share and self-assessment: Researching a career (20 minutes)

1. Check if student teachers have read ‘Career counselling and importance of career counselling’ in their text book.
2. Ask student teachers to reflect on the following questions:
 - a. What is career counselling? Why is it important?
 - b. Who or what influenced your decision to choose to become a teacher?
 - c. How old were you when you decided to choose to follow the career path of a teacher?
 - d. What support do you wish you could have had when choosing a career at middle school/ high school?
3. In pairs, let student teachers discuss their ideas. Ask a few student teachers to share their discussion points with the class.
4. Instruct student teachers to look at the ‘Researching a career’ box in their textbooks.
5. In their same pairs, let student teachers choose a career path that they would like to research about. It can be a local career, a career your friend or family member is interested, or a career they were interested in when they were younger.
6. Explain that student teachers can conduct their research using online sources such as <https://www.bls.gov/ooh/> (American Occupational Outlook Handbook website). Remind student teachers that this is an American source, so they need to make sure that the information they find is also relevant to Myanmar, or adapt it so that it is.
7. Student teachers can also ask members of their community who may be working in that career to help them conduct their research. Remind them to be sensitive and respectful when asking personal questions.
8. After conducting their research, they should answer the questions in the “Researching a career” box in their textbooks.
9. If there is not enough time to complete this activity, then student teachers can complete the research as a homework assignment.



Facilitator's notes

Encourage student teachers to research careers other than a teacher. Remember, this activity is to develop their knowledge about different careers in order to give advice to their middle school students in the future. You can give suggestions if student teachers find it difficult to choose what career to research about.



Assessment

Observe student teachers' abilities to conduct research on their chosen career. Provide guidance and feedback as necessary. You can share some online resources, newspapers or your own knowledge and experience to assist student teachers in their research. Observe how well student teacher engage with their partner.



Possible student teachers' responses

Student teacher responses will vary depending on the career they have chosen to research about. They should complete the "Researching a career" box with appropriate information.



Learning activity 3. Practical work: Guiding middle school students in career selection (15 minutes)

1. Instruct student teachers to look at "Is this career a good fit for me?" box in their textbooks. Make sure student teachers understand the meaning of the statements in the box by conducting a short Q&A.
2. In the pairs from the previous activity, let student teachers to take turns to interview each other using "Is this career a good fit for me?" in their partner's textbook. They should place an 'X' in front of the statements that reflect their partner's interests, abilities and talents.
3. Now, ask student teachers to look back at the research that they conducted in pairs in Learning activity 2 about career they chose. In their own textbooks let them place an 'O' in front of the statements that are true for the career that they researched.

4. Student teachers should self-assess *how compatible* the job that they researched would be for them.
5. Explain that if they have many ‘O’s and ‘X’s matched in their box, it means that the career could be quite a good fit for them. If they do not have many ‘O’s and ‘X’s matched, it means that the career that they researched might not be the right fit for them.
6. In their pairs, let student teachers discuss about how they could guide middle school students with their career choices using similar techniques. Call on a few pairs to share their ideas with the class.
7. After that, summarise the key points.
 - Career counselling is very important for choosing the right career path for middle school students’ future life.
 - Children need to understand their strengths, weaknesses, values, level of education, personal interests, skills and capacities in to order to make the right decision.
 - The guidance and support from a teacher can play an important role in the process.
 - Teachers should therefore be trained to promote skills and capacities needed to guide and support students.



Assessment

Observe how well the student teachers could interview their partner. This could be a good practice for student teachers in the future where they will guide middle school students with career choices. Observe how well student teachers can apply the research that they conducted in Learning activity 2 to complete the activity in Learning activity 3. Student teachers should use self-assessment to assess whether the career they researched could hypothetically be a right fit for them.



Possible student teachers’ responses

Student teacher responses will vary according to their own personal interests and qualities, as well as the career that they have researched in Learning activity 2.

It is important for student teachers to understand the process of working with their own students to determine a good fit between a middle school student and their potential future careers. A first step is a basic assessment like these worksheets, which will encourage students to think, and to make them aware of their own personalities, their situation, their abilities, and then the possibilities around them. Encourage the student teachers to also think about how they might adapt the worksheets to be even more relevant to the lives of their students.



Check student teachers' understanding (5 minutes)

1. Remind student teachers that the learning outcome of this lesson was to discuss methods of guiding middle school students in choosing potential careers. Ask student teachers to turn to their partner and explain the importance of career counselling for middle school students and how teachers can guide and support them.
2. Remind the student teachers of the TCSF competencies this lesson focused on.
3. Summarise or recap the main points of the lesson. You can also nominate two or three student teachers to explain about whether the aptitude assessments ('Researching a career' and 'Is this career a good fit for me?') are important or not.
4. In preparation for the next lesson, ask student teachers to complete the reading in Lesson 5.1.1. in advance.



Expected student teachers' responses for the review questions in TB

Question 1: What opportunities will middle school students get after receiving career counselling?

Answer: *Middle school students will have the following opportunities:*

1. *They will receive career guidance before going to choose an academic stream after taking the board exams and they will know about advantages and disadvantages of various career options. They will be able to analyse their own strengths, weaknesses, and interest.*
2. *Choose a career goal, plan for a better future ahead, select the best-suited career path and ensure a good future.*

Question 2: How will you give your pupils career counselling?

Answer: *Can utilise knowledge gained in Lesson 4.2.1. and adapt the worksheets 'Researching a career' and 'Is this career a good fit for me?' for middle school students.*

Question 3: How can teachers help pupils chose a career? Give short answers.

Answer: *Student teacher responses may include the following points: through child counselling programs, to give guidance and comprehensively discuss the advantages and disadvantages of various career options. Career counselling is a highly effective way in analysing the strengths, weaknesses and interests of a child and then selecting the best suited profession according to that. The advice and counselling provided is based on personality, ability and interests.*

Unit Summary



Key messages

- *Employable skills* are a set of highly desirable, transferable skills that turn you into a very attractive candidate or employee. They can be defined as a set of skills employers want from a potential employee.
- Essential employable skills are problem-solving, communication, adaptability, collaboration, time/resource management, organisational skills, technology use, information use and personality behaviours.
- SME is a small and medium-sized enterprise. There are three different categories: medium-sized, small, and micro-businesses. Over 90 percent of all business in Myanmar is classified as SME that may be handicraft businesses, production of commercial goods, and service industries. The government recognises them as the main drivers for country's national economic development.
- Career counselling is an essential factor for finding the real potential and guiding students to choose a right career path as per their interest and stream of academics.
- Career counselling is a highly effective way in analysing the strengths, weaknesses, interest of a child to select the best suited profession. The advice and counselling provided is based on personality, aptitude and interest.



Unit reflection

- Why is it important to be aware of local and regional careers? How can this understanding be applied to help guide middle school students with their career choices?
- Spend some time thinking about how you could develop your career counselling skills further. After studying this unit, would you be able to provide career advice for friends, family or members in your community?



Further reading

4.1.

Choosing the right career. (n.d.). Retrieved from <https://www.moneyinstructor.com/doc/rightcareer.asp>

Christodoulou, E. (2013, June 22). Top 20 skills you need to develop your career. Retrieved from http://mystarjob.com/articles/story.aspx?file=/2013/6/22/mystarjob_careerguide/13226186&sec=mystarjob_career

Lara, J., & Osborne, S. (2017). *Teaching pre-employment skills to 14-17-year-Olds: The autism works now! (R) method*. London, England: Jessica Kingsley.

Life and career skills. (n.d.). Retrieved from <http://yesiamhappy.me/21st-century-skills/life-career-skills/>

Marsh, C. (2012). *Essential skills for the real world of work: Things every student must know! (Careers curriculum)*. Peachtree City, GA: Gallopade International.

Martins, A. (2020, September 16). 50 best home based art & craft business ideas for 2020. Retrieved from <https://www.profitableventure.com/art-craft-business-ideas/>

McGraw-Hill, G. (2003). *Exploring careers (Formerly career skills) student workbook* (8th ed.). New York, NY: McGraw-Hill.

Regional careers. (n.d.). Retrieved from <https://www.education.vic.gov.au/about/careers/regional-careers/Pages/default.aspx>

What are career skills? (n.d.). Retrieved from <https://www.careertipstogo.com/career-skills-important/career-basics/>

4.2.

Hojdal, L. (2019). *Career counselling: Themes and methods*.

Kidd, J. (2006). *Understanding career counselling: Theory, research and practice*. Thousand Oaks, CA: SAGE Publications.

Missouri Department of Elementary & Secondary Education. (n.d.). School counselling curriculum. Retrieved from <https://dese.mo.gov/college-career-readiness/school-Counselling/curriculum>

Petsinger, K. (2016, March 14). 7 ways to help your child choose a career. Retrieved from <https://www.lifehack.org/376741/7-ways-help-your-child-choose-career>

Sanders, C., Welfare, L., & Culver, S. (n.d.). Career Counselling in middle schools: A study of school counselor self-efficacy. Retrieved from <https://tpcjournal.nbcc.org/career-Counselling-in-middle-schools-a-study-of-school-counselor-self-efficacy/>

Sheward, S., & Branch, R. (2012). *Motivational career counselling & coaching: Cognitive and behavioural approaches*. London, England: SAGE Publications.

University of Southern California (USC). (n.d.). How to become a school counselor in California. Retrieved from <https://rossieronline.usc.edu/masters/school-Counselling-online/how-to-become-a-school-counselor/>

Unit 5

Home Management Skills

This unit gives a brief introduction to many subjects that are collectively taught under the title “Home Management Skills”. These include cooking and nutrition, financial literacy, and sustainable living.

Expected learning outcomes

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

- Explain the features of a healthy and nutritious meal plan;
- Appreciate the local and traditional foods as cultural heritage;
- Examine how to improve nutrition with diverse local and traditional foods;
- Develop one-day meal plan with local and traditional foods by considering different ways to make local and traditional foods healthier;
- Illustrate the basics of financial literacy and financial management skills;
- Discuss the basics of managing budgeting, income, savings and expenses;
- Develop a monthly budget applying financial management skills;
- Explain what sustainable living means and how it is relevant to home management skills; and
- Discuss the implication of making recycled products for sustainable living in Myanmar.





