The Government of the Republic of the Union of Myanmar

Ministry of Education

Year 1 Semester 1

EDU1101

Educational Studies

Teacher Educator Guide

PREFACE

The Myanmar Ministry of Education developed the four-year Education 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 College curriculum consists of several components: the curriculum framework, syllabi, Student Teacher Textbooks, and Teacher Educator Guides. This curriculum for the four-year Education 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 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 module 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 module 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 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 College curriculum was developed by a curriculum core team, which is a Ministry of Education-appointed team of Myanmar Education 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. Substantial input to the drafting process was also provided by Japan International Cooperation Agency and the primary education curriculum development team through the Project for Curriculum Reform at Primary Level of Basic Education (CREATE) team.

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HOW TO USE THIS GUIDE

Who will use this Educational Studies Teacher Educator Guide?

This Teacher Educator Guide has been designed to help you facilitate student teachers' learning of Year 1 Educational Studies. It is addressed to you, as the teacher educator, and should be used in tandem with the Student Teacher Textbook as you teach Educational Studies. 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 lesson and unit in the Student Teacher Textbook.

When and where does Educational Studies take place?

The learning area of Educational Studies has been allotted 240 periods of teaching for each year of the four-year Education College programme. Classes will be held in the Education College campus.

What is included in the Year 1 Educational Studies Teacher Educator Guide?

The organisation and content of both the Student Teacher Textbook and this Teacher Educator Guide align with the syllabus of the four-year Education College curriculum on Educational Studies.

The Student Teacher Textbook, and accompanying Teacher Educator Guide, for this module contains the following topics for Year 1 Educational Studies:

- Introduction to Educational Studies;
- Pedagogical Theory and Practice;
- Strategies for Effective Learning;
- Planning and Preparation;
- Assessment;
- Overview of Myanmar's Education Systems, Policies and Trends;
- Educational Philosophy;
- Educational Psychology;
- Creating a Learning Environment; and
- Professionalism.

The Teacher Educator Guide follows the same structure as the Student Teacher Textbook. For each unit and lesson, there are **expected learning outcomes** that indicate what student teachers should know and be able to do by the end of the unit.

For each lesson, the Teacher Educator Guide includes:

Competencies gained: This list of competencies highlights the teacher competencies from the Teacher Competency Standards Framework 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.

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

Resources needed: This can include: printed media; flipchart paper; coloured paper; marker pens; URLs; video clips; low/no cost resources; 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 student teacher prior knowledge or fostering interest in the module. Learning activities are varied and in line with competency-based approaches to teaching and learning.

Stop and think: This instruction box is 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, 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: The responses that you may get from the student teachers for each learning activity's assessment are recorded here.

Check student teachers' understanding: This is the lesson plenary. At the end of the lesson, revisit the learning objectives and TCSF competencies, summarise the learning outcomes 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.

Extension and differentiation activities: Each lesson in this guide includes ideas on ways to adapt the learning activities to either provide additional stimulus for stronger student teachers (extension) or extra support for student teachers who are struggling or who have different learning needs (differentiation).

For each unit, the Teacher Educator Guide includes:

Review questions: Possible student teachers' responses: A box at the end of each 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.

For each unit, the Teacher Educator Guide includes:

Unit summary: 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 them up in the library, on the internet or in your Education 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 College programmes follow a competency-based approach. This is outlined in the four-year Education College Curriculum Framework 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 module 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.[1]

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

- **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, as 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.[2]

[1] Adapted from the Glossary of Curriculum Terminology (2013), International Bureau of Education (IBE), UNESCO
[2] Lejenue's Collaborative Learning for Educational Achievement (1999)

- **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.

Module rationale and description

The purpose of this course is to introduce student teachers to the basic concepts of educational theory, educational technology, educational management, educational psychology and educational test, measurement and assessment and apply them in the teaching learning process and in real-life situations. Student teachers will become aware of the educational trends, different philosophies, learning theories and recent trends. And they will also know the importance of developmental milestones of the students in all domains. Student teachers will get pedagogical knowledge and be able to choose the best pedagogical practices for their teaching depending on learners' needs and learning situation. Moreover, they will be able to distinguish characteristics of test, measurement, evaluation and assessment and apply them in the teaching and learning process. To educate student teachers to become effective professionals, there are two elements in Educational Studies: the understanding of knowledge and its application situated in the disciplines of education such as psychology and the history of education. Critical reflection about the development of education will help student teachers change their attitudes, behaviour and skills so to develop professional attitudes and values.

Basic Education Curriculum objectives

This syllabus refers to the learning area Educational Studies, Module 1.1 Understanding Educational Theories and Module 1.2 Applying Educational Theories as described in the Education College Curriculum Framework (2018). The syllabus outlines what student teachers in Education Colleges will explore in order to prepare them to be ready for teaching primary and lower secondary students in primary and middle schools. It is important that teachers use educational knowledge and theory in their professional lives appropriately. Teaching is a valuable profession, and primary and middle-school teachers are as important as high school teachers. The disciplines of education will help inform student teachers about their role as educators situated in the principles for the 21st century.

This subject syllabus aims to prepare student teachers to be ready to teach primary and lower secondary students in primary and middle school by being able:

1. To discuss the basic concepts of educational theories and psychology;
2. To facilitate how these concepts can be applied in teaching-learning situations; and
3. To prepare student teachers to be efficient teachers.

Table A. Educational Studies teacher competencies in focus

Competency standard	Minimum requirement	Indicators
A1: Know how students learn	A1.1 Demonstrate understanding of how students learn relevant to their age and developmental stage	A1.1.1 Give examples of how the students' cognitive, physical, social, emotional and moral development may affect their learning A1.1.2 Prepare learning activities to align with students' level of cognitive, linguistic, physical, social and emotional development
	A1.2 Demonstrate understanding of how different teaching methods can meet students' individual learning needs	A1.2.2 Identify focused and sequenced learning activities to assist students to link new concepts with their prior knowledge and experiences
A2: Know available educational technologies	A2.1 Demonstrate understanding of appropriate use of a variety of teaching and learning strategies and resources	A2.1.1 Plan learning experiences that provide opportunities for student interaction, inquiry, problem-solving and creativity A2.1.2 Use teaching methods, strategies and materials as specified in the textbooks and additional low cost support materials to support student learning
	A2.2 Demonstrate understanding of appropriate use of Information and Communications Technology (ICT) in teaching and learning	A2.2.3 Describe and demonstrate the understanding of basic concepts and principles of media and information literacy
A3: Know how to communicate well with students and their families	A3.1 Demonstrate understanding of the role and expected duties of teachers in Myanmar	A3.1.1 Describe the role and five duties of Myanmar teachers as socially accepted norms
	A3.2 Demonstrate respect for the social, linguistic and cultural diversity of the students and their communities	A3.2.1 Give examples of inclusive communication to support all students' participation and engagement in classroom activities

Competency standard	Minimum requirement	Indicators
A4: Know the curriculum	A4.1 Demonstrate understanding of the structure, content and expected learning outcomes of the Basic Education Curriculum	A4.1.2 Prepare lesson plans reflecting the requirements of the curriculum and include relevant teaching and learning activities and materials A4.1.3 Describe the assessment principles underpinning the primary curriculum
A5: Know the Module content	A5.1 Demonstrate understanding of the subject matter to teach the subject/s for the specified grade level/s	A5.1.1 Describe the key concepts, skills, techniques and applications for the module covered in the grade levels taught
	A5.2 Demonstrate understanding of how to vary delivery of module content to meet students' learning needs and the learning context	A5.2.1 Describe ways to contextualise learning activities for the age, language, ability and culture of students to develop understanding of module related to principles, ideas and concepts A5.2.2 Explain how lessons are contextualised to include localised information and examples related to the module content, concepts and themes
B1: Teach curriculum content using various teaching strategies	B1.1 Demonstrate capacity to teach subject-related concepts and content clearly and engagingly	B1.1.1 Clearly explains the curriculum content and intended learning outcomes B1.1.2 Select instructional material to link learning with students' prior knowledge, interests, daily life and local needs B1.1.3 Encourage students' awareness of their own ideas to build new understanding
	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 – type, culture and size B1.2.2 Use knowledge of literacy and numeracy instructional strategies to support students learning in different subject areas B1.2.3 Create opportunities for students to investigate module-related content and concepts through practical activities

Competency standard	Minimum requirement	Indicators
	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 of the lesson time is used effectively B1.3.2 Provide lesson introductions to link new learning to prior learning, to engage students' interest and to motivate them in learning B1.3.3 Prepare focused and sequential learning experiences that integrate learning areas and are responsive to students' interests and experience B1.3.4 Use questioning techniques and examples to introduce and illustrate concepts to be learnt
B2: Assess, monitor and report on students' learning	B2.1 Demonstrate capacity to monitor and assess student learning	B2.1.1 Use assessment techniques as part of lessons to support students to achieve learning outcomes
B3: Create a supportive and safe learning environment for students	B3.1 Demonstrate capacity to create a safe and effective learning environment for all students	B3.1.1 Use space and classroom materials and resources to ensure involvement of all students in learning activities B3.1.2 Encourage students to interact with each other and to work both independently and in teams B3.1.3 Model and promote good health and safety practices to ensure students' well-being and safety within the classroom and school
	B3.2 Demonstrate strategies for managing student behaviour	B3.2.2 Encourage students to interact with each other with mutual respect and safety
B4: Work together with other teachers, parents and community	B4.1 Demonstrate strategies for working together with other teachers, parents and the local community to improve the learning environment for students	B4.1.3 Seek colleagues' perspectives in attempting to respond to learning issues and accept feedback positively
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
C2: Service to community leadership	C2.1 Demonstrate commitment to serve the school and community as a professional member of the teaching profession	C2.1.1 Contribute actively to a range of school and community activities

Competency standard	Minimum requirement	Indicators
C3: Promote quality and equity in education for all students	C3.1 Demonstrate a high regard for each student's right to education and treat all students equitably	C3.1.1 Show awareness of the right to education of every child and a commitment to nurture the potential in each student
	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
D1: Reflect on own teaching practice	D1.1 Regularly reflect on own teaching practice and its impact on student learning	D1.1.3 Regularly reflect on a wide range of actions and experiences to identify areas for own continuous professional development as a teacher
D2: Engage with colleagues in improving teaching practice	D2.1 Improve own teaching practice through learning from other teachers and professional development opportunities	D2.1.1 Discuss teaching practices with supervisors, colleagues and willingly seek constructive feedback D2.1.3 Establish goals for own professional development as a teacher D2.1.4 Participate in professional activities conducted by school clusters and recognised professional associations
D3: Participate in professional learning to improve teaching practice	D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice	D3.1.1 Identify relevant professional learning material to improve own practice D3.1.2 Search and analyse online or offline information on current trends and research-based practices in primary education and for specific modules taught to improve one's own content knowledge and teaching practice

Source: Myanmar Teacher Competency Standards Framework (TCSF), Beginning Teachers, Draft Version 3.2. (May 2019) (pp 30-36).

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 module 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 subjects hould 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 deeply and meaningfully connect 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.

Gender equality and inclusivity in the classroom

Actively promoting 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.

As a teacher educator, 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 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 gender, either implicitly or explicitly, can have a long-lasting impact on the future behaviour of your student teachers.

Be aware of your own gender biases. Reflect on your actions and the teaching strategies you use. Consider these ways in which you can ensure gender inclusivity in your classroom:

- Ensure that there is equal frequency in the representation of male and female names and characters. When identifying characters whose gender is unknown, use alternating pronouns (he, she).
- When using quotes ensure that both female and male voices are heard.
- Ensure that females and males are represented equally in illustrations and that any existing gender stereotypes are not reinforced.
- Use equitable and gender-inclusive language in the classroom and ensure that your student teachers do likewise.