Competencies gained

A5.1 Demonstrate understanding of the subject matter to teach the assigned subject/s for the specified grade level/s

A5.2 Demonstrate understanding of how to vary delivery of subject content to meet students' learning needs and the learning context

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

C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role models

C1.4 Demonstrate responsibility and accountability for the use of education resources

5.1. Meal Planning and Nutrition

This sub-unit is made up of a two-part lesson. Part one introduces student teachers to study and present about making traditional foods, which includes recipes and how to make traditional food healthier. Part two focuses on how to conserve traditional food as a method of preserving traditional cultural heritage. It also introduces the significance of becoming a food culture ambassador. Teaching young students about cooking and nutrition is not just about the process of preparing food, but also includes many valuable life skills.

5.1.1. Healthy eating plan with local and traditional foods

Period 1

Expected learning outcomes

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

- Explain the features of a healthy and nutritious meal plan;
- Appreciate the local and traditional foods as cultural heritage;
- Examine how to improve nutrition with diverse local and traditional foods; and
- Develop one-day meal plan with local and traditional foods by considering different ways to make local and traditional foods healthier.



Competencies gained

A5.1.1 Describe key concepts, skills, techniques and applications for the subjects covered in the grade levels taught

A5.2.1 Describe ways to contextualise learning activities for the age, language, ability and culture of students to develop understanding of subject related principles, ideas and concepts

C1.1.1 Comply with professional codes of conduct, rules and regulations in line with the five traditional responsibilities of the Myanmar teacher



Time: Two periods of 50 minutes



Learning strategies: Self-reflection, poster, group assignment, group discussion, research



Assessment approaches: Observation, Q&A, presentation, group assignment



Preparation needed: Student teachers should have completed the reading in Lesson 5.1.1. (Part 1) in advance; do some research on traditional dishes available in your local area (to supplement the knowledge student teachers will gain from the textbook); research about food ambassadors; do some research on food conservation events or strategies in Myanmar and around the world, for example food festivals (to support students research in Lesson 5.1.1. Part 2 learning activity 2)



Resources needed: Flip chart paper, A4 paper, markers, VLE (for research; optional for presentation)



Learning activity 1. Group work and presentation: Poster on traditional dishes (20 minutes)

1. Ask student teachers to reflect on a traditional food that is significant to their lives. Let them write it down in their textbooks.
2. In pairs, let student teachers discuss why that traditional food is significant for them.
3. Explain to student teachers that they will now create a mini poster showcasing their chosen dish. In their posters, make sure that they:
 - Write or draw the ingredients - identify the herbs, spices, and other ingredients used.
 - Write down why these herbs, spices and local ingredients are important to this dish.
 - Write down why it is significant for you.

- Compare your chosen dish to one of the dishes in the student textbook – write down one of the recipes that seems to use similar ingredients or methods.
4. When the posters are completed, you need to assign a number to each student teacher, ranging from 1-6. Ask student teachers to form groups with those sharing the same number.
 5. Have the student teachers present to their group members rotationally.



Assessment

Could student teachers construct a mini poster showcasing their chosen dishes and including ingredients of making traditional food that is significant to their life? Encourage student teachers to be creative and use engaging visuals. Give advice and feedback as necessary during the activity.



Possible student teachers' responses

Student teachers should be able to construct a mini poster on their chosen traditional food, focusing on the criteria you have mentioned. The traditional food chosen will vary between the student teachers.



Learning activity 2. Updating recipes (30 minutes)

Thinking about what student teachers have just learnt about healthy traditional dishes, now think about how you could improve the health benefits of another traditional recipe:

1. Place student teachers into small groups. Ask them to pick a recipe for a traditional dish.
2. As a group, student teachers should brainstorm about how to change the recipe to make it healthier. To guide them, student teachers can answer the following questions:
 - a. What ingredients would you remove, decrease, or add more of?
 - b. What ingredients would you substitute or leave out of the recipe?
 - c. What steps would you change in the recipe?

- d. How do we make food so that it is clean, hygienic, and healthy?
3. Instruct student teachers to write a recipe of a new version of a traditional recipe on A4 or flipchart paper.
 4. Student teachers should present their new recipes as a group, and show how it is a new, healthy version of a classic recipe.
 5. Once everyone has presented their recipes, consider the challenges of adjusting ingredients. First ask student teachers to reflect on the following questions and then discuss as a class:
 - a. What ingredients are more readily available than others?
 - b. What problems could this pose for people trying to make their meals healthier?
 6. Ask student teachers if they can think of some examples of solutions to the potential problems. You can also give some suggestions.



Assessment

Observe student teachers' discussion in their groups. You can assess how student teachers' could apply what they have learnt in the lesson to create a new, healthy twist on a classic recipe. Provide constructive feedback as necessary.



Possible student teachers' responses

Student teacher's recipes will vary according to the recipe the groups have chosen to update as well as their imagination and creativity. However, healthy ideas may be based on the information they have read in the textbooks, for example reducing the amount of oil, salt, sugar and flavour enhancers.

Period 2



Learning activity 1. Think-pair-share: Food conservation (10 minutes)

1. Ask student teachers to reflect on the following questions.
 - a. What is food conservation?
 - b. What kinds of things are conserved in “food conservation”?
 - c. Should we conserve traditional foods? Why?
2. Let student teachers discuss their ideas in pairs and then call on a few volunteers to share their discussion points with the class.
3. Summarise what conservation is.
 - Food is an important part of culture. Traditional cuisine is passed down from one generation to the next. It also operates as an expression of cultural identity. We also have to conserve traditional foods as national resources.



Assessment

Observe student teachers’ discussions in pairs. As it is an introduction to brainstorm the ideas and prior knowledge of student teachers, encourage sharing what they think and know. They might not necessarily know the correct answer yet. Build on your student teachers’ ideas to build their understanding of food conservation.



Possible student teachers’ responses

Student teachers should think or recall the ideas concerned with conservation.



Learning activity 2. Group discussion and presentation: How to become a food ambassador (35 minutes)

1. Check student teachers understanding of the reading “How to become a food ambassador” by conducting a short Q&A.

2. Place student teachers into groups of five or six. Ask the groups to discuss the following points that they have read:
 - What is a “food ambassador”?
 - How are traditional foods important for individuals, communities, and cultures?
 - What are some ways to preserve traditional foods as a way of preserving culture?
3. Ask a few groups to share their discussion points with the class.
4. In their groups, ask student teachers to research about the ways in which we can celebrate and preserve traditional foods.
5. Student teachers can conduct research about food festivals, celebrations, events and museums that celebrate and preserve traditional foods. They can be based in Myanmar, or student teachers can also find examples from all around the world.
6. You can advise student teachers of some resources they can use to research this information.
7. Student teachers should present the research they have found in the medium they wish – oral presentation, poster, PowerPoint presentation etc.
8. After each group’s presentation, other groups can ask questions.



Assessment

Observe student teachers’ group discussions by circulating around the class. Conduct a short Q&A to both check student teachers’ understanding of the reading as well as the discussion question.

Observe student teachers’ group work and research skills. Provide guidance and support as necessary. Observe student teachers’ presentations and ask them a few questions on their research.



Possible student teachers’ responses

Student teacher discussions should be based on the information in their textbooks. Student teachers’ group presentations should be based on their group research; therefore answers may vary.



Check student teachers' understanding (5 minutes)

1. Remind student teachers that the learning outcomes of these two lessons were to learn about local and traditional foods and how to make them healthier. They also developed their understanding of how conserving traditional food is a way to preserve traditional culture. Ask student teachers how will the activities they took part in these lesson help them in teaching middle school students.
2. Remind the student teachers of the TCSF competencies this lesson focused on.
3. Summarise or recap the main points of the lesson.
4. In preparation for the next lesson, ask student teachers to complete the reading in Lesson 5.2.1. in advance.



Expected student teachers’ responses for the review questions in TB

Question 1: What skills do students develop by teaching them how to cook? Please give examples and the reasons behind them.

Answer: *Here are some examples of student teachers’ responses:*

<i>Skill developed</i>	<i>Reasons</i>
- Comprehension skills	- <i>What things are needed, How to Prepare. ---</i>
- Inquisition and experimentation	- <i>How to do, making steps, ---</i>
- Maths skills	- <i>How many amounts needed, ---</i>
- Confidence of self-esteem	- <i>I did it, ----</i>
- Inclusivity	- <i>Every person can make, ---</i>
- Communication	- <i>Ask they want to know or explain, ---</i>
- Health and hygiene	- <i>How to make and what are notice to do for hygiene, how to make cleaning and maximum time a food retains, ----</i>
- Health and growth	
- Nutrition	
- Preparation and preservation of food to avoid disease	

Question 2: Why do we conserve traditional foods?

Answer: *Student teachers’ responses may include:*

We conserve traditional foods because...

- *Many traditional foods are nutrient-rich and support health and wellness.*
- *They can be simply prepared with basic ingredients from vegetables and fruits, to meat, poultry, and fish, to dairy, eggs, legumes, nuts, and seeds.*
- *It strengthens cultural capacity and identity, and well-being.*

Question 3: How can a student become a food ambassador?

Answer: *Student teachers’ responses may come from ‘How to become a food ambassador’ in their textbooks.*

5.2. Financial Literacy

Financial literacy³ is having the knowledge and skills to manage money wisely. One of the most common understandings of financial literacy is for people to have all the resources and tools needed to handle their personal finances while understanding the impact of their decisions on their financial stability. For instance, a financially literate person knows how an education can shape career prospects, which then impacts salary and, ultimately, quality of life.

5.2.1. Introduction to financial literacy

This lesson introduces how to teach the basics of financial literacy and the basics of managing budgeting, income, saving and expenses to middle school students. Teaching young students about financial literacy is not just about the knowledge of financial literacy but includes many valuable life skills.

Expected learning outcomes

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

- Illustrate the basics of financial literacy and financial management skills;
- Discuss the basics of managing budgeting, income, savings and expenses; and
- Develop a monthly budget applying financial management skills.



Competency gained

A5.1.1 Describe key concepts, skills, techniques and applications for the subjects covered in the grade levels taught

3 Rose, S. (2021). What are the benefits of financial literacy? Retrieved from <https://www.opploans.com/mooc/answers/what-are-the-benefits-of-being-financially-literate/>



Time: One period of 50 minutes



Learning strategies: Individual assignment, class discussion, group discussion, think-pair-share



Assessment approaches: Observation, presentation, Q&A, self-assessment, budgeting plan



Preparation needed: Student teachers should have completed the reading in Lesson 5.2.1. in advance of the lesson; you can provide a potential example of a monthly budgeting plan for a specific income amount to support teachers in Learning activity 3.



Resources needed: Whiteboard/blackboard or flip chart paper, A4 paper



Learning activity 1. Individual assignment for self-assessment: Are you financially literate? (10 minutes)

1. Introduce the student teachers to the main points of ‘An introduction to financial literacy’ in this unit.
2. Instruct student teachers to look at Table 5.2. ‘Are you financially literate?’ in their textbooks. Explain that this activity is an individual assignment that aims to help student teachers to self-assess their financial literacy.
3. Ask them to think through the statements in their textbooks and answer honestly.
4. Ask student teachers to look at their answers. How many ‘Yes’ answers did they get? How many ‘No’ answers did they get?”
5. Explain as follows:
 - Hopefully the student teachers were able to answer “yes” to all—or at least some—of the assessment questions. If so, congratulations! They are probably among the fortunate few who have achieved real financial literacy!
 - But in case student teachers answer “no” to some questions, don’t be discouraged! There are steps student teachers can take to get a better understanding of how money works.

- Open a short class discussion about ways student teachers could improve their financial literacy.



Assessment

Student teachers should conduct an honest self-assessment of their financial literacy and then think of ways that they could improve it if needed.



Possible student teachers' responses

Student teachers' responses may vary depending on their personal experience and prior knowledge.



Learning activity 2. Think-pair-share: Understand financial literacy (15 minutes)

1. Check that student teachers have read the 'Financial literacy' and 'Why financial literacy is important' in their textbook.
2. Ask student teachers to think about these questions:
 - a. What is financial literacy?
 - b. How is financial literacy important for you?
 - c. Why is it important for middle school students to understand about financial literacy?
3. Let student teachers discuss their ideas in pairs. Call on a few pairs to share their discussion points with the class. Invite other student teachers to share their ideas in response to other pairs' discussion points.
4. Record the answers on the board.
5. Summarise the lesson including following points:
 - Financial literacy is having the knowledge and skills to manage money wisely. The main benefit of financial literacy is that it empowers us to make smart financial decisions.
 - Financial literacy helps student teachers plan for the future, meet their financial goals, through times of financial hardship, get the most out of their income, go from 'surviving' to 'thriving', can improve many areas

of life — relationships, careers, hobbies, home life, and provides life skills for young people to use as adults .

- Financial literacy is important for middle school students as the legal working age in Myanmar is 14, so student teachers may teach middle school students that have experience working. Also, if middle school students can develop their financial literacy they can also support their family with this knowledge and understanding.



Assessment

Observe student teachers' discussions in pairs. Provide feedback and further examples of why financial literacy is important for everyone, including both student teachers and middle school students.



Possible student teachers' responses

Student teachers should be able to give their thoughts on learning financial literacy.



Learning activity 3. Group discussion and individual assignment: Financial management (20 minutes)

1. Ask student teachers to reflect on the following, individually:
 - a. Did you receive pocket money from your parents or family when you were younger?
 - b. Was it a regular or an irregular occurrence? What was the reasoning behind it?
 - c. Did your parents have any expectations about how you would use this money?
2. Place student teachers into small groups of five or six. In their groups, ask student teachers to discuss these questions:
 - a. If you received pocket money, did it teach you how to manage money? How?
 - b. Did you try and save your pocket money to buy larger purchases?

- c. What about students today, is it more common for them to receive pocket money?
 - d. How can we teach middle school students about financial responsibility through their pocket money?
 - e. If middle school students do not receive pocket money, how can we teach them about managing money?
3. Ask each group to present their discussion points for one of the questions.
 4. Now, explain to student teachers that they will have the opportunity to write their own monthly budget plan.
 5. First, in pairs, let student teachers reflect on these questions:
 - a. What different things do I spend my money on?
 - b. Do I want to save money? Should I put money aside for emergencies?
 - c. What categories of spending do I need to include?
 - d. What is my income/allowance?
 - e. How can I ensure that my income/allowance is sufficient for my expenses?
 6. Show student teachers an example of a budget plan that you have prepared and explain about the different categories. An example layout is included below:

Weekly income/ allowance	Needs	Wants	Savings	Emergency expenses

7. Ask student teachers to work individually on writing a monthly budget plan for themselves. Provide A4 paper for this activity. This can be completed as a homework assignment if there is not enough time.

8. Student teachers should think about their monthly income/allowance and what they would like to spend this money on (“needs” and “wants”). Can student teachers save some of their weekly income/ allowance? Can their weekly income/allowance support all of their “needs” and “wants”? If not, suggest student teachers to reduce the number of “wants”. Explain to student teachers that a clear budget plan can give great support in personal financial management. If we spend more than what we receive, we can easily fall into debt, which can be challenging to get out of.
9. Student teachers should write in detail about what they will spend in each of the columns. They also can add spending categories as they feel is necessary for their individual situation, for example: ‘family’, ‘donation’, ‘holiday’.
10. Remind student teachers that their weekly income/allowance cannot be less than the combined cost of their needs, wants, savings and emergency expenses.



Assessment

Observe student teachers’ engagement in the group discussions. Provide support if required on student teachers’ weekly budgeting assignment. This assignment can be personal, and some student teachers may not be comfortable to share this information with others. Encourage student teachers to understand the importance of financial management and the benefits of having a weekly budget.



Possible student teachers’ responses

Student teacher discussions will vary and will depend on their own personal experiences. However, all student teachers should understand the importance of financial literacy and how managing pocket money can introduce financial management to middle school students.

After reading about financial management in their textbooks, student teachers should be able to write a weekly budget plan which details their income/allowance and expenses. Student teachers can write their budget in the layout they desire. For example, there could be 5 columns: total income/allowance; “needs” expenses; “wants” expenses; money for savings; emergency expenses. The combined costs of the 4 columns on the right should equal or be less than their weekly income/allowance.

Weekly income/ allowance	Needs	Wants	Savings	Emergency expenses



Check student teachers' understanding (5 minutes)

1. Remind student teachers that the learning outcomes of this lesson was to develop financial literacy and to write a personal monthly budgeting plan. Ask student teachers about how the activities they completed will support them in teaching middle school students' financial management.
2. Remind the student teachers of the TCSF competencies this lesson focused on.
3. Summarise or recap the main points of the lesson.
4. In preparation for the next lesson, ask student teachers to complete the reading in Lesson 5.3.1. in advance.



Expected student teachers' responses for the review questions in TB

Question 1: What is financial literacy?

Answer: Financial literacy is having the knowledge and skills to manage money wisely. The main benefit of financial literacy is that it empowers us to make smart financial decisions. It provides the knowledge and skills we need to manage money effectively—budgeting, saving, spending, borrowing (credit, debt and loans), and investing. This means that we are better equipped to reach our financial goals and achieve financial stability.

Question 2: What is the most important part of financial literacy? Explain.

Answer: Student teachers might think that 'budgeting' is the most important because it concerns creating a budget and sticking to it. We can use it to commit to a savings goal and balance income and expenses, and allocate income to meet financial obligations and work towards future goals. If our financial circumstances change, our budgets will change too.

To create a budget, assign income categories. Create a category for savings and put a certain amount of income towards that each month. With any money left over, give yourself funds for "want" purchases.

Question 3: How will you teach students to make the best use of pocket money?

Answer: This answer may be based on 'How to manage pocket money' in the Student Textbook.

Question 4: How can you adjust how and what you teach about financial literacy, depending on local circumstances? Please give a few examples.

Answer: This will depend on the local context of the student teachers. It will depend on the financial stability in the local communities and whether families face debt issues.

5.3. Sustainable Living

‘**Sustainable Living**’ is a lifestyle that attempts to reduce the use of the Earth’s natural resources, at an individual or societal level.

Toxic wastes and environmental pollution are reduced by ‘**recycling**,’ which can provide benefits to human health. Recycling also conserves natural resources, protects natural environments, and encourages genetic diversity, all of which enhance the long run **sustainability** of the environment.

In this sub-unit, you will introduce student teachers to teaching ‘Sustainable Living’ to middle school students. It includes information about how to make recycled products (products from recycled materials) in Myanmar. Teaching young students about ‘Sustainable Living’ is not just about how to make recycled products, but also involves an understanding of why recycled products benefits everyone in all regions.

5.3.1. Recycled products for sustainable living

Expected learning outcomes

By the end of the lesson, student teachers will be able to:

- Explain what sustainable living means and how it is relevant to home management skills; and
- Discuss the implication of making recycled products for sustainable living in Myanmar.





Competencies gained

A5.1.1 Describe key concepts, skills, techniques and applications for the subjects covered in the grade levels taught

B1.2.2 Use knowledge of different literacy teaching strategies to support development of subject matter literacy

C1.4.1 Use school supplies and resources appropriately



Time: One period of 50 minutes



Learning strategies: KWL chart, group discussion, group work, research, VLE



Assessment approaches: Observation, self-assessment, Q&A, presentation, group project



Preparation needed: Student teachers should have completed the reading in Lesson 5.3.1. in advance; if VLE materials or internet connection are not available, provide pre-downloaded research materials on recycled products for each group.



Resources needed: Research materials (YouTube videos, newspaper articles, documentaries, infographics) on recycled products and procedures



Learning activity 1. KWL chart: Recycling (5 minutes)

1. Ask student teachers to reflect on these questions:
 - a. What is recycling?
 - b. Have you ever seen a product made of recycled materials? What are they?
 - c. How did you know that they were recycled?
2. Let student teacher fill in the 'K' and 'W' columns on the KWL chart about recycling in their textbooks.



Assessment

Student teachers will self-assess their prior knowledge and understanding about recycling through this activity.



Possible student teachers' responses

Student teachers' responses will vary depending on their prior knowledge.



Learning activity 2. Group project: Recycled products (15 minutes)

1. Explain to student teachers that there are many videos online, such as on YouTube, which demonstrate simple and easy products to make from recycled materials.
2. Place student teachers into small groups of five or six.
3. In groups, ask student teachers to research online to find some videos that explain about making products from recycled materials. They should note down their findings individually, in their textbooks.
4. Ask student teachers to think about these questions during their research. Let them discuss with their group members:
 - a. Which of these products can be made with materials easily accessible in Myanmar?
 - b. Do we have the necessary equipment to create the product from required materials?
 - c. How useful is the product?
5. After watching the videos, each group should choose one product that they would like to try to make. Advise them to think about what materials they will need, and how they might make it.
6. Instruct the groups to write and/or draw (on flipchart paper) the steps involved in recycling the materials to make the finished product.
7. Ask each group to present their recycling method to the rest of the class.