- Help and encourage your student teachers 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 modules, for example, when asking questions, asking for volunteers, selecting activity leaders, giving complements, giving eye contacts or even remembering the names of student teachers.
- Encourage and support the participation of quieter student teachers, regardless of gender.
- Use teaching and learning strategies and assessment approaches that support equal participation from both genders, for example, group work, role plays and group discussions. Manage the activities in a flexible manner addressing different needs and learning styles of all student teachers, to ensure that both female and male student teachers have the opportunity to participate actively and that individuals do not dominate activities.
- Ensure to set an equal expectation for both female and male student teachers on their performance across different modules.
- Arrange the classroom setting in a gender-sensitive and equal manner, in terms of classroom decorations, seating arrangement or group formation/division.

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.

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.

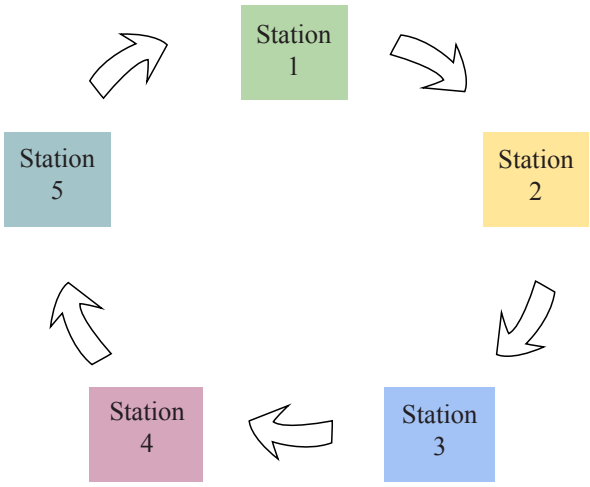
Assignments: The assignments that you give to student teachers might include formal written essays, portfolios and reflection journals. They also might be smaller, developmental tasks – for example, a short homework assignment answering questions about a reading. Assignments can help student teachers 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 strategy. Directed activities are typically followed up in tutorials, seminars or workshops, which provide an opportunity for student teachers to share about what they have learned 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.

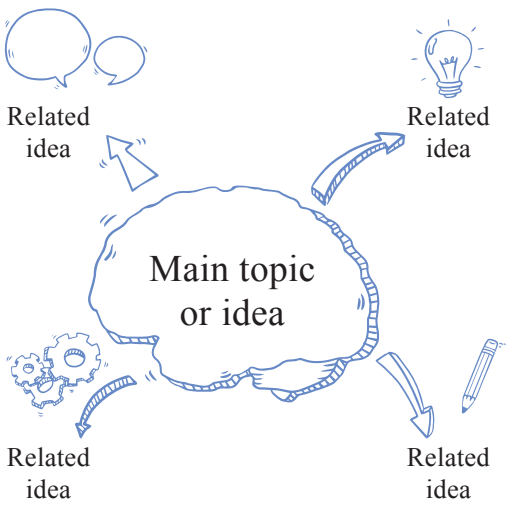
You can also use a version of the gallery walk to display student teachers' work. In this type of gallery walk, posters created during individual or group work are displayed around the room. Student teachers then circulate at their own pace to either simply view the posters or to add their questions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



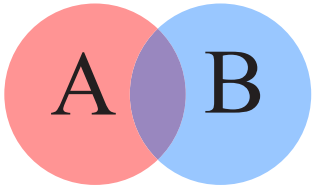
Graphic organisers: Graphic organisers are a simple and effective tool to help student teachers brainstorm and organise their thoughts and ideas in a way that makes it easier for them to understand. Graphic organisers can be used in any lesson for brainstorming, planning, problem-solving or decision-making.

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 learned.

K What I **K**now	W What I **W**ant to know	L What I **L**earned

- **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 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.

Modeling: Modeling is an instructional strategy in which the teacher demonstrates a new concept or approach and students learn by observing.[3] 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 modeling.

[3] Eggen and Kauchak, *Strategies and Models for Teachers: Teaching Content and Thinking Skills,* (2001)

Modeling 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 modeling in teaching and encourage student teachers to reflect on how they might use modeling 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: Practicals 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. Practicals can also encourage student teachers to connect theory to their developing practice as teachers.

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 supported 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 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 debated and analysed. Student teachers usually complete preparatory work or reading before the seminar. While you would lead the seminar as 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 learned 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 links to websites 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 learned 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 module and other modules, 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 module 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 if 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 to 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 module content specific knowledge and reflection of related pedagogy discussed during the module.

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 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 you 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 for the 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 of 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 **Stop and think** 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 learned 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. Educational Studies Content Map

Units	Sub-units	Lessons	Learning Outcomes	TCSF	Periods
1. Introduction to Educational Studies	1.1. What is Education?	1.1.1. The meaning of education	• Provide historical and personal definitions of education	A4 A5	1
	1.2. What is Teaching? What is Learning? What is School?	1.2.1. The Relationship between Teaching, Learning, and School	• Identify linkages between teaching and learning • Identify the characteristics of school as a learning environment	A4 A5	2
	1.3. Understanding Educational Studies	1.3.1. What is Educational Studies, and Why is it Important?	• Describe the field of Educational Studies and why it is important	A4 A5	1
	1.4. Educational Studies in the Education College Programme	1.4.1. Why Study Educational Studies in your Education College?	• Identify the purpose of the Educational Studies modules • Understand the scope of content covered during Year 1 of the Education College module and the linkages between Education Studies and other subjects	A4 A5 C3	2
2. Pedagogical Theory and Practice	2.1. What is Pedagogy? What is Pedagogical Content Knowledge (PCK)?	2.1.1. Understanding Pedagogy and Pedagogical Content Knowledge	• Define the terms 'pedagogy' and 'pedagogical content knowledge' (PCK)	A4 A5 C3	2
	2.2. What is Pedagogical Theory and Practice?	2.2.1. Thinking about Pedagogical Theory and Practice	• Describe teaching and learning strategies	A4 A5 C1	2
	2.3. Foundational Learning Theories and Learning Theorists	2.3.1. Important Learning Theories and Theorists	• Identify foundational learning theories and learning theorists	A4 A5	2
	2.4. How Children Learn	2.4.1. Children as Natural Learners	• Explain how children naturally learn	A4 A5 C1 D1	2
	2.5. Bloom's Taxonomy	2.5.1. The Three Domains of Learning in Bloom's Taxonomy	• Identify action verbs for Bloom Taxonomy's three domains of learning	A4 A5 C1 D3	2

Units	Sub-units	Lessons	Learning Outcomes	TCSF	Periods
	2.6. Learning Principles	2.6.1. Learning Principles for Effective Learning	• Relate learning principles to effective learning	A4 A5 C1	2
	2.7. Learning Styles	2.7.1. Understanding and Appreciating Different Learning Styles	• Explain different learning styles and their impact in students' learning	A4 A5 C1 C3	2
	2.8. Basic Learning Models and Teaching Strategies	2.8.1. Learning about Learning Models	• Relate basic learning models to local contexts	A4 A5 C1 C3 D1	4
	2.9. The 'Input-Process-Output' Process	2.9.1. What is IPO?	• Draw an IPO process diagram with examples	A4 A5 C1 D1	2
	2.10 Child Development	2.10.1. Important Stages in Child Development	• Demonstrate knowledge of how young learners (5-10 years old) learn according to their developmental stage • Explain the concepts and theories of: growth and development, nature and nurture, developmental domains and milestones, brain development, developmentally appropriate tasks, the uniqueness of a child, and the child as a whole.	A4 A5 C1 C3 D3	4
3. Strategies for Effective Learning	3.1. Questioning and Leading Learning	3.1.1. How to Lead Learning by Using Questions	• Discuss the leading role of the teacher for supporting students to meet learning outcomes. • Develop different levels of questioning by using Bloom's Taxonomy	A4 A5 C1 C3 D3	4
	3.2. Communicating with Students	3.2.1. Effective Communication in the Classroom	• Discuss how the teacher can communicate clearly and accurately to students • Examine the importance of the teacher listening to students • Discuss how to provide feedback to students that enhances their learning	A4 A5 C1 C3 D1 D3	4

Units	Sub-units	Lessons	Learning Outcomes	TCSF	Periods
	3.3. Active, Interactive, and Cooperative Learning	3.3.1. Designing Active, Interactive, and Cooperative Learning	• Describe various strategies for engaging primary students in effective learning	A4 A5 C1 C3 D3	4
	3.4. Developing Autonomy and Student-Led Learning	3.4.1. The Importance of Autonomy and Student Ownership in Learning	• Compare and contrast the differences between teacher-centred and learner-centred approaches to learning	A4 A5 C1 C3 D3	4
	3.5. Responding to Need and Adapting to Circumstances	3.5.1. Meeting Individual Student Needs	• Apply adjustment mechanisms in teaching and learning situations	A4 A5 C1 C3 D3	4
	3.6. Providing Positive Feedback	3.6.1. Offering Positive Feedback to Promote Learning	• Provide positive feedback to each other in demonstration	A4 A5 C1 C3 D3	4
	3.7. The Importance of Motivation for Effective Learning	3.7.1. Motivating Students for Effective Learning	• Identify the advantages of motivation for effective learning	A4 A5 C1 C3 D3	3
	3.8. The Importance of Student Engagement	3.8.1. Engaging Students in Learning	• Explain the importance of student engagement	A4 A5 C1 C3 D3	3
4. Planning and Preparation	4.1. How to Identify the Main Ideas, Related Ideas, and Details of a Reading	4.1.1. Identifying the Main Idea, Related Idea and Details of a Reading	• Identify the main concept and related ideas of a reading	A4 A5 C1 C3 D3	2
		4.1.2. Seven Steps to Teaching Yourself Content	• Identify the main concept and related ideas of a reading	A4 A5 C1 C3 D3	2

Units	Sub-units	Lessons	Learning Outcomes	TCSF	Periods
	4.2. Setting Learning Objectives, Outcomes, and Success Criteria	4.2.1. Objectives, Outcomes and Success Criteria	• Explain the importance of learning objectives, outcomes and success criteria	A2	2
		4.2.2. Comparing Learning Outcomes, Objectives and Success Criteria	• Compare the differences between learning objectives, outcomes and success criteria	A2	1
		4.2.3. SMART Learning Outcomes	• Construct Specific, Measurable, Achievable, Relevant and Time bound SMART learning outcomes • Compare the differences between learning objectives, outcomes and success criteria	A2	1
	4.3. Selection of Teaching Strategies for Each Respective Subject	4.3.1. Teaching Strategies for Subjects	• Select teaching strategies based on the nature of the subject	A2	1
		4.3.2. Guided Discovery	• Select teaching strategies based on the nature of the subject	B1	2
		4.3.3. Dramatisation and Other Strategies	• Select teaching strategies based on the nature of the subject	B1	1
	4.4. Teaching and Learning Materials	4.4.1. Common Teaching and Learning Materials	• Describe the importance of teaching resources and how to use them effectively in different circumstances	A2	2
		4.4.2. Worksheets as teaching aids	• Describe the importance of teaching resources and how to use them effectively in different circumstances	A2	1
		4.4.3. Videos as teaching aids	• Describe the importance of teaching resources and how to use them effectively in different circumstances	A2	1
	4.5 Characteristics of Good Learning Activities	4.5.1 Learning activities	• Describe what a learning activity is and explain the characteristics of a good learning activity	A2	2