Assessment

Observe student teachers' engagement in the group project. Provide guidance and support to student teachers during their research. Assess student teachers' application of their knowledge and research to write/draw the recycling method of their chosen product.



Possible student teachers' responses

Support student teachers as necessary. Student teachers' responses will vary depending on their chosen recycled product. If VLE materials or internet connection are not available, provide pre-downloaded research materials on recycled products for each group.



Learning activity 3. Group discussion: Implications of recycled products on sustainable living (25 minutes)

1. Place students into small groups and ask them to discuss the following questions:
 - a. Why should we make products out of recycled materials?
 - b. What are the implications of recycled products for sustainable living in Myanmar?
 - c. How would you explain recycling and its importance to a middle school student?
 - d. Why is it important for the middle school students understand about recycling and sustainable living?
2. Ask the student teachers to take notes of the group discussion.
3. Gather the class as a whole and ask each group to share their thoughts.
4. After one group's presentation, ask the other groups to add their ideas. Lead the class discussion.
5. At the end of the activity, ask student teachers to go and fill in the 'L' column in the KWL chart in Learning activity 1. The aim is for student teachers to note down and be aware of the new things that they have learnt about recycling during this lesson.



Assessment

Observe student teachers' discussions in groups. Provide feedback as necessary.

Student teachers will conduct self-assessment in the KWL chart to see what new things they have learnt about recycling in comparison with their prior knowledge.



Possible student teachers' responses

Student teacher discussions may be based on what they have read in the textbook as well as the knowledge they have gained from their research in Learning activity 2.



Check student teachers' understanding (5 minutes)

1. Remind student teachers that the learning outcomes of this lesson was to develop their understanding of recycled products, including the procedure involved as well as its importance for sustainable living. How can student teachers pass on this information to middle school students? In what ways can student teachers engage and motivate middle school students to learn about recycling?
2. Remind the student teachers of the TCSF competencies this lesson focused on.
3. Summarise or recap the main points of the lesson.
4. In preparation for the next lesson, ask student teachers to complete the reading in Lesson 6.1.1 in advance.



Expected student teachers' responses for the review questions in TB

Question 1: What do we have to keep in mind when we recycle?

Answer:

1. *We can recycle bottles, cans, and paper*
2. *Keep recycling items clean*
3. *Don't mix plastic bags in with the rest of your recycled items*

Question 2: Why is it important to learn about making recycled products?

Answer: *Student teachers' responses may be based on 'Recycling is important' from their textbooks.*

Question 3: What will you do to achieve a waste-free lifestyle in your community?

Answer: *Student teachers' responses may be based on 'Let's start a waste-free life style' from their textbooks.*

Unit Summary



Key messages

- Traditional foods are an important aspect of our cultures. Food ingredients and recipes are transmitted from one generation to the next and become part of our collective memory and understanding of our culture.
- You can cook healthier forms of your favourite recipes by reducing fat, sugar, salt, calories and increasing fiber. Consider your own health and hygiene by being aware of washing hands, food preservation, nutrition and avoidance of disease.
- Financial literacy is having the knowledge and skills to manage money wisely. The main benefit of financial literacy is that it empowers us to make smart financial decisions. It provides the knowledge and skills we need to manage money effectively—budgeting, saving, spending, borrowing (credit, debt and loans), and investing. This means that we are better equipped to reach our financial goals and achieve financial stability.
- Pocket money can begin as soon as children start developing number skills and gaining financial literacy from an early age. It is never too soon to teach children how to handle and manage money. Keep in mind that pocket money is an excellent way for them to learn financial literacy.
- ‘Sustainable Living’ is a lifestyle that attempts to reduce the use of the Earth’s natural resources, at an individual or societal level.
- Recycling conserves natural resources and protects natural environments.
- Recycling reduces the need for raw materials; it also uses less energy, therefore preserving natural resources such as timber, water and minerals. It reduces financial expenditure in the economy for the future.



Unit reflection

Student teachers should reflect on these questions after completing the unit:

- Why do you think that is it important to learn about preserving and making traditional foods?
- Spend some time thinking about how you could increase middle school students' interests in preserving and making traditional foods.
- The unit introduced financial literacy, including the basics of financial literacy and the basics of managing budgeting, income, saving and expenses. How is financial literacy important in your life?
- How important is financial literacy for middle school students? What are the impacts of learning financial literacy at a young age?
- Reducing, reusing and recycling is an important part of sustainable living. How can you learn more about recycled products?
- How can you raise awareness and encourage sustainable living in your communities?



Further reading

5.1.

Carlyle, C. (2014). How to make healthy food taste great. Retrieved from <https://christinacarlyle.com/how-to-make-healthy-food-taste-great/>

Gallardo, J. (2015). *Delicious Myanmar: Discover Myanmar through its people and food*. JETLAUNCH.

Hernandez, A. (2018). 5 main types of healthy food. Retrieved from <https://healthyeating.sfgate.com/5-main-types-healthy-food-6343.html>

Kuzemchak, S. (2018). *101 healthiest foods for kids: Eat the best, feel the greatest - healthy foods for kids, and recipes too!* Gloucester, MA: Fair Winds Press.

Maung Hla Win. (2013). *The 15 secret family treasured traditional Burmese recipes: Authentic cooking from the Asian Pacific region*. [Kindle version]. Retrieved from amazon.com

Valente, L. (2019). 10 secrets to cooking healthier. Retrieved from <https://www.eatingwell.com/article/15891/10-secrets-to-cooking-healthier/>

5.2.

Cagan, M., & Lariviere, E. (2018). *The infographic guide to personal finance: A visual reference for everything you need to know*. Holbrook, NY: Adams Media Corporation.

How to manage your pocket-money? (2008, April 16). Retrieved from <https://www.poliklinika-djeca.hr/english/for-kids-and-youth/free-time/how-to-manage-your-pocket-money/>

Mulcaire, S. (2017). *The 21st century student's guide to financial literacy - Getting personal (student workbook)*. Newport Beach, CA: C21 Publishing.

Pocket money for kids: The advantages and disadvantages. (2012, April 30). <https://www.oneworldnews.com/pocket-money-for-kids-the-advantages-and-disadvantages/>

Ramsey Solutions. (n.d.). What do you need to know about financial literacy? Retrieved from <https://www.ramseysolutions.com/financial-literacy/what-is-financial-literacy>

Rose, S. (2021, March 18). Financial Literacy 101. Financial Literacy. Retrieved from <https://www.opploans.com/mooc/answers/101-financial-literacy/>

Smith, A. (2016). *Financial literacy for millennials: A practical guide to managing your financial life for teens, college students, and young adults*. Westport, CT: Praeger.

5.3.

5-Minute Crafts TEENS. (2019, February 15). *22 clever ways to recycle old plastic bottles* [Video file]. Retrieved from <https://www.youtube.com/watch?v=j-6GLn4RaFQ>

Bordessa, K. (2020). *Attainable sustainable: The lost art of self-reliant living*. Washington, DC: National Geographic Society.

Gibbons, G. (1996) *Recycle!: A handbook for kids*. New York, NY: Little, Brown & Company.

Nelson, R. (2014). *How I reduce, reuse, and recycle (First step nonfiction: Responsibility in action)*. Minneapolis, MN: Lerner Publishing Group.

Recycling facts and figures. (2010). Retrieved from <http://www.recycling-guide.org.uk/facts.html>

Recycling Simplified: Recycle smarter with Republic Services. (n.d.). Retrieved from <https://recyclingsimplified.com/>

Tips: Top ten ways to recycle. (2007). Retrieved from <https://eponline.com/Articles/2007/11/12/Tips-Top-Ten-Ways-to-Recycle.aspx>

Weinberg, A. S., Pellow, D. N., & Schnaiberg, A. (2000). *Urban recycling and the search for sustainable community development*. Princeton, NJ: Princeton University Press.

Unit 6

Assessment

This final unit discusses the assessment methods for Local Curriculum. Both formative and summative assessments for middle school levels local curriculum are going to be studied for Local Curriculum. Rubric Assessment, a new initiative in Myanmar assessment system, is also discussed for Local Curriculum middle school levels.

Expected learning outcomes

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

- Identify formative assessment approaches for the Middle School Local Curriculum;
- Identify summative assessment approaches for the Middle School Local Curriculum; and
- Develop success criteria for assessing middle school students' learning process.



Competency gained

B2.1 Demonstrate capacity to monitor and assess student learning

6.1. Assessment of Local Curriculum

This sub-unit will help student teachers to understand assessment of the Local Curriculum subject. Student teachers will study the very definition of formative and summative assessment and the differences between them. They will also learn how to develop success criteria for assessing middle school students' learning process.

6.1.1. Assessment approaches for Local Curriculum

Expected learning outcomes

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

- Identify formative assessment approaches for the Middle School Local Curriculum;
- Identify summative assessment approaches for the Middle School Local Curriculum; and
- Develop success criteria for assessing middle school students' learning process.



Competencies gained

A4.1.1 Describe key concepts, content, learning objectives and outcomes of the lower secondary curriculum for the subjects and grade level/s taught

A4.1.3 Describe the assessment principles underpinning the Lower Secondary curriculum



Time: One period of 50 minutes



Learning strategies: Flipped classroom, group work, group discussion, brainstorming, presentation, VLE (website; infographic), group assignment



Assessment approaches: Observation, Q&A, group assignment, presentation



Preparation needed: Student teachers should complete the reading in Lesson 6.1.1. prior to the lesson; you (teacher educator) should review assessment approaches used in middle school Local Curriculum.



Resources needed: Marker pen, poster paper, access to internet, Local Curriculum Middle School Textbooks and Teacher Guides (enough to distribute in groups)



Learning activity 1. Web-based task: Differences of the formative and summative assessment (10 minutes)

1. Ask student teachers to visit the website:

<https://www.bookwidgets.com/blog/2017/04/the-differences-between-formative-and-summative-assessment-infographic>

2. Ask student teachers to study the infographic. There they can find the main differences between formative and summative assessments.
3. Place student teachers into small groups and ask them to discuss these questions:
 - a. Explain formative and summative assessment, and their differences.
 - b. How can they apply both types of assessments as a teaching tools in the middle levels?
 - c. Discuss new assessment systems for middle levels in Myanmar's education reform and new curriculum.
4. Ask for some groups to share their discussion points.



Assessment

The introductory activity is designed to help the student teachers to look into the differences between the formative and summative assessments in detail. By now they will have understood the definitions, but this is another step to learn how the two different assessment types are applied for middle levels. Observe their discussions and conduct a short Q&A to assess their understanding.



Possible student teachers' responses

The groups should be able to define the two major types of assessments: formative and summative and should be able to tell the differences as well. You can support them in understanding how they can apply these assessments as a teaching tool for middle school students. Unlike in the past, assessment is now part and parcel of teaching and learning, and as such, Myanmar new assessment favours formative assessment for the primary and middle school levels.



Learning activity 2. Group work: Assessment for Local Curriculum (25 Minutes)

1. Explain to student teachers that they have studied assessment extensively in Year 1, and now it is time to review and apply the theories into Local Curriculum assessment for middle school.
2. Ask student teachers to work in pairs and write an answer or a definition for the different assessment-related questions in the table in their textbooks. They should make sure to write a definition that makes sense for them, in their own words.
3. Assign each pair one of the seven different assessment-related questions.
4. In their pairs, student teachers should create a poster that demonstrates the answers of their allocated question using words and images.
5. Their posters should include:
 - a. A definition of the assessment type
 - b. Examples of that particular type of assessment. These examples can be used from the Middle School Local Curriculum syllabus.

6. Ask student teachers to stick their posters around the classroom and conduct a gallery walk.
7. Ask one pair to present their posters for each question.
8. Conduct a Q&A to assess student teachers' understanding of the different areas of assessment.
9. If time allows, you can re-visit the topics for Local Curriculum at middle school level. You can distribute the textbooks/ teacher guides and asks student teachers to think of suitable assessment strategies for some topics or chapters in the curriculum. Ask follow up questions, such as:
 - a. Why will you use the assessment methods you choose?
 - b. How can the learning be supported by the different assessment strategies for Local Curriculum?



Assessment

Observe student teachers' posters and conduct a Q&A to check their understanding.



Possible student teachers' responses

Assessment is a key component of learning because it helps students learn. When students are able to see how they are doing in a class, they are able to determine whether or not they understand course material. Assessment can also help motivate students. Just as assessment helps students, assessment helps teachers.

Student teachers' responses should be based on the information in the textbook as well as their prior knowledge from Year 1, Local Curriculum and other subjects.



Learning activity 3. Group work: Rubric assessment (15 Minutes)

1. Divide the student teachers into small groups.
2. Assign each group one of the elements of effective communication (for an example lesson of social and career skills: Middle School Local Curriculum). Do not assign 'clarity' as it has been used as an example in the Student Teacher Textbook.

- Clarity (provided as an example)
 - Accuracy
 - Balancing of talking and listening
 - Body language and tone
 - Use of other aids
3. Each group should develop a 4-scale rubric to evaluate the element of effective communication that they have been assigned:
 - 4 - Exemplar
 - 3 - Proficient
 - 2 - Approaching proficiency
 - 1 - Needs more work
 4. They will need to write a description of what the individual needs to do to earn the score (4, 3, 2, or 1). A sample is provided below for the element ‘Clarity’. Each person in the group should make their own copy of the rubric in their textbooks.
 5. You can call on a few groups to present their rubrics for each success criteria.
 6. If student teachers cannot finish their assessment rubric in the time allocated, set the task as a homework assignment.

Success criteria	Performance grading			
Clarity	4 – Example	3 – Proficient	2 – Approaching proficiency	1- Needs more work
	The presenter clearly communicates the main message and avoids distracting details. The message is well-paced and all listeners can always hear clearly. The language used is very appropriate for the audience.	The presenter communicates the main message and mostly avoids distracting details. The message is fairly well-paced and listeners can hear well enough to understand. The language used is appropriate for the audience.	The presenter mostly communicates the main message with some distracting details. The pace of the message varies; listeners can usually hear well enough to understand. The language used is mostly appropriate for the audience.	The presenter does not make the main message clear. The message is either delivered too fast or too slow. It is difficult to hear. The language used is not always appropriate for the audience.



Facilitator's note

In education terminology, rubric means “a scoring guide used to evaluate the quality of students’ constructed responses”. Put simply, it is a set of criteria for grading assignments. Rubrics usually contain evaluative criteria, quality definitions for those criteria at particular levels of achievement, and a scoring strategy. They are often presented in table format and can be used by teachers when marking, and by students when planning their work. Rubrics, when used with formative assessment purposes, have shown to have a positive impact on students’ learning.

A scoring rubric is an attempt to communicate expectations of quality around a task. In many cases, scoring rubrics are used to delineate consistent criteria for grading. Because the criteria are public, a scoring rubric allows teachers and students alike to evaluate criteria, which can be complex and subjective. A scoring rubric can also provide a basis for self-evaluation, reflection, and peer review. It is aimed at accurate and fair assessment, fostering understanding, and indicating a way to proceed with subsequent learning/teaching. This integration of performance and feedback is called ongoing assessment or formative assessment.



Assessment

Observe student teachers’ group work by circulating around the classroom. Check their assessment rubrics and provide feedback.



Possible student teachers’ responses

Student teachers should base their assessment rubrics on the information in the textbook and the example provided. Support the student teachers and provide guidance and feedback.



Expected student teachers' responses for the review questions in TB

Question 1: What is formative assessment?

Answer: Formative assessment is used to monitor student's learning to provide ongoing feedback that can be used by instructors or teachers to improve their teaching and by students to improve their learning.

Question 2: What is summative assessment?

Answer: Summative assessment, however, is used to evaluate student's learning at the end of an instructional unit by comparing it against some standard or benchmark.

Question 3: What are the differences between formative and summative assessment?

Answer: Formative assessments are various kinds of assessments that evaluate how someone is learning material throughout a course. Summative assessments are usually quizzes and tests that evaluate how much someone has learnt throughout a course.

Answers may also be based on the infographic from Learning activity 1:

<https://www.bookwidgets.com/blog/2017/04/the-differences-between-formative-and-summative-assessment-infographic>

Question 4: Give examples of formative assessment for Local Curriculum in middle school classrooms.

Answer: Answers may vary but should be based on the understanding of learning and assessment in Local Curriculum in middle school classrooms.

Question 5: What is your current view of rubrics? Write down what you know about them and what experiences you have had using them. Save this reflection to compare with a similar reflection after you have read this book.

Answer: This is a more personal question and therefore can have several different answers. Ranging in the spectrum of student teachers' assessment of rubrics.

Question 6: How do you write a rubric for assessment in middle school?

Answer: Define the purpose of the assignment for which you are creating a rubric, define the criteria, decide what kind of rubric you will use, and make sure it adheres to the level that middle school students are at.

Question 7: What is an example of a rubric?

Answer: Varied responses. Could be rubrics for art assignments or a local curriculum flip chart.

Question 8: Why are rubrics important for school education assessment?

Answer: Rubrics are important because they clarify for students the qualities their work should be. Rubrics help teachers teach, and they help coordinate instruction and assessment to help students learn.

Unit Summary



Key messages

The purpose of this unit was to help the student teachers develop an understanding on assessment that they could justify to the different stakeholders of assessment, and to help them develop basic terminologies and models related to assessment. Starting with the definition of assessment, the unit drew on the definitions of formative and summative assessment, and their difference. Finally, the sub-unit discussed the examples of both formative and summative assessment. Formative assessments are various kinds of assessments that evaluate how someone is learning material throughout a course. Summative assessments are usually quizzes and tests that evaluate how much someone has learnt throughout a course.

Rubric-based assessment provides the teacher and students with a tool for conducting a meaningful, criterion-referenced assessment. A rubric is a tool to help a teacher compare the achievement of their students to the desired outcomes for the instructional unit.

The main purpose of a rubric is its ability to assess student's performance or work. Rubrics can be tailored to each assignment or to the course to better assess the learning objectives.

Rubrics are important because they clarify for students the qualities their work should have. For this reason, rubrics help teachers teach, they help coordinate instruction and assessment, and they help students learn.



Unit reflection

The purpose of this unit was to help student teachers to develop an understanding on assessment, difference between formative and summative assessment, and rubric assessment. Student teachers should reflect on their confidence to conduct the following:

1. Give examples of formative assessment.
2. Identify the difference in a formative and summative assessment.
3. Compare and contrast formative and summative assessment.
4. Understand the meaning and practice of summative assessment.
5. Describe the importance of both formative and summative assessment in middle school.
6. Understand the rubric assessment.
7. Explain how the rubric assessment can improve students' learning.
8. Create a matrix or grid of rubric tool, and criteria sheet, grading schemes or scoring guides for middle school topics.



Further reading

- Association for Supervision and Curriculum Development (ASCD). (n.d.). What are rubrics and why are they important? Retrieved from <http://www.ascd.org/publications/books/112001/chapters/What-Are-Rubrics-and-Why-Are-They-Important%C2%A2.aspx>
- Garrison, C., & Ehringhaus, M. (n.d.). Formative and summative assessments in the classroom. Retrieved from <https://www.amle.org/formative-and-summative-assessments-in-the-classroom/>
- Latham, G., Blaise, M., Dole, S., Faulkner, J., Lang, J., & Malone, K. (2006). *Learning to teach: New times, new practices*. South Melbourne, VIC, Australia: OUP Australia and New Zealand.
- Ministry of Education. (2019). *National Assessment Policy for Basic Education (NAP)*. Republic of the Union of Myanmar. Retrieved from [https://neqmap.bangkok.unesco.org/resource/national-assessment-policy-for-basic-education-nap](https://neqmap.bangkok.unesco.org/resource/national-assessment-policy-for-basic-education-<u>nap</u>)
- Pollard, A., Collins, J., Maddock, M., Simco, N., Swaffield, S., Warin, J., & Warwick, P. (2005). *Reflective teaching: evidence-informed professional practice*. (2nd ed.) London, England: Continuum.
- Readman, K., & Allen, W. (2013). *Practical planning and assessment*. South Melbourne, VIC, Australia: OUP Australia and New Zealand.
- The differences between formative and summative assessment - Infographic. (2017, April 14). Retrieved from <https://www.bookwidgets.com/blog/2017/04/the-differences-between-formative-and-summative-assessment-infographic>
- Watkins, C., Carnell, E., & Lodge, C. (2007). *Effective learning in classrooms*. London, England: SAGE Publications.