Units	Sub-units	Lessons	Learning Outcomes	TCSF	Periods
	4.6 Designing Teaching Activities	4.6.1. Teaching Activities for Introducing a Lesson and Teaching Main Idea and Related Ideas of a Reading	• Explain various types of teaching and learning activities	A2	2
		4.6.2. Activities for Teaching Vocabulary	• Explain various types of teaching and learning activities	A2	1
		4.6.3. Putting it All Together	• Explain various types of teaching and learning activities	B1	3
	4.7. Lesson Planning	4.7.1. Sequencing, chunking, estimating time, documenting the plan	• Explain what needs to be considered in order to prepare a good lesson plan	B1	1
		4.7.2. Teaching the Seasons	• Explain what needs to be considered in order to prepare a good lesson plan • Prepare a draft lesson plan and assess it using criteria for good lesson planning	B1	1
		4.7.3. Comparing and Creating Lesson Plans	• Explain what needs to be considered in order to prepare a good lesson plan • Prepare a draft lesson plan and assess it using criteria for good lesson planning	B1	1
		4.7.4. Creating lesson plans	• Prepare a draft lesson plan and assess it using criteria for good lesson planning	B1	2
		4.7.5. Presenting lesson plans	• Assess a lesson plan using criteria for good lesson planning	B1	1
5. Assessment	5.1. What is Assessment for Learning?	5.1.1. Introduction to assessment and feedback	• Describe the meaning of assessment and the types of assessment • Identify the guiding principles about assessment for learning • Explain why feedback is important for learning	A2 B1 B2	2
	5.2. Why and When to Assess	5.2.1. How to use assessment and feedback effectively	• Explain why assessment is needed and when assessment needs to take place • Explore when to use which types of assessment appropriately • Use feedback strategies effectively	A4 A5 C1 C3 D3	2

Units	Sub-units	Lessons	Learning Outcomes	TCSF	Periods
	5.3. Different Types of Assessment	5.3.1 Different types of assessment that are used	• Describe different types of assessment • Explain at least two types of assessment	A4 A5 C1 C3 D3	2
		5.3.2. The reasons for using different assessment types	• Demonstrate the reasons behind using different types of assessment	A4 A5 C1 C3 D3	2
	5.4. Guiding Principles of Assessment for Learning	5.4.1. Applying assessment methodologies	• Apply appropriate assessment approaches for learning in the teaching-learning situation	A4 A5 C1 C3 D3	2
		5.4.2. Self and Peer-assessment Techniques	• Describe self-assessment and peer-assessment • Evaluate their teaching ability by using self-and peer-assessment	A4 A5 C1 C3 D3	2
	5.5. Appropriate Techniques of Assessment (1)	5.5.1. Understanding educational tests	• Apply the understanding of differences between nature and definition of test, measurement and assessment • Organise effectively the understanding of major functions and purposes of educational assessment	A4 A5 C1 C3 D3	2
		5.5.2. Types of Achievement Tests	• Classify the types of achievement tests according to nature of content and various function, types of approaches applied • Understand and use planning the test as summative assessment	A4 A5 C1 C3 D3	2
	5.6. Appropriate Techniques of Assessment (2)	5.6.1. Types of assessment tools	• Explain various types of assessment tools • Discuss the importance of keeping accurate records for both formative and summative purposes	A4 A5 C1 C3 D3	2
		5.6.2. Keeping Accurate Records	• Discuss the importance of keeping accurate records for both formative and summative purposes	A4 A5 C1 C3 D3	2

Units	Sub-units	Lessons	Learning Outcomes	TCSF	Periods
	5.7. Types of Test Questions	5.7.1. Different test questions that can be used in assessment	• Identify different type of written tests	A4 A5 C1 C3 D3	2
		5.7.2. Developing written tests	• Develop a good question item	A4 A5 C1 C3 D3	2
	5.8. Importance of Keeping and Using Accurate Records for Improvement of Learning	5.8.1. Keeping accurate records of assessment	• Discuss ways of collecting data (primary student records)	A4 A5 C1 C3 D3	2
	5.9. Basic Statistical Knowledge on Educational Tests and Measurements	5.9.1. The nature of statistics	• Explain and verify the quality of classroom test • Describe nature of statistical analysis in education	A4 A5 C1 C3 D3	2
		5.9.2. Analysing data through the use of graphs	• Explain how to evaluate data using graphical analysis	A4 A5 C1 C3 D3	2
Total number of periods					120

Unit 1

Introduction to Educational Studies

Educational Studies is about what we can understand about how people develop and learn throughout their lives. This understanding can help us to design more effective education systems and more effective lessons that result in positive learning outcomes for all students. Through Educational Studies, student teachers will be introduced to foundational education theories and will, eventually, be able to apply these concepts to their own teaching and learning.

Educational Studies asks us all to think critically about key education issues, including the nature and purpose of education, the content and development of curricula, and how teaching and learning takes place. Student teachers will begin to do this in this unit as they think about the meaning of words we take for granted every day – words like education, teaching, learning, and schools.

This unit provides an introduction to these key terms in the study of education, a summary of what Educational Studies encompasses and why it is important, and what student teachers can expect to learn in Year 1 of the Education College Educational Studies module.

Expected learning outcomes

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

- Provide historical and personal definitions of education;
- Identify linkages between teaching and learning;
- Identify characteristics of school as a learning environment;
- Describe the field of Educational Studies and why it is important;
- Identify the purpose of the Educational Studies courses; and
- Understand the scope of content covered during Year 1 of the Education College programme and the linkages between Educational Studies and other subjects.

1.1. What is Education?

1.1.1. The meaning of education

Expected learning outcomes

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

- Provide historical and personal definitions of education.

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 appointed subject/s for the specified grade level/s

Time: One period of 50 minutes

Learning strategies: Brainstorming, group discussion, teacher summary

Preparation needed: Read Educational Studies Student Teacher Textbook Lesson 1.1.1

Resources needed: Educational Studies Student Teacher Textbook

Learning activity 1: Brainstorming (10 minutes)

1. Ask student teachers what comes to mind when they think about the term 'education'. There are no wrong or right answers. Make a list of the responses on the board (or ask for a volunteer to do this).

Assessment

There are no wrong or right answers. Accept any reasonable suggestions.

Possible student teachers' responses

Responses will be based on student teachers' personal experiences and opinions. A key point of this lesson is that there is no single right or wrong answer about the definition of education – different theorists have emphasised the importance of different aspects of education.

Learning activity 2: Small group discussion (20 minutes)

1. Divide the student teachers into groups of five and ask them to discuss the following questions. Someone in the group should be assigned to take notes:

    a. Why did you choose the teaching profession?
    b. How would you define education?
    c. How did you gain the knowledge and learn the attitudes and behaviour that you possess now (including both academic and life skills)?

2. After the groups have had a chance to discuss, come together as a whole class. Go question by question, calling on a representative from each group to share their answers. After each answer, if appropriate, you can rephrase a key point and appreciate opinions.

Assessment

Informally assess understanding of the key points of the unit. Remind student teachers to continually develop their personal definition and educational philosophy.

Possible student teachers' responses

Again, responses will be based on student teachers' personal experiences and opinions.

Learning activity 3: Summary of main points (10 minutes)

1. Explain to the class the key ideas from the Student Teacher Textbook Sub-unit 1.1 on the definition and purpose of education. You do not need to go through the textbook content line-by-line, rather just summarise the main idea and key points of Sub-unit 1.1, making the points that:

    a. There is no one single definition of education, and throughout history, various thinkers and educators have defined education in their own way.
    b. One of the key purposes of education is to help individuals develop a will and faculty for learning.
    c. Children or students, must learn the essentials of knowledge discovered in the past to be able to acquire further knowledge through their own efforts. They must learn not only *what to think,* but also *how to think.*
    d. Education may be formal or it can be informal. Formal education is consciously and deliberately planned for the purpose of training a child and the modification of behaviour. Informal education is not pre-planned or deliberate, and it is not provided through institutions such as a school or specialised agency.

Assessment

Informally assess understanding of the key points of the unit. Remind student teachers to continually develop their personal definition and educational philosophy.

Possible student teachers' responses

Student teachers should understand that formal education is consciously and deliberately planned for the purpose of training a child and the modification of behaviour. Informal education is not pre-planned or deliberate, and it is not provided through institutions such as a school or specialised agency.

Learning activity 4: Individual reading (optional) (10 minutes, if used)

1. With any time remaining in the class period, student teachers can read Unit 1, sub-unit 1.1 of the textbook. For homework, they should answer the following questions about sub-unit 1.1 in their notebooks and also read sub-unit 1.2:

    a. Of the quotes about education in sub-unit 1.1, which statement best represents how you think about education, and why?
    b. What do you think are the most important purposes of education?
    c. What are the differences between 'formal' and 'informal' education?

Assessment

Homework assignment: Read the unit and answer the questions above in writing. Collect student teachers' responses to the questions.

Possible student teachers' responses

Student teachers should use the information in the unit, the content of this lesson, and their own experiences and opinions (questions A and B) to answer the questions. Question C refers back to Learning activity 3.

Check student teachers' understanding (10 minutes)

1. Remind student teachers that this lesson has focused on investigating the meaning of education.
2. Ask student teachers to discuss what they now perceive to be the aims of education? What expectations do they perceive to be on themselves and on their students?

3. Take some feedback from two or three student teachers.

Extension and differentiation activities

Learning activities 1 & 2: Student teachers could pick one education theorist or philosopher mentioned in sub-unit 1.1 and do further research in the library or on the internet on how his/her ideas have shaped the way we think about education.

Review questions: Possible student teachers' responses

Question 1: Describe the following terms in your own words:

- Education;
- Formal and informal education; and
- Teaching and learning.

*Answer: There is no one single definition of **education**. Education helps individuals develop a will and faculty for learning. It is about acquiring knowledge, skills and the ability to think and solve problems.*

***Formal education** is consciously and deliberately planned for the purpose of training a child and the modification of behaviour. **Informal education** is not pre-planned or deliberate, and it is not provided through institutions such as a school or specialised agency.*

***Teaching** is 'causing to learn.' **Learning** is a change in behaviour or knowledge that occurs as a result of an experience.*

Question 2: How can formal and informal education complement each other?

Answer: The five types of learning can be fostered in both formal, planned settings and through everyday life. It is important to be able to apply what is learned through formal education in real-life; informal education can help us make these connections between what we learn in classrooms and the knowledge and skills we need every day.

1.2. What is Teaching?
What is Learning?
What is School?

1.2.1.
The relationship between teaching, learning, and school

Expected learning outcomes

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

- Identify linkages between teaching and learning; and
- Identify characteristics of school as a learning environment.

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 appointed subject/s for the specified grade level/s

Time: Two periods of 50 minutes

Learning strategies: Peer review; whole class brainstorming and discussion; think-pair-share; small group discussion; drawing

Preparation needed: Educational Studies Student Teacher Textbook; flipchart paper; markers; A4 paper

Period 1

Learning activity 1: Peer homework review (15 minutes)

1. Student teachers were assigned to finish reading Sub-unit 1.1, answer three questions, and read Sub-unit 1.2 for homework. Ask them to compare answers to the three homework questions with the person sitting next to them:

    a. Of the quotes about education in Sub-unit 1.1, which statement best represents how you think about education, and why?
    b. What do you think are the most important purposes of education?
    c. What are the differences between 'formal' and 'informal' education?

2. After student teachers have discussed their answers with a partner, come together as a whole class and ask for volunteers to share their responses. You may wish to do an informal vote to see which statements about education by famous theorists (listed in Sub-unit 1.1) were most meaningful to the student teachers in your class.