Glossary

Terms	Elaborations
Ambassador	An individual who is a representative or promoter of a specific activity
Assessment	In education, the term assessment refers to the wide variety of methods or tools that educators use to evaluate, measure, and document the academic readiness, learning progress, skill acquisition, or educational needs of students.
Assessment of learning	Assessment of learning is the snapshot in time that lets the teacher, students and their parents know how well each student has completed the learning tasks and activities. It provides information about student achievement.
Bacteria	Microscopic organisms that are not visible to the naked eye. They are unicellular microorganisms which have cells walls but lack organelles and organised nucleus.
Budget	An estimate of income and expenditure for a set period of time.
Career	An occupation undertaken for a significant period of a person's life and with opportunities for progress
Career skills	Career Skills are the abilities you have to that enable you to do your job and to manage your career. These are over and above the skills and technical knowledge you need to perform the tasks that are part of your job. They are the sum of your knowledge, skills and experience.
Commercial Goods	Good or service (but not real estate) sold or traded in the normal course of a firm's business; or customarily used by the general public or offered to it for lease, license or sale.
Communication skills	The ability to convey or share ideas and feelings effectively.
Concept map	Concept maps, or mind maps, can be used to visually show the relationships between concepts, or ideas. They are useful for brainstorming and also organising information.
Conserve	To protect something, especially or environmental or cultural importance, from harm or destruction.
Counselling	The process of assisting and guiding individuals, especially by a trained person on a professional basis, to resolve personal, social, professional or psychological problems.
Critical thinking skills	Critical thinking skills allow you to analyse a situation and find workable solutions. Here are several tips to identify and showcase your critical thinking skills.
Curiosity	A strong desire to know or learn something
Curriculum	The term curriculum refers to the lessons and academic content taught in a school or in a specific course or program.
Diseases	A harmful deviation from the normal functional state of an organism, generally associated with certain signs and symptoms and differing in nature from physical injury.
Effective Feedback	Information provided to individual's on their performance of a task which can be used as a basis of improvement.
Employable Skills	The transferable skills needed by an individual to make them a desired candidate for employment.
Employment	The state of having work, an occupation, profession or job.

Terms	Elaborations
Evaluation	Evaluation is a systematic determination of a subject’s merit, worth and significance, using criteria governed by a set of standards.
Expenses	The cost incurred in or required for something.
Feedback	Information about reactions to a product, a person’s performance of a task, etc. which is used as a basis for improvement.
Festival	A Festival is an event ordinarily celebrated by a community and centering on some characteristic aspect of that community and its religious or cultures.
Financial Literacy	The ability to understand and use various financial skills, including personal financial management, budgeting, and investing.
Food preservation	The term food preservation refers to any one of a number of techniques used to prevent food from spoiling. It includes methods such as canning, pickling, drying and freeze-drying, irradiation, pasteurisation, smoking, and the addition of chemical additives.
Formative assessment	Formative assessment refers to a wide variety of methods that teachers use to conduct in-process evaluations of student comprehension, learning needs, and academic progress during a lesson, unit, or course.
Fungus	Any group of spore-producing organisms feeding on organic matter, including moulds, mushrooms and toadstools.
Grafting	The process of inserting a shoot or twig as a graft.
Handicraft	Activity involving the making of decorative domestic or other objects by hand.
Healthy eating pyramid (Food pyramid)	The healthy eating pyramid is a simple visual guide to the types and proportion of foods that we should eat every day for good health. It contains the five core food groups, plus healthy fats, according to how much they contribute to a balanced diet
Horticultural Crops	Crops that fall under the category of garden crops in plant agriculture. Generally, fruits, vegetables and ornamental plants.
Icon	A person or thing regarded as a representative symbol or as worthy of veneration
Income	Money that an individual, business or group receives in exchange for providing labor, producing a good or service, or through investing capital.
Interpersonal skills	The ability to communicate or interact well with other people.
Landscape gardening	The art and practice of laying out grounds in a way which is ornamental or which imitates natural scenery.
Limes	The process of treating soil or water with lime to reduce acidity and improve fertility or oxygen levels.
Manures	Animal dung used for fertilising processes.
Middle school	Middle school in Myanmar schooling system, from Standard six to nine for four years.
Nematodes	A worm of the large phylum Nematoda, such as a roundworm or threadworm.
Nutrition	Nutrition is the science that interprets the interaction of nutrients and other substances in food in relation to maintenance, growth, reproduction, health and disease of an organism. It includes food intake, absorption, assimilation, biosynthesis, catabolism and excretion.
Organisational skills	Developing good Organisational skills, defined as the ability to efficiently manage your time, workload and resources, may help you improve your productivity and lower your stress level. ... Organisational skills are skills you use to organise your workload, manage time and resources, and schedule and prioritise projects.

Terms	Elaborations
Path	The course or direction in which a person or thing is moving for a specified result
Personal development	Personal development covers activities that improve awareness and identity, develop talents and potential, build human capital and facilitate employability, enhance the quality of life and contribute to the realisation of dreams and aspirations.
Preserving	The process of treating something, typically food, to prevent its decomposition.
Pruning	The process of trimming a tree, shrub or bush by cutting away dead or overgrown branches or stems to encourage growth.
Recipe	A set of instructions in order to prepare a particular dish, including a list of required ingredients.
Recycling	Recycling is the process of converting waste materials into new materials and objects. It is an alternative to “conventional” waste disposal that can save material and help lower greenhouse gas emissions.
Reuse	The action of using something again.
Rubric assessment	A rubric for assessment, usually in the form of a matrix or grid, is a tool used to interpret and grade students’ work against criteria and standards. Rubrics are sometimes called “criteria sheets”, “grading schemes”, or “scoring guides”. Rubrics can be designed for any content domain.
Small-to-medium enterprises (SME)	SME is a small and medium-sized enterprise. SME is a business with fewer than 250 employees, and a turnover of less than €50 million. Within this umbrella there are three different categories: medium-sized, small, and micro-businesses. SMEs are non-subsidiary, independent firms which employ fewer than a given number of employees
Summative assessment	Summative assessment, summative evaluation, or assessment of learning refers to the assessment of participants where the focus is on the outcome of a program. This contrasts with formative assessment, which summarises the participants’ development at a particular time.
Time management	“Time management” is the process of organising and planning how to divide your time between specific activities. Good time management enables you to work smarter – not harder – so that you get more done in less time, even when time is tight and pressures are high.
Test	A procedure intended to establish the quality or performance of something.
Traditional Foods	Foods that are passed on through generations of which retain cultural or historical significance.
Training	The action of teaching an individual a particular skill or type of behaviour.
Virus	An infectious agent of small size and simple composition that can only multiply in the living cells of animals, plants or bacteria.

Bibliography

5-Minute Crafts TEENS. (2019, February 15). *22 clever ways to recycle old plastic bottles* [Video file]. Retrieved from <https://www.youtube.com/watch?v=j-6GLn4RaFQ>

A simple list of what can and cannot be recycled. (n.d.). Retrieved from <https://www.ecoscraps.com/blogs/sustainable-living/76411652-a-simple-list-of-what-can-and-cannot-be-recycled>

Association for Supervision and Curriculum Development (ASCD). (n.d.). What are rubrics and why are they important? Retrieved from <http://www.ascd.org/publications/books/112001/chapters/What-Are-Rubrics-and-Why-Are-They-Important%C2%A2.aspx>

Avery, C. (2015, August 31). Grace Grapefruit from Kachin: Meet Mary San, food entrepreneur and innovator. Retrieved from <http://myanmarnaturally.com/grace-grapefruit-from-kachin-meet-mary-san-food-entrepreneur-innovator/>

Bacteria. (n.d.). In *Cambridge Dictionary online*. Retrieved from <https://dictionary.cambridge.org/dictionary/english/bacteria>

Benayoun, M. (n.d.) Lahpet thoke (fermented tea leaf salad). Retrieved from <https://www.196flavors.com/burma-lahpet-thoke-fermented-tea-leaf-salad/>

Bernhart, A. (2013). India's food festivals. Retrieved from <https://sustainablefoodtrust.org/articles/indigenous-food-festivals/>

Bordessa, K. (2020). *Attainable sustainable: The lost art of self-reliant living*. Washington, DC: National Geographic Society.

Brookhart, S. M., & Nitko, A. J. (2018). *Educational assessment of students* (8th ed.). Upper Saddle River, NJ: Pearson.

- Cagan, M., & Lariviere, E. (2018). *The infographic guide to personal finance: A visual reference for everything you need to know*. Holbrook, NY: Adams Media Corporation.
- Carlyle, C. (2014). How to make healthy food taste great. Retrieved from <https://christinacarlyle.com/how-to-make-healthy-food-taste-great/>
- Choosing the right career. (n.d.). Retrieved from <https://www.moneyinstructor.com/doc/rightcareer.asp>
- Christodoulou, E. (2013, June 22). Top 20 skills you need to develop your career. Retrieved from http://mystarjob.com/articles/story.aspx?file=/2013/6/22/mystarjob_careerguide/13226186&sec=mystarjob_career
- Cleeve, R. (2018, April 25). Seven ways to develop independent learners. Retrieved from <https://www.english.com/blog/seven-ways-to-develop-independent-learners/>
- Commercial goods. (n.d.). In *Law Insider*. Retrieved from <https://www.lawinsider.com/dictionary/commercial-goods>
- Day, J. (2020, May 27). What is an SME? Here's an SME definition. Retrieved from <https://www.simplybusiness.co.uk/knowledge/articles/2018/12/what-is-an-sme/>
- Dunant, B. (2019, November 17). Rekindling regional pride: The Dawei art space. Retrieved from <https://www.frontiermyanmar.net/en/rekindling-regional-pride-the-dawei-art-space/>
- EDSYS. (2018, February 12). 12 skills teachers require to be effective in teaching. Retrieved from <https://www.edsys.in/8-skills-teachers-require-effective-teaching/>
- Environmental Protection Agency (EPA). (n.d.). Recycling basics. Retrieved from <https://www.epa.gov/recycle/recycling-basics#Benefits>