Learning activity 2: Whole class brainstorming and discussion (35 minutes)

1. Label four sheets of flip chart paper with 'education,' 'teaching,' 'learning,' and 'school.' As a whole class brainstorm a list of key characteristics for each of these terms. Again, you can emphasise that there is not one correct, simple answer – these are complex ideas. If needed, student teachers can refer to their textbooks to make sure you have a list of the most important points.
2. After you have the list, ask for volunteers to provide ideas about how the ideas of education, teaching, learning, and school connect – or interact – with each other.

Assessment

Since the ideas are written on large flipchart paper, you will be able to assess student teachers' ability to suggest relevant ideas.

Homework assignment: Student teachers should review the content of Sub-unit 1.2.

Expected student teachers' responses

Student teachers may respond a number of ways; for example: School is where teaching and learning take place. Teaching and learning are the core pillars of education. A teacher teaches, and students learn. See how many of these statements your class can come up with.

Period 2

Learning activity 3: Think-pair-share (10 minutes)

1. To focus on the idea of 'teaching,' ask student teachers to think about their favourite teacher. What characteristics made this teacher memorable and effective?
2. After they have made a list individually, ask them to talk with the classmate sitting next to them about their favourite teachers. Do they have similar lists of characteristics to describe the teacher or are they different? How do their lists match up with the bullet-points above on what makes an effective teacher?

Assessment

There are no right or wrong answers in this task. Ask a few volunteers to share some points about important qualities for a good teacher.

Expected student teachers' responses

Student teachers will doubtless have opinions about their teachers – remind them that the focus here should be on positive qualities and effective teaching strategies.

Learning activity 4: Small group discussion (20 minutes)

1. Emphasise that 'teaching' requires learning to be taking place. To focus on 'learning', divide student teachers into groups of four or five.
2. Ask them to look at the four types of learning described in Sub-unit 1.2 and come up with a few examples of each type of learning, either from in school or outside of school.
3. Once they have discussed in small groups, come together as a whole class, and ask a representative from each group to share some examples.

Assessment

Formatively assess whether the student teachers' examples fit within each type of learning. You may need to ask them to justify their ideas. Peer-assessment can also take place here as you can ask other student teachers to comment or expand on a classmate's idea.

Possible student teachers' responses

There will be many different examples given for the types of learning; in general, examples about 'learning to know' should focus on gaining knowledge; 'learning to do' should focus on gaining skills; 'learning to live together' should focus on relationships and peace; 'learning to be' should focus on personal growth and well-being; and 'learning to transform oneself and society' should focus on how one can apply learning to help your community and world.

Learning activity 5: Designing an ideal school (20 minutes)

1. Teaching and learning take place in schools. To focus on 'school,' ask student teachers to take about 10 minutes to draw an illustration of their ideal school or classroom. What are the things which need to include to be a welcoming, friendly environment where all children, regardless of background, can learn?
2. In the same groups of four or five from the small group discussion, student teachers can then share and discuss their drawings.

3. End the lesson by explaining that thinking about things like teaching, learning, and schools is part of what you do in Educational Studies, which is the study of education. They will be learning more about the field of Educational Studies in the next class period.

Assessment

Make sure that the characteristics that are emphasised are those that would make the school friendly and safe for all; for example, good lighting, climate control, and enough space; caring teachers, positive discipline, and 'no bullying' policies; accessibility for students with disabilities.

Possible student teachers' responses

Student teachers will have a range of different ideas: as you circulate, ask them to explain and justify their ideas.

Extension and differentiation activities

Learning activity 2: Challenge the student teachers to come up with a graphic organiser (a visual illustration or model) that shows the relationship between teaching, learning and schools. This activity can be done in small groups rather than as a whole class.

Learning activity 4: This could be a challenging activity. Write relevant examples under each heading on the board to ensure all student teachers have access to correct information.

Learning activity 5: This could be done individually or in small groups on flipchart paper. Encourage effective teamwork by ensuring each member of the group has a designated task or focus area, for example, classroom layout, teaching and learning resources, staff, policies, drawing the infographic, labelling, and so on.

Review questions: Possible student teachers' responses

Question 1: Describe the purpose of school.

Answer: School is a place where individuals go to acquire knowledge, learn skills, and develop values that will make them productive citizens and help them grow to their fullest potential as human beings.

Question 2: What are some of the conditions that affect students' learning and development?

Answer: Hereditary endowment; physical condition of children; social situations; encouragement and motivation; a definite goal set, and a standard which a student is expected to reach; meaningful guidance and instruction; emotional condition of students; a child's readiness and preparedness for learning; proper nutrition; parent involvement.

1.3. Understanding Educational Studies

1.3.1. What is Educational Studies, and why is it important?

Expected learning outcomes

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

- Describe the field of Educational Studies and why it is important.

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 appointed subject/s for the specified grade level/s

Time: One period of 50 minutes

Learning strategies: Game; individual reading; whole class brainstorming and discussion

Preparation needed: Read Educational Studies Student Teacher Textbook Lesson 1.3.1

Resources needed: A4 paper and pens or markers

Learning activity 1: 'Connecting ideas' game (10 minutes)

1. Have student teachers stand in a circle. Explain that this is a game to brainstorm words that are associated or related, to each other.
2. Pick a word to start which is connected with education (the word 'education' is a good word to begin with).
3. The person to your left must quickly say the next word that pops into mind when he or she hears your word; the next person says a word connected with the one that was just said, and so on around the circle. You can play this competitively if you want, where if a student teacher cannot quickly think of a connected word, they must sit down.

Assessment

You will be able to make a quick, informal assessment of how much the student teachers have gained from the previous lessons and background reading material. Student teachers will also be able to peer-assess each other and express their opinions about each other's choice of words.

Possible student teachers' responses

Student teachers should be able to think of connected words although this may be limited, depending on how much they are able to recall from previous learning opportunities.

Learning activity 2: Whole class brainstorming (20 minutes)

1. After the game, explain that Educational Studies is the study of many ideas and concepts related to education, just like the many related words they just thought of in the game.
2. As a whole class, ask student teachers to brainstorm a list of questions that they have about anything related to teaching and learning.

3. You may have to help them by giving some examples:
   What do I do if I do not know the answer to a student's question?
   How can I tell if my students understand what I'm talking about?
4. Tell students that Educational Studies tries to answer these important questions by drawing on what we know from other disciplines such as philosophy and psychology. Ask student teachers to individually read Sub-unit 1.3 in their textbooks.

Assessment

The complexity of questions that student teachers ask will inform your assessment. If they are unable to come up with questions or if their questions are basic, you will need to take things more slowly and further simplify the ideas. If they have more complex questions, you may be able to raise the level of your teaching.

Self-assessment: Give student teachers a chance to answer the questions or ask them to research answers for homework. Do not feel that you need to give an immediate answer yourself.

Possible student teachers' responses

Reponses will vary greatly. Do not feel under pressure to provide an immediate answer. The main point is that studying Educational Studies helps us understand research about teaching and learning, and encourages us to think about our own approaches. This, in turn, impacts how we teach in our classrooms.

Learning activity 3: Whole class discussion (20 minutes)

1. Lead a discussion to help student teachers see how the theories they will learn in Educational Studies (whether philosophical, sociological or psychological) are applied in an education system or in their classrooms.
2. Some examples are given in the sub-unit – can they come up with any others? You can link this back with the statements about education in Sub-unit 1.1. For example, if you believe that 'Education is the development of good moral character' like Johann Frederick Herbart, what would that look like in the classroom?

3. You may wish to draw a simple visual illustration on the board or on flipchart paper of examples of how beliefs about education are applied in real-life school systems or classrooms:

    - Belief that education is a right for all children → No school fees
    - Belief that children learn best by doing things → Experiments and interactive activities in the classroom
    - Realisation that many students speak a different language at home than at school → Extra language support in the classroom
    - Understanding that young children developmentally have shorter attention spans → Use of different learning activities in the classroom

Assessment

Formatively assess the extent to which student teachers are able to recall educational theories and match these to the reality of a school or the classroom. Use this assessment to inform your future teaching of this topic: it is probable that you will need to direct student teachers to further reading material or ask them to review the material in the Student Teacher Textbook.

Homework assignment: Ask student teachers to read Sub-unit 1.4 in their textbooks before the next class period.

Possible student teachers' responses

This activity may be difficult for student teachers at this point in their studies. Do not be surprised if you need to provide many of the examples. The most important is that they understand that educational theories and research has important applications in real life.

Extension and differentiation activities

Learning activity 1: Play an example round. Give student teachers more time to think if necessary. It may be necessary to split the class into groups after a demonstration – this gives the student teachers ownership of the game and gives them practice in facilitating an activity.

Learning activity 2: If you have student teachers who struggle to read the textbook individually or who read very slowly, you can read Sub-unit 1.3 aloud in class, asking for volunteers.

Learning activity 3: Use the first half of the examples given in the instructions above and ask student teachers to suggest what this means in the classroom. For example, give them the theory 'Belief that education is a right for all children' and ask them how this affects what we do in the classroom.

Review questions: Possible student teachers' responses

Question 1: Why should student teachers study Educational Studies as a module?

Answer: Answers may vary. Educational Studies helps teachers understand the beliefs, science, and research behind how people learn throughout their lives so that they can design more effective teaching and learning experiences for their students.

Question 2: What skills needed to be fostered through education in order for students to be successful in the 21st century?

Answer: Answers may vary: Problem-solving, communication, creativity, critical thinking, collaboration.

1.4. Educational Studies in the Education College Programme

1.4.1. Why study Educational Studies in your Education College?

Expected learning outcomes

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

- Identify the purpose of the Educational Studies courses; and
- Understand the scope of content covered during Year 1 of the Education College module and the linkages between Educational Studies and other subjects.

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 appointed subject/s for the specified grade level/s
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly

Time: Two periods of 50 minutes

Learning strategies: Small group brainstorming, discussion and presentations; partner work; whole class discussion; 'exit ticket' and 'checking-in' exercises

Preparation needed: Read Educational Studies Student Teacher Textbook; familiarise yourself with the content and aims of the module

Resources needed: Flipchart paper and markers; Educational Studies Student Teacher Textbook; slips of paper (for final task)

Period 1

Learning activity 1: Warm-up activity: Small group brainstorming (15 minutes)

1. Divide the student teachers into three groups. Each group needs a piece of flipchart paper. Assign one group 'knowledge,' one group 'skills,' and one group 'attitudes.' On their flipchart paper, ask Group One to write down a list of what good teachers need to know, Group Two to list what good teachers need to be able to do, and Group Three to list what attitudes a good teacher should have. After they do this, ask one person from each group to present their list; student teachers from other groups can add to the list if they have another idea.
2. Explain that Educational Studies as a course – and their Educational Studies Student Teacher Textbook – is a tool to prepare them to be a good teacher with all the necessary knowledge, skills and attitudes.

Assessment

Assess and comment upon the fact that many of the ideas in the categories are captured in the Myanmar Teacher Competency Standards Framework.

Possible student teachers' responses

Student teachers should be able to draw upon discussions from previous lessons – in any module – to develop their ideas. They may be able to quote from the TCSF or present their own ideas.

Learning activity 2: Pair work and whole class discussion (20 minutes)

1. Ask student teachers to take some time to look through their Educational Studies Student Teacher Textbook. They should look at the table of contents and the unit and sub-unit headings. They should then make a list with the person sitting next to them about what they expect to learn in Educational Studies that year.
2. As a whole class, ask for volunteers to share some of their expectations for what they will learn.
3. Given this, what is the purpose of Educational Studies? Keep eliciting responses and clarifying until everyone understands that the purpose of the Educational Studies module is to introduce the theoretical foundations of education, child development, learning and assessment, and also how these can be applied in the classroom.

Assessment

Formatively assess student teacher's expectations of the Educational Studies course – confirm or correct their ideas about what they will learn. Assess whether student teachers make a link between the table of contents and the deeper elements of the module listed above. If they do not easily make these links, list these points clearly on the board.

Possible student teachers' responses

Student teachers should see that Educational Studies will help them better understand how children grow, develop, and learn – this knowledge will be useful in thinking about how to teach different subjects to different age groups and populations.

Check student teachers' understanding (5 minutes)

1. Have the student teachers individually read through the list of teacher competencies that they will be working to develop through the course. On a slip of paper, student teachers should write down which of the competencies they are most excited to learn more about and to practise this year?

2. As their 'exit ticket' from class, student teachers should hand you the slip of paper. Reading through these will help give you an idea of what your student teachers are most interested in and excited to learn about through Educational Studies this year.

Period 2

Learning activity 3: Check-in (10 minutes)

1. To begin the class, ask student teachers how they are feeling about Educational Studies. They should write a one-word summary on a post-it note and stick it on the board. At this point, some student teachers may be feeling 'excited' or 'relaxed' while others may be 'anxious' or 'worried.'
2. You can group similar words on the board to get an idea of the overall morale of the class. Take some time to address any questions or concerns that student teachers might have about the course.

Assessment

You can assess feelings in summary by grouping similar words together.

Possible student teachers' responses

Some student teachers may be reluctant to share their feelings, as they may not want to admit to having negative feelings. Remind them that this is an entirely anonymous exercise and nobody will be singled out to express their feelings. Also remind them that in their teaching career they will have to respond to different emotional needs in the classroom.

Learning activity 4: Small group discussion and presentations (35 minutes)

1. Number the student teachers off to form random groups of approximately five. Ask student teachers to discuss with their group members how Educational Studies connects or can help them with the other subjects they are studying. They can look through their textbooks to help them get some ideas. Assign one or two specific subjects to each group to think about the links with Educational Studies and record their key ideas on flipchart paper.

2. After small groups have had a chance to discuss, ask a person from each group to share their group's ideas about links with specific modules.

Assessment

Formatively assess and ask other student teachers to peer-assess the groups' ideas of how Educational Studies is linked to other modules.

Possible student teachers' responses

Student teachers should see that Educational Studies will help them learn about theories and strategies that they might use to teach all subjects. For example, they may refer to how a certain teaching technique may be useful in Science or how a certain form of assessment may be useful in English.

Check student teachers' understanding (5 minutes)

1. It is important that all student teachers see that Educational Studies (and their other subjects) will help them develop key teacher competencies. They should also be able to make some more specific links; for example, learning to plan lessons in Educational Studies will help them plan lessons during the Practicum Lesson Study.

2. Instruct student teachers to read through the Unit 1 summary and answer the review questions in their notebook for homework.

Extension and differentiation activities

Learning activities 1-4: If you have some student teachers who seem to be struggling to understand the concepts and others that are picking things up very quickly, instead of randomly assigning groups you can deliberately mix groups, so that they contain both 'less confident' and 'more confident' student teachers. Having the 'more confident' student teachers explain ideas can help both types of student teachers to learn and remember the material.

Review questions: Possible student teachers' responses

Question 1: What are some of the characteristics of an effective teacher?

Answer: An effective teacher has positive expectations for student success, is an extremely good classroom manager, and makes a difference in the lives of students by possessing the competencies to design, deliver, and assess lessons that allow students to meaningfully learn and develop skills.

Question 2: Do you agree or disagree with the following concepts of education? Why or why not?

a. Education exists not only in literature but also in any art or craft by which to earn a living.
b. Education is to develop all the beauties and all the perfections of which people are capable, in the body and the soul.
c. The end of education is the attainment of a sound mind and sound body.
d. Education is a natural, harmonious and progressive development of man's innate powers.
e. Education is the development of good moral character.
f. Education is nothing but the formation of habits.
g. Education is the development of all capacities in individuals which will enable them to control their environment and fulfill their possibilities.

Answer: Answers will vary based on student teacher opinion and personal definitions of education.

Unit Summary

Key messages

- There is no one single definition of education, and throughout history, various thinkers and educators have defined education in their own way. One of the key purposes of education is to help individuals develop a will and faculty for learning. Children or students, must learn the essentials of knowledge discovered in the past to be able to acquire further knowledge through their own efforts. They must learn not only what to think, but also how to think.

- Education may be formal or it can be informal. Formal education is consciously and deliberately planned for the purpose of training a child and the modification of behaviour. Informal education is not pre-planned or deliberate and it is not provided through institutions such as a school or specialised agency.

- Teaching is 'causing to learn.' The most fundamental principle of teaching is helping students to learn, including training them how to think and how to do things for themselves.

- Learning is a change in behaviour or knowledge that occurs as a result of an experience. Education can be organised around five fundamental types of learning or five pillars of learning, namely: (1) learning to know, (2) learning to do, (3) learning to live together, (4) learning to be, and (5) learning to transform oneself and society.

- School is a whole learning environment formed by physical, psychological and social elements. School is a place where individuals go to acquire knowledge, learn skills, and develop values that will make them productive citizens and help them grow to their fullest potential as human beings.

- At its essence, Educational Studies is about what we can understand – drawing on a range of disciplines including philosophy, sociology, and psychology – about how people develop and learn throughout their lives. This understanding can help us to design more effective education systems and more effective lessons that results in positive learning outcomes for all students.

- The purposes of this Education College Educational Studies course are:

    - To introduce you with foundations of education and the basic concepts of theories related to all aspects of educational practices; and
    - To facilitate how these concepts can be applied in teaching and learning situations and to make a link between educational theories and practice in order to help you develop into a qualified teaching professional.

Unit reflection

As you begin this Educational Studies module, it is a good time to stop and consider your goals for the module:

- How will you make sure you learn everything you need to in Year 1 of this learning area?
- What are some ways you can try to apply what you have learned?

What kind of teacher do you want to be, and how can Educational Studies (and your other Education College subjects) help prepare you to be that kind of teacher?

Further reading

1.1.

Bass, R. V., & Good, J. W. (2004). Educare and Educere: Is Balance Possible in the Education System? *The Educational Forum, 68, 161–168. Retrieved from* https://files.eric.ed.gov/fulltext/EJ724880.pdf

Dhiman, O. P. (2008). *Foundations of Education.* APH Publishing Corporation.

Hoffer, E. (1973). *Reflections on the Human Condition.* New York: Harper & Row Publishers.

Kumar, S., & Ahmad, S. (2008). *Meaning, aims, and process of education*. Retrieved from https://sol.du.ac.in/SOLSite/Courses/UG/StudyMaterial/16/Part1/ED/English/SM-1.pdf

White, J., & Dalli, C. (Eds.). (2017). *Under Three-Year-Olds in Policy and Practice*. Singapore: Springer.

1.2.

Chowdary, S. B. J. R. (2004). *Mastery of Teaching Skills.* New Delhi: Discovery Publishing House.

Lakshmi, D. (2004). *Basic Education.* New Delhi: Discovery Publishing House.

UNESCO. (1996). *Learning: The treasure within: A report to UNESCO of the International Commission on Education for the twenty-first century.* Paris.

Wong, H. K., & Wong, R. T. (2005). *The First Days of School: How to be an Effective Teacher.* Singapore: Harry K. Wong Publications, Inc.

1.3.

Bartlett, S., & Burton, D. (2016). *Introduction to Education Studies* (4th ed.). Sage Publishing.

1.4.

Ministry of Education Myanmar. (n.d.). *Education College Curriculum Framework for 4-Year Degree*. Yangon.

Unit 2

Pedagogical Theory and Practice

The content of Unit 2 is foundational for the study of education and its application for teaching and learning. In this unit, student teachers will focus on pedagogy – the theory and practice of education.

Student teachers will be introduced to a number of influential learning theories and models, and the famous education theorists who developed these models. They will also begin to think about the application of these ideas to the practice of teaching in a classroom. This unit asks student teachers to consider how different children learn and what they can do as teachers to support that learning through the use of different teaching strategies and methods.

Expected learning outcomes

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

- Define the terms ‘pedagogy’ and ‘pedagogical content knowledge’ (PCK);
- Describe teaching and learning strategies;
- Identify foundational learning theories and learning theorists;
- Explain how children naturally learn;
- Identify the action verbs for Bloom’s taxonomy’s three domains of learning;
- Relate learning principles for effective learning;
- Explain different learning styles and their impact in students’ learning;
- Relate basic learning models to local contexts;
- Draw an IPO process diagram with examples;
- Demonstrate knowledge of how young learners (5-10 years old) learn according to their developmental stage; and
- Explain the concepts and theories of: growth and development, nature and nurture, developmental domains and milestones, developmentally-appropriate tasks, the uniqueness of a child, and the child as a whole.

2.1. What is Pedagogy? What is Pedagogical Content Knowledge (PCK)?

2.1.1. Understanding pedagogy and pedagogical content knowledge

Expected learning outcomes

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

- Define the terms 'pedagogy' and 'pedagogical content knowledge' (PCK).

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 appointed subject/s for the specified grade level/s
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly

Time: Two periods of 50 minutes

Learning strategies: Matching game, individual reading, mind-mapping partner work, small group work and presentations, note-taking and summarising, whole class discussion

Preparation needed: Make two sets of cards for each group of five student teachers: one set of cards has a Basic Education module on each card; the other set has a teaching strategy on each card (these can be taken from the 'Toolbox for teaching and learning strategies' in the introduction to this guide) – teaching strategies may be repeated on more than one card.

Resources needed: Cards for the matching game, board and marker/chalk, flipchart paper and markers, Educational Studies Student Teacher Textbook

Period 1

Learning activity 1: Warm-up activity: Matching game (20 minutes)

1. Divide student teachers into groups of four or five. Hand out two sets of cards for each group – one set of the subjects taught in Basic Education and one set with different teaching strategies (some of these can be repeated). Each group should match the module with 1-2 different teaching strategies that come to mind as the most relevant and appropriate for teaching that module. Teaching strategies can be used more than once per module.
2. After all groups have matched their subjects to the strategies, facilitate a whole class discussion to compare their responses. Did most groups pick similar strategies for each module or were they different? Why did they match certain strategies with certain modules?
3. Make sure that student teachers understand that no one strategy is the 'correct' strategy for a module but making these decisions is part of a teachers' pedagogical and pedagogical content knowledge which they will be learning about during this class and the next.

Assessment

Make sure that student teachers understand that no one strategy is the 'correct' strategy for a module. Challenge them to justify their decisions.

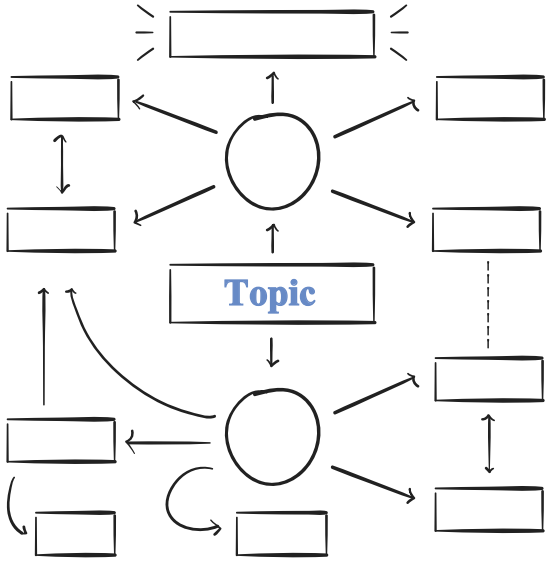
Possible student teachers' responses

Each group should be able to make some logical and justifiable matches between subjects and teaching strategies.