- Fungus. (n.d.). In *Cambridge Dictionary online*. Retrieved from <https://dictionary.cambridge.org/dictionary/english/fungus>
- Gallardo, J. (2015). *Delicious Myanmar: Discover Myanmar through its people and food*. Amazon LLC.
- Garrison, C., & Ehringhaus, M. (n.d.). Formative and summative assessments in the classroom. Retrieved from <https://www.amle.org/formative-and-summative-assessments-in-the-classroom/>
- Gibbons, G. (1996). *Recycle!: A handbook for kids*. New York, NY: Little, Brown & Company.
- Gilbert, R. & Hoeppe, B. (2017). *Teaching humanities & social science: History, geography, economics and citizenship in the Australian Curriculum (6th ed.)*. South Melbourne, VIC, Australia: Cengage Learning.
- Han, T., & Aye, K. N. (2015). The legend of laphet: A Myanmar fermented tea leaf. *Journal of Ethnic Foods*, 2(4), 173–178.
- Hernandez, A. (2018). 5 main types of healthy food. Retrieved from <https://healthyeating.sfgate.com/5-main-types-healthy-food-6343.html>
- Hill, D., & Waller, J. (1990). *Pests and diseases of tropical crops (Vols. 1-2)*. London, England: Longman.
- Hojdal, L. (2019). *Career counselling: Themes and methods*.
- How to manage your pocket-money? (2008, April 16). Retrieved from <https://www.poliklinika-djeca.hr/english/for-kids-and-youth/free-time/how-to-manage-your-pocket-money/>
- Initiative. In *Cambridge Dictionary online*. Retrieved from [https://dictionary.cambridge.org/dictionary/english/initiative#:~:text=initiative%20noun%20\(NEW%20PLAN\)&text=a%20new%20plan%20or%20process,was%20welcomed%20by%20both%20sides.](https://dictionary.cambridge.org/dictionary/english/initiative#:~:text=initiative%20noun%20(NEW%20PLAN)&text=a%20new%20plan%20or%20process,was%20welcomed%20by%20both%20sides.)

- James, K. (2019). Digital development on steroids: Myanmar's entry into the Internet era brings challenges as digital literacy lags. Retrieved from <https://www.dw.com/en/digital-development-on-steroids-myanmars-rapid-entry-into-the-internet-era-brings-challenges-as-digital-literacy-lags/a-48669893>
- Journeyman Pictures (Director). (2018, October 7). *Myanmar's crippling high-interest loan industry* [Video file]. Retrieved from <https://www.youtube.com/watch?v=JtGiINFQMo8>
- Kidd, J. (2006). *Understanding career counselling: Theory, research and practice*. Thousand Oaks, CA: SAGE Publications.
- Kivunja, C. (2015). *Teaching, learning and assessment: Steps towards creative practice*. South Melbourne, VIC, Australia: OUP Australia and New Zealand.
- Kuzemchak, S. (2018). *101 healthiest foods for kids: Eat the best, feel the greatest - healthy foods for kids, and recipes too!* Gloucester, MA: Fair Winds Press.
- Lara, J., & Osborne, S. (2017). *Teaching pre-employment skills to 14-17-year-Olds: The autism works now! (R) method*. London, England: Jessica Kingsley.
- Latham, G., Blaise, M., Dole, S., Faulkner, J., Lang, J., & Malone, K. (2006). *Learning to teach: New times, new practices*. South Melbourne, VIC, Australia: OUP Australia and New Zealand.
- Le, C. (2017, January 7). What food tells us about culture. Retrieved from <https://freelymagazine.com/2017/01/07/what-food-tells-us-about-culture/>
- Leahy, I. (2014). Solutions to 10 common classroom problems ESL teachers have. Retrieved from <https://www.eslinsider.com/blog/solutions-to-10-common-classroom-problems>
- Life and career skills. (n.d.). Retrieved from <http://yesiamhappy.me/21st-century-skills/life-career-skills/>

- List of plant diseases. (2016, July 15). In *Encyclopedia Britannica Online*. Retrieved from <https://www.britannica.com/topic/list-of-plant-diseases-2033263>
- LWF Myanmar. (2018, July 3). *Strengthening small scale business through MAT* [Video file]. Retrieved from <https://www.youtube.com/watch?v=tkdhllx5DZE>
- Marsh, C. (2012). *Essential skills for the real world of work: Things every student must know! (Careers curriculum)*. Peachtree City, GA: Gallopade International.
- Martins, A. (2020, September 16). 50 best home based art & craft business ideas for 2020. Retrieved from <https://www.profitableventure.com/art-craft-business-ideas/>
- Maung Hla Win. (2013). *The 15 secret family treasured traditional Burmese recipes: Authentic cooking from the Asian Pacific region*. [Kindle version]. Retrieved from amazon.com
- McGraw-Hill, G. (2003). *Exploring careers (Formerly career skills) student workbook* (8th ed.). New York, NY: McGraw-Hill.
- Mckevitt, C. (2019). *An overview of Myanmar's recycling industry: A report by building markets*. Retrieved from https://buildingmarkets.org/sites/default/files/pdm_reports/myanmar_recycling_industry_overview_final.pdf
- Michigan State University Extension. (2012, December 19). Signs and symptoms of plant disease: Is it fungal, viral or bacterial? Retrieved from https://www.canr.msu.edu/news/signs_and_symptoms_of_plant_disease_is_it_fungal_viral_or_bacterial
- Ministry of Education. (2019). *National Assessment Policy for Basic Education (NAP)*. Republic of the Union of Myanmar. Retrieved from <https://neqmap.bangkok.unesco.org/resource/national-assessment-policy-for-basic-education-nap>

- Ministry of Education. (2020). Arts Year 1 Semester 2 Student Teacher Textbook. Republic of the Union of Myanmar .
- Ministry of Education. (2020). Local Curriculum Year 1 Semester 2 Student Teacher Textbook. Republic of the Union of Myanmar .
- Ministry of Education. (2022). Life Skills Year 2 Semester 1 Student Teacher Textbook. Republic of the Union of Myanmar .
- Ministry of Hotels and Tourism. (2020). Community based tourism. Retrieved from <https://tourism.gov.mm/community-based-tourism/>
- Missouri Department of Elementary & Secondary Education. (n.d.). School counselling curriculum. Retrieved from <https://dese.mo.gov/college-career-readiness/school-Counselling/curriculum>
- Mulcaire, S. (2017). *The 21st century student's guide to financial literacy - Getting personal (student workbook)*. Newport Beach, CA: C21 Publishing.
- Myanmar International TV (mitv). (2020). Vocational training: Weaving courses conducted in Hpa-an township. Retrieved from <https://www.myanmaritv.com/news/vocational-training-weaving-courses-conducted-hpa-township>
- Myanmar Travel Information. (2020). A Parasol from Pathein. Retrieved from <http://myanmartravelinformation.com/2012-03-20-05-40-54/traditional-culture/34-about-myanmar/traditional-culture/216-pathein-umbrella.html>
- MyMnCareers. (2020). Jobs vs. career. Retrieved from <https://careerwise.minnstate.edu/mymncareers/advance-career/job-vs-career.html>
- Nang Kay Si Kham., & Lorenz, F. (2018). *Myanmar employment law*. Retrieved from https://www.luther-lawfirm.com/fileadmin/user_upload/PDF/Veroeffentlichungen/180806_Luther_Employment_Law_in_Myanmar.pdf
- Nelson, R. (2014). *How I reduce, reuse, and recycle (First step nonfiction: Responsibility in action)*. Minneapolis, MN: Lerner Publishing Group.

Nematodes. (n.d.). In Cambridge Dictionary online. Retrieved from <https://dictionary.cambridge.org/dictionary/english/nematode?q=nematodes>

Nyein Ei Ei Htwe. (2019). Woven hopes and dreams. *Myanmar Times*. Retrieved from <https://www.mmtimes.com/news/woven-hopes-and-dreams.html>

Organisation for Economic Co-operation and Development (OECD). (2017). Enterprises by business size. Retrieved from <https://data.oecd.org/entrepreneur/enterprises-by-business-size.htm#:~:text=In%20small%20and%20medium%2D-sized,employ%20250%20or%20more%20people>

Oxford Business Group. (2020). Myanmar attracts growing number of tourists. Retrieved from <https://oxfordbusinessgroup.com/overview/be-enchanted-heritage-beauty-and-improved-regulations-attract-new-crop-domestic-and-regional>

Petsinger, K. (2016, March 14). 7 ways to help your child choose a career. Retrieved from <https://www.lifehack.org/376741/7-ways-help-your-child-choose-career>

Plant disease control [Slides]. Retrieved from <http://cemerced.ucanr.edu/files/40658.pdf>

Pocket money for kids: The advantages and disadvantages. (2012, April 30). <https://www.oneworldnews.com/pocket-money-for-kids-the-advantages-and-disadvantages/>

Pollard, A., Collins, J., Maddock, M., Simco, N., Swaffield, S., Warin, J., & Warwick, P. (2005). *Reflective teaching: Evidence-informed professional practice*. (2nd ed.) London, England: Continuum.

Principles of pruning. (n.d.). Retrieved from <https://images.homedepot-static.com/catalog/pdfImages/1d/1d7d9b5d-d71b-4a8d-b0f5-c2cafbff8f7e.pdf>

Pruning and training. (n.d.). Retrieved from <http://ecoursesonline.iasri.res.in/mod/page/view.php?id=1588>

Readman, K., & Allen, W. (2013). *Practical planning and assessment*. South Melbourne, VIC, Australia: OUP Australia and New Zealand.