Learning activity 2: Pair work (20 minutes)

1. Ask student teachers to individually read the definition and explanation of pedagogy in their textbook. Once they have had a chance to read, ask student teachers to pair up and draw a mind-map of all the components of pedagogy. Pedagogy should be at the centre, and words and phrases linked to it will be things like: education, theory, teaching, assessment, learning, strategies, student background, individuals, beliefs, and values. This is not an exhaustive list, and student teachers may have more words and responses.
2. You may need to remind student teachers that a mind-map is a visual way to organise information. Here is a sample:

Figure 2.1. Mind map



Assessment

Circulate and monitor student teachers' process in making several branches of connection. Check that they are using information from previous lessons to insert relevant terminology.

Possible student teachers' responses

Student teachers should make increasingly complex links between terms and concepts. They may use the Student Teacher Textbook or their notes from previous lessons to help.

Check student teachers' understanding (10 minutes)

1. Ask pairs to share their responses and draw a whole class mind-map on the board. Student teachers should understand that pedagogy is a broad term used to describe the many things that influence our understanding of how teaching and learning take place. Pedagogy is about how we teach so that the diverse learners in our classroom – all of whom bring with them unique life stories – can learn.
2. As homework for the next class, instruct student teachers to read the section on pedagogical content knowledge (PCK) in their textbooks.

Period 2

Learning activity 3: Warm-up activity: Reading review (5 minutes)

1. Write on the board: Knowledge of teaching + Knowledge of module = Pedagogical Content Knowledge (PCK). Ask student teachers which part of the equation represents 'pedagogy' and which part represents 'content'.

Assessment

This will enable you to quickly assess how much student teacher learnt from their homework reading.

Possible student teachers' responses

Student teachers should be able to tell you, from their homework reading, that PCK is knowing how to teach specific subject – this requires understanding of how teaching and learning works as well as the content of the subject.

Learning activity 4: Small group work and presentations (40 minutes)

1. Ask student teachers to think about PCK from their own experiences with learning. They can also think back to the activity that they did last class where they matched teaching strategies with different subjects.
2. Number student teachers off into groups of four or five. With their group, they should make a four-column table on flipchart paper with examples of module knowledge, knowledge of teaching strategies, and how they come together in PCK. They can pick any modules or lesson topics. For example, a row might look like:

Table 2.2. An example of pedagogical content knowledge in a lesson

Module/lesson	Module Content Knowledge Needed	Pedagogical Knowledge Needed	PCK Needed
Physical Education lesson on football	Football rules and needed skills (ball control, and so on)	Children learn through watching adults and through trying things themselves	Lesson to include demonstration of ball control skills and chance for children to practice doing ball control drills

3. Ask groups to present one example (one row) from their posters with the class. You can correct them if they have misunderstood the idea of PCK. Once all groups have shared, ask the class what happens if a teacher does not have strong PCK? What happens if the teacher does not know the module? What happens if the teacher does not understand pedagogy/teaching strategies? Student teachers should realise that if either element is weak, students will struggle to learn accurate knowledge or gain the needed skills.

Assessment

Formatively assess whether the groups have completed each column of the grid correctly. Peer-assessment may be useful if any elements of the grid are missing or need improvement. Use the small group presentations to assess whether student teachers are able to apply their understanding of pedagogy and PCK to real life examples. You may need to give some examples.

Possible student teachers' responses

Groups should make a four-column table on flipchart paper with examples of module knowledge, knowledge of teaching strategies, and how they come together in PCK. Groups should not worry if they struggle to think of specific examples. They should, however, understand why it is so important for a teacher to have strong PCK. They should be able to see that PCK includes *how* to teach and *what* to teach.

Check student teachers' understanding (5 minutes)

1. To end the class, have student teachers write down a definition of 'pedagogy' and of 'PCK' in their notebooks. These definitions should be in their own words and written in a way that they will remember the main ideas of these key terms.

Extension and differentiation activities

Learning activity 4: If student teachers struggle to fill in the table as a small group, you can do this activity as a whole class. Be sure to think of examples in advance so you can guide the class.

Review questions: Possible student teachers' responses

Question 1: Summarise the concept of pedagogical content knowledge.

Answer: Pedagogical content knowledge (PCK) represents the blending of content and pedagogy into an understanding of how particular aspects of module matter are organised, adapted, and represented for instruction. PCK is a teacher's understanding of how to help students understand specific module matter. It includes knowledge of how particular module matter topics, problems, and issues can be organised, represented, and adapted to the diverse interests and needs of learners, and then presented for instruction. PCK is the knowledge that allows teachers to apply what they know about teaching to what they know about the module they are teaching so that students can learn.

2.2. What is Pedagogical Theory and Practice?

2.2.1. Thinking about pedagogical theory and practice

Expected learning outcomes

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

- Describe teaching and learning strategies.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role models

Time: Two periods of 50 minutes

Learning strategies: Brainstorming; reading aloud and summarising; partner discussion and partner work; whole class discussion and brainstorming; small group activity; reading quiz, exit ticket activity.

Preparation needed: Read Educational Studies Student Teacher Textbook Sub-unit 2.2

Resources needed: Board and markers/chalk, paper or notebook, textbook

Period 1

Learning activity 1: Warm-up activity: Brainstorming (10 minutes)

1. Ask student teachers to individually make a list of all the different teaching strategies they remember which their teachers using to teach them during primary and secondary school.
2. After they have made a list, ask for volunteers to share their responses, and make a list as a whole class on the board.

Learning activity 2: Reading aloud and pair discussion (20 minutes)

1. Ask for volunteers to read the first two paragraphs on Sub-unit 2.2 aloud. Make sure that student teachers understand that **pedagogical theories** are theories about how we learn and the role that student's backgrounds, interests, and individual learning needs plays in learning. Pedagogical theories impact **pedagogical practices,** which are how we teach.
2. With the person sitting next to them, student teachers should discuss all the different choices they will need to make on a daily basis as teachers. They should record their list of choices which might include things like what and how to teach, how to respond to students' questions and any behaviour issues, and how to assess what their students are learning, and more.
3. Once student teachers have discussed in pairs, you can ask for each pair to share an example of a choice they will have to make as teachers. You can then make the connection that how teachers respond to and act on these questions is their pedagogical practice.

Learning activity 3: Whole class brainstorming (10 minutes)

1. At the heart of pedagogical practice is selecting teaching strategies to use for different lessons. Write the words 'passive learning' and 'active learning' on the board. Ask the whole class to brainstorm teaching strategies that fit in each column. Passive = lecture, demonstration, and reading; Active = group discussion, practice-by-doing, and students teaching other students.
2. Inform the class that next period they will be looking more at research-based effective teaching and learning strategies. Ask them to read the remainder of Sub-unit 2.2 for homework.

Period 2

Learning activity 4: Warm-up activity: Reading quiz (5 minutes)

1. As a reading check, see if student teachers can write down at least four of the most impactful teaching strategies, according to John Hattie.

Assessment

Student teachers can self-assess their answers by re-reading the list in their textbook.

Possible student teachers' responses

Some student teachers may not be able to remember four of the strategies, other may be able to remember more. Keep a strict time limit.

Learning activity 5: Small group discussion (20 minutes)

1. Next, instruct student teachers to discuss with two people sitting next to them how they like to learn best. What types of practices and activities make them the most interested in learning?

2. Once student teachers have discussed in a small group, ask for volunteers to share their responses.
3. Spend some time discussing the list of research-based effective teaching strategies. You can ask: 'Are you surprised by anything on this list? Why? Would you expect something else to be there that is not there? Are there any that you do not understand?' The terminology that Hattie uses may be new to student teachers, so make sure they understand the concept of each strategy.

Assessment

Check that student teachers are using appropriate vocabulary. By listening to members of the class, you can adapt your teaching accordingly to incorporate the learning styles favoured by your students.

Possible student teachers' responses

Student teachers should be using the vocabulary of Hattie's teaching strategies. Remind them to do so by using the Student Teacher Textbook if they need to.

Learning activity 6: Small group drawing and discussion (15 minutes)

1. With the same two people sitting near them, ask student teachers to draw a picture or visual illustration of how a student's background might affect their experiences of school. For example, if a student is not getting enough to eat at home, he or she may have trouble concentrating. Student teachers should think about culture and language, socio-economic status, and gender, among other factors. They should capture these ideas in a visual way.
2. Ask each group to share one way that students' backgrounds or home life might affect their school experiences. You can make the point that Hattie's research shows that, while all these background factors matter a lot for student learning, teachers can still make a difference with all students.

Assessment

This is a potentially sensitive task, so assess in general terms whether the cause and effect are logically connected.

Possible student teachers' responses

Student teachers should be able to express their understanding of how various factors outside school may affect a child in school. Some student teachers may suggest that there is no such connection, in which case their independent thinking should be praised and exploited and they should be encouraged to research this theory further.

Check student teachers' understanding (10 minutes)

1. As an 'exit ticket' from class, ask student teachers to write down one teaching strategy that they find interesting and would like to try to implement with students – either in their practice teaching or future classroom.

Extension and differentiation activities

Learning activities 2 & 3: Be prepared to help student teachers with new vocabulary or give them time to use the glossary and/or dictionaries.

Learning activities 4 & 5: Encourage student teachers to express their own views about Hattie's research. What do they think has an effect on student achievement? What does not have an effect on student achievement in their opinion? They can use the library, e-library or internet to find out more about Hattie's findings on effective teaching and learning, as well as other academic research on the topic.

Review questions: Possible student teachers' responses

Question 1: How many of Hattie's teaching strategies can you remember? Can you describe the strategies? Can you give an example?

Answer: Descriptions and examples can be found in the Student Teacher Textbook Sub-unit 2.2. The strategies are:

- *Direct instruction;*
- *Note-taking and other study skills;*
- *Spaced practice;*
- *Feedback;*
- *Teaching metacognitive skills;*
- *Teaching problem-solving skills;*
- *Reciprocal teaching;*
- *Mastery learning;*
- *Concept mapping; and*
- *Worked examples.*

2.3. Foundational Learning Theories and Learning Theorists

2.3.1. Important learning theories and theorists

Expected learning outcomes

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

- Identify foundational learning theories and learning theorists.

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 appointed subject/s for the specified grade level/s

Time: Two periods of 50 minutes

Learning strategies: Reflection, individual reading and note-taking, teacher summary, Jigsaw activity and presentations

Preparation needed: Read additional resource materials on the key theorists, if available

Resources needed: Notebooks/paper, textbooks, flipchart paper and markers, additional resource materials on the key theorists, if available

Period 1

Learning activity 1: Warm-up activity: Individual reflection (10 minutes)

1. Ask student teachers to think about two or three things that they believe and/or value. These do not need to necessarily be connected to education. It could, for example, be something like 'I believe family is the most important thing.' After they have listed their beliefs and values, ask them to draw an arrow and write down how that belief or value impacts their action. For example: 'I believe family is the most important thing.' → 'I spend time with my family whenever I can. I visit my grandparents frequently.'
2. After asking for volunteers to share their examples, make the point that studying learning theories is important because the learning theories that we believe in or value, in turn affect the tools and strategies we use to support student learning.

Assessment

Accept all examples, as this is a purely personal exercise. Make the point that studying learning theories is so important because the learning theories that we believe in or value, in turn affect the tools and strategies we use to support student learning.

Possible student teachers' responses

Variable depending on personal beliefs/values.

Learning activity 2: Individual reading and note-taking (35 minutes)

1. Explain that they will be learning about three important learning theories (behaviourism, cognitivism and constructivism) and the theorist who helped to develop the theories. Ask student teachers to individually read through Sub-unit 2.3. As they read, they should take notes that:

    a. Define the theory in their own words; and
    b. List examples of what the theory often looks like in practice in the classroom.

2. Once student teachers have completed their notes, highlight the key points of each theory in simple terms.

Assessment

Circulate, assess and comment on student teachers' definitions, ability to identify the key theorists, and lists of examples of what the theory often looks like in practice in the classroom. Give positive feedback and assistance to ensure that this is a valuable learning task. Ask questions to make sure student teachers understand the difference between each theory and their implications for teaching.

Possible student teachers' responses

For each of the three foundational theories, student teachers should be able to briefly define the theory in their own words, identify the key theorists, and list examples of what the theory often looks like in practice in the classroom.

Learning activity 3: Presentation preparation (jigsaw activity) (5 minutes)

1. Divide the class into 12 groups – two groups for each of the six theorists mentioned in the unit. Each group will be finding out more about their assigned theorist and presenting to the other groups – this is called a jigsaw activity. Tell student teachers that:

a. Their presentations should be 2-5 minutes long;
b. Presentations should focus only on the most important contributions of the theorist to Educational Studies; and
c. Presentations should include a visual aid.

2. For homework, they need to meet with their group to assign roles, conduct some additional research in the library or on the internet to learn about their theorist's research, and plan their presentation. They will have only 20 minutes in the next class period to finalise their presentations.

Period 2

Learning activity 4: Presentation (jigsaw activity) (45 minutes)

1. Groups have 20 minutes to finalise their presentations on their assigned theorist. Remind groups that they cannot go over five minutes for their presentation.
2. Divide the class into two groups consisting of six presentation groups – one for each of the theorists.
3. Each group should present the most important contributions of their theorist while their classmates listen and take notes. If groups create posters for their presentations, you may wish to hang them under the wall under the appropriate learning theory – behaviourism, cognitivism or constructivism.

Assessment

You may wish to formally assess the presentations by taking notes and providing written or verbal feedback. The presentations can also be peer-assessed if you provide a peer-assessment rubric – examples of these can be found online and adapted.

For homework, ask each student teacher to write a journal reflection answering the following two questions:

a. Which learning theory do you like most? And why?
b. Which ones are appropriate with local context? Why?

Possible student teachers' responses

Student teachers should have done sufficient research in addition to the Student Teacher Textbook in order to present the most important contributions of their theorist. They may also have created visual aids.

There is no right or wrong answer to the homework questions; student teachers should explain their choices using their knowledge of the theories. You can collect the homework assignment in the next class period.

Extension and differentiation activities

Learning activity 2: Allow student teachers to use their Student Teacher Textbook and peer-assess each other's definitions.

Learning activities 3 & 4: Remind groups that this is a teamwork task and that the tasks should be divided up so that each member has responsibilities that play to his or her strengths – for example, to do the research, to create the poster or to present to the class.

Review questions: Possible student teachers' responses

Question 1: Name three key learning theorists and describe their learning theory.

Answer: The theorists studied are: Ivan Pavlov, E.L. Thorndike, and B.F. Skinner, Jean Piaget and David P. Ausible. Detailed descriptions of their theories can be found in the Student Teacher Textbook.

Question 2: What learning theory do you find the most helpful to explain the purpose and process of teaching and learning?

Answer: Student teachers' own answers based on one of the above theories.

2.4. How Children Learn

2.4.1. Children as natural learners

Expected learning outcomes

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

- Explain how children naturally learn.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
D1.1 Use evidence of students' learning to reflect on own teaching practice

Time: Two periods of 50 minutes

Learning strategies: Game; reading aloud; partner discussion; reading quiz; role play

Preparation needed: Collect several everyday, sensory items

Resources needed: Several everyday, sensory items (for the 'Senses' game), board and markers/chalk, Educational Studies Student Teacher Textbooks

Period 1

Learning activity 1: Warm-up activity: 'Using the Senses' game (20 minutes)

1. Bring in several everyday items; for example, a piece of fruit, a musical instrument, a longyi, and so on. Ask student teachers to write a description of the object using the five senses (sight, hearing, smell, taste and touch). They should be as creative and descriptive as possible so that the readers/listeners feel that they can easily see, hear, smell, taste and touch the object.
2. When they have finished ask for a few volunteers to read their descriptions aloud without stating which object they chose. The rest of the class should guess which object is being described.

Assessment

Assess and give feedback on student teachers' ability to give clear descriptions as this mirrors the ability of a teacher to give clear instructions.

Possible student teachers' responses

This will depend on the item. Encourage precision and clarity.

Learning activity 2: Partner discussion and sharing (30 minutes)

1. Explain that children discover and make meaning of the world through their five senses. Ask student teachers to talk to the person next to them about a childhood memory of learning. Do they remember experiencing the outdoors? Or another favourite game? Or their mother's cooking?
2. Ask for a few volunteers to share these early learning memories with the whole class.
3. Ask volunteers to each read a paragraph from the first section of Sub-unit 2.4, 'How do young children learn?'
4. Write on the board: 'Children learn…' With the whole class, finish the list from the reading material; student teachers should take notes in their notebook.

5. Emphasise that children are natural learners and this curiosity is something we want to preserve and nurture through education. We can help students learn by talking to them a lot about everyday things, showing them how things work, and answering their many questions.

Assessment

Homework assignment: to consolidate their learning on this topic, ask student teachers to read the section in the Student Teacher Textbook on play-based learning.

Possible student teachers' responses

Student teachers should be able to complete the list from the reading material:

- Through their senses;
- Through watching and copying people;
- Through play;
- When the learning is relevant for their lives;
- Through asking questions;
- Through direct contact with situations and objects; and
- By exploring outdoors.

Period 2

Learning activity 3: Role-play and presentation (40 minutes)

1. Group the student teachers into groups of four or five. Tell the groups that they are now in charge of a nursery school (pre-school aged children, ages 3-4). In their groups, they should design a lesson activity for the nursery school children that would help them learn something about the world through their senses (sight, smell, touch, hearing, and taste) and in a fun, playful way. They can pick any topic for their activity. The Student Teacher Textbook has some ideas.

2. Groups should have about 20 minutes to design their learning experience before role-playing it for the class. They can make simple props, if possible or just mimic the activity. One person from the group should act as the teacher, while the others are the class of nursery school students.
3. Presentations of activities need to be kept quite short (2 minutes), just long enough to get a sense of the activity and how it encourages exploration through the senses and play. Just as young children learn through play, this activity should be fun and playful.
4. After the presentations, ask volunteers from the whole class to share what they have learned about young children as natural learners.

Assessment

Give each group brief verbal feedback on their presentation. Highlight activities that could work for early primary grades and praise creativity, good planning or other strengths of the presentation. If you observe methods in the presentations that are not well-suited for young children, be sure to address these misunderstandings.

Possible student teachers' responses

Student teachers should mention many of the points from the last lesson about how children learn. They should create their own ideas, but a selection of Grade 1 textbooks may be useful for inspiration.

Check student teachers' understanding (5 minutes)

1. Ask student teachers to answer the following question on a piece of paper or in their notebooks: What is play-based learning? The answer should simply be: learning through play. Make the point that this is the best way for young children to learn.

Extension and differentiation activities

Learning activity 1: Ask student teachers to bring in or use their own objects. Present a check-list of senses so that they are reminded to use all five senses in their descriptions.

Learning activity 2: Select confident readers. Encourage contributions from student teachers of all ability, age, background and gender when completing the 'Children learn…' list. Challenge student teachers to offer reasons why everyday objects are important in a child's learning.

Learning activity 3: Provide a selection of Grade 1 Textbooks (Science or Art, for example) to show examples of the use of everyday objects. Ensure each member of the group has equal opportunities for input – one way to do this is to ask the groups to start by allocating responsibilities. The class may need to be split into two presentation groups.

Review questions: Possible student teachers' responses

Question 1: Give some examples of play-based learning.

Answer: Any of the following:

- *Playing in sand and water;*
- *Playing with dough, drawing and painting pictures, dressing up, playing with dolls;*
- *Playing ball games, dancing, running, and climbing;*
- *Building blocks, jigsaws, and shape sorters;*
- *Games; and*
- *Singing and playing simple music instruments.*

2.5. Bloom's Taxonomy

2.5.1. The three domains of learning in Bloom's Taxonomy

Expected learning outcomes

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

- Identify the action verbs for Bloom's Taxonomy's three domains of learning.

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 module matter to teach the appointed module /s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods of 50 minutes

Learning strategies: Textbook scavenger hunt, partner work

Preparation needed: Make a check-list of the action verbs in the learning outcomes of Unit 1

Resources needed: Paper and markers, Student Teacher Textbooks, notebooks

Period 1

Learning activity 1: Warm-up activity: Textbook scavenger hunt
(15 minutes)

1. In pairs, have student teachers write down the action verbs used to describe the learning outcomes for every unit of their Educational Studies Student Teacher Textbook; for example, Unit 1: provide, identify x 3, describe, and understand. They should count up the number of different time action verbs are used and come up with a list of the top 3-5. You can do this as a race, where the pair that is finished first, wins.
2. Explain that the action verbs used to describe what is expected in terms of a learning objective or outcome give an important clue about the simplicity or complexity of the task. Ordering objectives from simple to complex is a key idea of 'Bloom's Taxonomy.' You can explain that Bloom's Taxonomy includes three domains of learning with various levels.

Assessment

Check the student teachers' list against your own check-list.

Possible student teachers' responses

Student teacher should be able to find all the action verbs in Unit 1 learning outcomes, and depending on their logistical skills, be able to identify those verbs used most frequently. Note that teachers need to work efficiently with data in order to analyse summative assessments.

Learning activity 2: Pair work: Diagramming and writing learning outcomes (35 minutes)

1. Ask student teachers to individually read the section on the Cognitive Domain. They can then work with their same partner to draw a pyramid diagram in their notebooks, including the levels, description, and action verbs for the Cognitive Domain.
2. When they have completed their diagrams in pairs, they should write a learning outcome for each of the levels of the cognitive domain. They can look at the examples in the Student Teacher Textbook to help them. Student teachers have not studied learning outcomes in detail but this exercise can begin to help them think about what they want students to know and to be able to do.
3. For homework, student teachers should read about the Affective and Psychomotor Domains in their textbooks.

Assessment

The Cognitive Domain pyramid should follow the description in the Student Teacher Textbook. Student teachers' invented learning outcomes will inevitably vary – it may be worth collecting these for formal marking.

Possible student teachers' responses

Student teachers should use the example pyramid to create the Cognitive Domain pyramid based on the information in their textbook. Working in pairs, and using the verbs suggested in the Student Teacher Textbook, will help them to create learning outcomes.

Period 2

Learning activity 3: Pair work (45 minutes)

1. Ask if any student teachers have any questions about the cognitive domain. Make sure student teachers understand that Bloom's Taxonomy is a tool to think about the progression of student learning, from simple to more complex.

2. Assign the student teachers to new pairs. They will be completing the same two activities as last period but for the Affective and Psychomotor Domains:

    a. Draw a pyramid diagram of each of these two domains, including levels, description, and action verbs.
    b. Write a learning outcome for each of the level of the Affective and Psychomotor Domains.