Recycling facts and figures. (2010). Retrieved from <http://www.recycling-guide.org.uk/facts.html>

Recycling is important. (n.d.). Retrieved from <http://www.recycling-guide.org.uk/importance.html>

Recycling Simplified: Recycle smarter with Republic Services. (n.d.). Retrieved from <https://recyclingsimplified.com/>

Regional careers. (n.d.). Retrieved from <https://www.education.vic.gov.au/about/careers/regional-careers/Pages/default.aspx>

Reynolds, R. (2014). *Teaching Humanities and Social Sciences*, OUP

Rose, S. (2021a, March 18). Financial Literacy 101. Financial Literacy. Retrieved from <https://www.opploans.com/mooc/answers/101-financial-literacy/>

Rose, S. (2021b, March 18). What are the benefits of financial literacy? Financial Literacy. Retrieved from <https://www.opploans.com/mooc/answers/101-financial-literacy/>

Rose, S. (2021c, April 12). 7 expert perspectives on why financial literacy is important. Retrieved from <https://www.opploans.com/mooc/answers/why-is-financial-literacy-important/>

Roslaniec, A. (2018). Handling common classroom challenges: Teacher Trainers and a psychologist share their views. Retrieved from <https://www.english.com/blog/handling-common-classroom-challenges/>

Roslaniec, A. (2019, February 15). 4 Key challenges in secondary education. Retrieved from <https://www.english.com/blog/4-key-challenges-secondary-education/>

- S & F Consulting Firm. (2019). Small business ideas in Myanmar. Retrieved from <https://www.sfconsultingbd.com/asia/myanmar-foreign-company-registration-incorporation/small-business-ideas-in-myanmar/>
- Saint Joseph's University. (n.d.). Top 10 traits of a secondary education teacher. Retrieved from <https://online.sju.edu/graduate/masters-secondary-education/resources/articles/top-10-traits-of-a-secondary-education-teacher>
- Sanders, C., Welfare, L., & Culver, S. (n.d.). Career Counselling in middle schools: A study of school counselor self-efficacy. Retrieved from <https://tpcjournal.nbcc.org/career-Counselling-in-middle-schools-a-study-of-school-counselor-self-efficacy/>
- Sharma, P. *Plant disease management* [Slides]. Retrieved from <http://www.hillagric.ac.in/edu/coa/ppath/lect/plpath111/Lect.%2013%20Pl%20Path%20111-%20Principals%20of%20plant%20dis.%20management.pdf>
- Sheward, S., & Branch, R. (2012). *Motivational career counselling & coaching: Cognitive and behavioural approaches*. London, England: SAGE Publications.
- Shune Lai Thida. (2020) Ayeyarwady River is the life of Myanmar, but it's slowly dying? Retrieved from <http://www.changemag-diinsider.com/blog/ayeyarwady-river-is-the-life-of-myanmar>
- Singh, A. K., & Sisodia, A. (2017). *Textbook of floriculture and landscaping*. New Delhi: New India Publishing Agency.
- Smith, A. (2016). *Financial literacy for millennials: A practical guide to managing your financial life for teens, college students, and young adults*. Westport, CT: Praeger.
- Steve, C. (n.d.). The bitter truth: Lactose intolerance in South East Asia. Retrieved from <https://blog.lumahealth.com/lactose-intolerance-in-thailand-south-east-asia>

- Swain, R. (2020). Essential skills for secondary school teachers. Retrieved from <https://www.prospects.ac.uk/jobs-and-work-experience/job-sectors/teacher-training-and-education/essential-skills-for-secondary-school-teachers>
- Thazin Han, & Kyaw Nyein Aye. (2015). The legend of laphet: A Myanmar fermented tea leaf. *Journal of Ethnic Foods*, 2(4), 173–178. Retrieved from <https://doi.org/10.1016/j.jef.2015.11.003>
- The differences between formative and summative assessment - Infographic. (2017, April 14). Retrieved from <https://www.bookwidgets.com/blog/2017/04/the-differences-between-formative-and-summative-assessment-infographic>
- Tips: Top ten ways to recycle. (2007). Retrieved from <https://eponline.com/Articles/2007/11/12/Tips-Top-Ten-Ways-to-Recycle.aspx>
- Tours in Myanmar. (2019). Gold leaf beating workshop in Mandalay. Retrieved from <https://www.toursinmyanmar.com/Gold-leaf-beating-workshop-in-Mandalay/>
- Traditional. In *Oxford Languages Dictionary*. Retrieved from <https://www.oxfordlearnersdictionaries.com/us/definition/english/traditional>
- University of Southern California (USC). (n.d.). How to become a school counselor in California. Retrieved from <https://rossieronline.usc.edu/masters/school-Counselling-online/how-to-become-a-school-counselor/>
- U.S. BUREAU OF LABOR STATISTICS. (n.d.). Occupational outlook handbook. Retrieved from <https://www.bls.gov/ooh/>
- Valente, L. (2019). 10 secrets to cooking healthier. Retrieved from <https://www.eatingwell.com/article/15891/10-secrets-to-cooking-healthier/>
- Virus and Mycoplasma-like Organism (MLO) Diseases. Retrieved from <http://www.uky.edu/Ag/PAT/cat1/virus.htm>

- Virus. (n.d.). In *Cambridge Dictionary online*. Retrieved from <https://dictionary.cambridge.org/dictionary/english/virus>
- Watkins, C., Carnell, E., & Lodge, C. (2007). *Effective learning in classrooms*. London, England: SAGE Publications.
- Weinberg, A. S., Pellow, D. N., & Schnaiberg, A. (2000). *Urban recycling and the search for sustainable community development*. Princeton, NJ: Princeton University Press.
- What are career skills? (n.d.). Retrieved from <https://www.careertipstogo.com/career-skills-important/career-basics/>
- Whitton, D., Barker, K., Nosworthy, M., Sinclair, C. & Nanlohy, P. (2010). *Learning for teaching, teaching for learning*. (3rd ed.). Melbourne, Australia: Cengage Learning.
- World Health Organization (WHO). (2020). Salt reduction. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/salt-reduction>

Annexes

Annex 1: Disease Symptoms

Fungal disease symptoms



Anthraxnose on grape



Damping-off of tomato seedling



Downy mildew on cucurbits



Powdery mildew on cucurbits



Fusarium wilt on watermelon



Late blight on potato

Bacterial disease symptoms



Canker on citrus



Crown gall



Rice bacterial leaf blight

Symptoms of Viral disease



Mosaic on papaya

Disease symptoms caused by nematodes



Root knot

Disease symptoms caused by mycoplasma-like organisms



Phyllody symptoms in sesame

Annex 2: The Food Groups

Supplementary information: The food groups

Food pyramid

A balanced diet contains food that provide all the nutrients your body needs. Natural foods such as vegetables, fruits, meat and fish, are needed to maintain good health, which comes from organic and natural ingredients with no chemical additives like dyes or flavour enhancers.

The food pyramid below consists of four levels which represent the five food groups. Beside each food group is the recommended number of servings per day from each group. The size of each layer becomes smaller from bottom to top, meaning that one should more of the larger layers and less at the top.

Please revise the capitalisation as follows:

Food guide pyramid



Figure 5.9. Food guide pyramid

(Source: Updating Myanmar Food-based Dietary Guidelines by Dr. Lwin Mar Hlaing, 13 Feb 2020)

Nutritional guidelines

- Maintain a healthy weight.
- Choose a diet low in fat, saturated fat, and cholesterol.
- Choose a diet with plenty of vegetables, fruits, and whole grains.
- Use sugar only in moderation.
- Use salt/sodium only in moderation.
- Drink at least 8 glasses of water a day.
- Exercise regularly

Layer 1: Rice, noodles, bread, cereal, cereal products and tubers

These are the main source of carbohydrates, which provide 50 – 55% of total daily energy.

They can be a good source of vitamins, minerals and dietary fiber, which provides many benefits such as promoting regular bowel movements, good gut health, lowering cholesterol and blood glucose levels.

Choose whole grain products such as brown rice and wholemeal bread (*paung mount kyan*). These contain more fiber.

Eat 4 to 8 servings a day. Some example of one serving:

- 1 cup (2 scoops) of cooked rice
- 1 cup of breakfast cereal
- 6 biscuits (or cream crackers)
- 2 slices of bread
- 2 cup of plain rice porridge
- 2 whole potatoes

Layer 2: Fruits and vegetables

These are a good source of fibre, vitamins, minerals and phytochemicals, which help strengthen immunity. Type 2, cardiovascular diseases and certain cancers. Eat a variety of vegetables every day, including fresh green leafy vegetables, and other fresh vegetables including various coloured vegetables.

Eat at least three servings of vegetables and at least two serving of fruit each day. Choose fresh fruits. When made into juice, fruit loses the fiber, and so the body absorbs the sugar in the juice much more rapidly. Therefore, do not replace more than one serving of fruit with juice.

Examples of one serving of vegetables:

- ½ cup of dark green vegetable, cooked
- ½ cup of other vegetables, cooked

Example of one serving of fruits:

- 1 apple, pear, orange, small mango
- 1 slice of papaya, watermelon, pineapple
- ½ guava
- 2 small bananas
- 1 medium banana
- 8 grapes

Layer 3: Fish, poultry, meat and legumes

These are a good source of protein, the body's building block and are rich in vitamin B, iron, folate and zinc. Legumes are generally good sources of protein and count as a carbohydrate, which can serve as excellent sources of dietary fibre. They are also low in fat and contain no cholesterol as compared to meat and poultry. Legumes should be consumed daily.

Choose fish over meat more frequently, if possible daily.

Choose meat and poultry, which is low in fat and cholesterol. For example, remove the fat and skin from chicken before cooking, or choose lean meat.

Recommended daily servings:

- $\frac{1}{2}$ – 2 servings of poultry, meat, or egg (see below for size)
- 1 serving of fish
- $\frac{1}{2}$ – 1 serving legumes, such as *pe-hin*.

Example of one serving of fish, poultry, meat and eggs :

- 2 pieces of thin meat
- 1 medium-sized chicken drumstick
- $\frac{2}{3}$ cup of fish
- 2 whole eggs

Example of one serving of legumes:

- 1 cup chickpea/*pe hin*
- 1 $\frac{1}{2}$ glasses of unsweetened soymilk.

Layer 3: Milk and dairy products

These are high in protein, rich in calcium and wide range of minerals and vitamin such as vitamin A, riboflavin, vitamin B12 and zinc. Milk builds strong bones and teeth and maximises bone gain from an early age, which can help prevent osteoporosis later in life, especially for women. For people without allergies to dairy products, milk and dairy can be consumed everyday and whatever age. For people who cannot eat dairy products, soy milk may be a good substitute, or focus on finding protein from other foods.

Consume 1-2 servings a day.

Example of one serving of dairy:

- 1 glass of milk (250 ml)
- 1 cup yogurt
- 4 tablespoons of milk powder

Layer 4: Fats, oils, sugar and salt

Located on the top of the pyramid, these foods should be eaten only in small quantities.

Excessive consumption of fats, oil, sugar and salt can contribute to chronic diseases such as obesity, diabetes mellitus, cardiovascular disease, hypertension and cancer. Limit intake of foods high in fats, oil, sugar and salt, and minimise the use of fats, oil, sugar and salt in food preparation.

Notes

A series of 25 horizontal dotted lines spanning the width of the page, providing a template for handwritten notes.

Notes

A series of horizontal dotted lines for taking notes.

Notes

Dotted lines for taking notes.



The Government of the Republic of the Union of Myanmar
Ministry of Education