3. Again remind student teachers that this is a first try at writing learning outcomes – they will be studying them more in Unit 4. For this exercise, they need to simply think of an example lesson topic, what they want students to know and be able to do, and what verb they would use for the different levels of the taxonomy.

Assessment

As above (Learning activity 2: Pair work: Diagramming and writing learning outcomes) but for the Affective and Psychomotor Domains.

Possible student teachers' responses

As above (Learning activity 2: Pair work: Diagramming and writing learning outcomes) but for the Affective and Psychomotor Domains.

Check student teachers' understanding (5 minutes)

1. Ensure that student teachers leave class realising that: 'Understanding Bloom's Taxonomy can help them think about how they can help students to progress from simpler learning objectives to more complex levels of learning. The action verbs for each level of each domain can help them write learning outcomes for lessons that target the appropriate level of knowledge and skills for where your students are at developmentally'.

Extension and differentiation activities

Learning activities 2 & 3: To make this task easier, do a matching activity instead. This would involve you reading a sample learning outcome (or writing it on the board) and then asking student teachers which level of the Taxonomy it fits into.

Review questions: Possible student teachers' responses

Question 1: What was the original purpose of Bloom's Taxonomy?

Answer: Bloom's Taxonomy was created as a classification system to assist the development of assessments of different categories of learning.

Question 2: How is Bloom's Taxonomy useful to you now?

Answer: The action verbs for each level of each domain can help you write learning outcomes for your lessons that target the appropriate level of knowledge and skills.

Question 3: What are the three domains of learning?

Answer: Cognitive, affective, psychomotor.

2.6. Learning Principles

2.6.1. Learning principles for effective learning

Expected learning outcomes

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

- Relate learning principles to effective learning.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model

Time: Two periods of 50 minutes

Learning strategies: Individual reading; reflection; mind-mapping; partner work; skits

Preparation needed: Prepare some examples of each of the learning principles in action

Resources needed: Paper/notebooks; board and marker/chalk; Educational Studies Student Teacher Textbook

Period 1

Learning activity 1: Warm-up activity: Individual reflection and sharing (15 minutes)

1. In their notebooks, ask student teachers to answer the following questions:

    a. Who has been your favourite teacher? What characteristics made him or her an effective teacher?
    b. What do you consider to be effective learning?

2. Explain that you will come back to their descriptions of their favourite teacher later in the lesson. What did they write for their definitions of effective learning?

Assessment

Ask for volunteers to share their responses and provide positive, constructive feedback on their definitions of effective learning.

Possible student teachers' responses

Responses will inevitably vary. Try to lead student teachers to link their ideas of effective learning with the characteristics of their favourite teacher.

Learning activity 2: Mind-mapping effective learning (35 minutes)

1. Ask student teachers to individually read the first section of Sub-unit 2.6 on effective learning and to make a mind-map of the words associated with effective learning.
2. After they have done this individually, complete a mind map on the board as a whole class. Student teachers can add to their personal mind-maps as you discuss. Make sure that student teachers understand that when we are talking about effective learning here it is about 'learning that is relevant for the context in which education is taking place and the end learning goals.' In today's world, that means learning that is less focused on content and more on making sense of, and applying, information in new situations.

3. Highlight that 'while effective teaching depends greatly on the local context and individual student needs, there is also much we do know from research about the principles of quality teaching and learning.'
4. If time remains in the class period, you can read together the principles of effective learning in the textbook – otherwise assign this for homework. Ask student teachers to be sure to bring back to class their descriptions of their favourite teacher.

Assessment

Remind student teachers of the mind-map they made on pedagogy earlier in Unit 2 – they can partly self-assess by comparing with that mind-map. Mind-maps should focus on how learning presents opportunities to apply information in new situations.

Possible student teachers' responses

Student teachers should use the vocabulary and ideas in the Student Teacher Textbook, and identify links between topics and concepts.

Period 2

Learning activity 3: Pair work (15 minutes)

1. Remind student teachers that the principles listed in the textbook are not the only principles for supporting effective learning but they are things that we know through the body of educational research.
2. Match student teachers up in pairs with someone they do not usually work with. For each of the six principles, the pair should come up with what one of the principles might look like when enacted in the classroom. What does the teacher need to do to put that principle into practice? They should record their examples in their notebooks.
3. Circulate while student teachers are working in order to answer questions or provide prompts. If a pair gets stuck, they can ask another pair for help – this is a collaborative exercise.

Assessment

Circulate and check that student teachers' example of a real-life situation matches one of the principles.

Possible student teachers' responses

Working in pairs, student teachers should be able to think of a real-life situation related to at least one of the principles.

Learning activity 4: Small group skits (30 minutes)

1. Have two groups of pairs join together to make a group of four. They should choose one learning principle and one example of that principle to act out for the class in a brief one-minute skit.
2. Before performing the skit, the group should state the learning principle in their own words, and then act out what it might look like when put into practice.

Assessment

As with all teamwork, ensure groups are working efficiently together and have allocated responsibilities according to the strengths of the team members. This task is as much about collaborative working as it is showing understanding of the principles of effective learning. Assess their understanding of their chosen principle by giving brief feedback. You may not be able to assess every group, so it may be necessary to devise a system of peer-assessment.

Possible student teachers' responses

Student teachers should enjoy the opportunity for a bit of acting – another essential skill for the entertaining and engaging primary school teacher. Using the preparation task at the beginning of the lesson, they should be able to illustrate one of the principles in a brief skit.

Check student teachers' understanding (5 minutes)

1. After they have watched a selection of skits, ask student teachers to revisit what they wrote about their favourite teacher and discuss: Do they think their favourite teacher followed these learning principles? Why or why not? Are there other principles for effective learning they would add to the list?
2. For homework, ask student teachers to read Sub-unit 2.7 before the next class period.

Extension and differentiation activities

Learning activities 1 & 2: Complete the reading and mind-map as a whole class if student teachers seem to need more guidance and support to understand the key ideas behind effective learning.

Learning activity 3: Note that student teachers do not need to provide an example for all the learning principles – one is sufficient as an introduction to the subsequent task – although pairs could provide further examples of other principles if they have time.

Learning activity 4: It may not be possible to perform all the skits to the whole class. Consider splitting the class into two or more groups for pairs to perform within.

Review questions: Possible student teachers' responses

Question 1: What are some characteristics of an effective learner?

Answer: An effective learner:

- *Can independently gain understanding from texts and information sources;*
- *Can create knowledge with others by undertaking a project;*
- *Can engage in dialogue with people who might have different perspectives or points-of-view;*
- *Is active and strategic;*
- *Is skilled in cooperation, dialogue, and creating knowledge with others;*
- *Is able to develop goals and plans; and*
- *Is able to monitor his or her own learning across contexts.*

2.7. Learning Styles

2.7.1. Understanding and appreciating different learning styles

Expected learning outcomes

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

- Explain different learning styles and their impact on students' learning.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly

Time: Two periods of 50 minutes

Learning strategies: Self-assessment quiz, whole class discussion, individual reading, jigsaw activity and presentations

Preparation needed: Find and print a suitable self-assessment quiz handout (many are free on the Internet; for example, at Education Planner http://www.educationplanner.org/students/self-assessments/learning-styles.shtml); read Educational Studies Student Teacher Textbook Unit 2.7

Resources needed: Quiz handout as described above; flipchart paper and markers

Period 1

Learning activity 1: Warm-up activity: Learning Styles self-assessment quiz (25 minutes)

1. There are many short quizzes available free on the internet to help assess which areas of learning styles are your strongest. There are also similar quizzes about your learning style (visual, auditory or tactile). You can make a handout with these quiz questions before class or just read them aloud to student teachers (most are quite short). Be sure to have the scoring key as well.
2. Ask student teachers to share their results. Were they surprised? How do they think they learn best? What kinds of tools are most helpful for them – for example, do they like to watch something and then try to copy it or read about it or listen to an explanation?
3. Emphasise that the main point of the understanding different learning styles is that individuals are smart in different ways.

Assessment

Largely self-assessment. You may need to assist in interpreting the results.

Possible student teachers' responses

Student teachers may be surprised or skeptical of the results. Encourage them to offer their own opinions about the reliability of such quizzes and their thoughts on the concept of multiple intelligences.

Learning activity 2: Jigsaw activity and presentations (25 minutes)

1. Divide the class into groups of 5-6 student teachers. Each group will select one type of learning styles. They will be doing a jigsaw activity where they focus on one area and the implications for teaching and learning.
2. Inform student teachers that group presentations should include:

    - A description of the core attributes of the learning styles (groups should do additional research to add to the information in the textbook) captured, along with an illustration, in a poster.
    - A short skit (2 minutes) role-playing a classroom activity that would appeal to this type of learner reflecting on a question 'How does understanding the disparity in learning styles help teachers cater the needs of the students?'

3. Groups have the rest of class and 15 minutes of the next class to plan and prepare their presentations. They will need to do some additional research in the library or on the internet and planning with their group as homework.

Period 2

Learning activity 3: Finalising and presenting learning styles/ skits
(45 minutes)

1. Each group has 15 minutes to finish preparation for their presentation/skit. Remind the class of the expectations for each presentation, listed above.
2. Ask each group to present on their area of intelligence in a 2-minute skit. If it is not clear from the skit how the activity addressed the area of intelligence, you may need to clarify.

Assessment

Provide feedback on the presentations and skits. As follow-up, you may remind student teachers to keep the idea of learning styles in mind when designing lesson plans during different courses or the Practicum.

Possible student teachers' responses

Student teachers should understand and demonstrate the characteristics of the different types of learning styles and that different learning activities can be used to appeal to individual learners.

Check student teachers' understanding (5 minutes)

1. Remind the whole class that their classrooms will be made up of unique individuals with different learning styles. So that all children can learn, it is the best to use a variety of teaching and learning strategies and activities.

Extension and differentiation activities

Invite student teachers to reflect on the feasibility of considering learning styles and promoting personalised learning in classroom settings; and consider the effective ways to cater the needs of the students in real classroom settings. They could also carry out further research on different examples and summarise their findings and own opinion in a short essay.

Review questions: Possible student teachers' responses

Question 1: What is a learning style?

Answer: Learning style is a distinctive way that an individual processes, interprets, and acquires information, knowledge or a desired skill. An individual's learning style can be shaped by different factors such as personality, physical and emotional condition and other influences such as family inheritance, social interaction and the environment, including relationships with parents, community culture and the values and practices encountered in schools.

Question 2: How do different learning styles impact on the students' learning processes and outcomes?

Answer: When students receive and process information in their preferred learning styles, they learn better, leading to achieving learning outcomes.

2.8. Basic Learning Models and Teaching Strategies

2.8.1 Learning about learning models

Expected learning outcomes

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

- Relate basic learning models to local contexts.

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 module matter to teach the appointed module /s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D1.1 Use evidence of students' learning to reflect on own teaching practice

Time: Four periods of 50 minutes

Learning strategies: Individual note-taking/graphic organisers, video analysis, whole class discussion, reading check quiz, group work and presentations

Preparation needed: Prepare to show video clips of classroom instruction[4]

Resources needed: Paper/notebooks, board and marker/chalk, Educational Studies Student Teacher Textbook, Basic Education textbooks

Period 1

Learning activity 1: Warm-up activity: Diagramming a lesson (30 minutes)

1. Ask student teachers to draw a diagram that they think the basic steps or parts, of a lesson are included. They should not refer to anything other than their own experiences and prior knowledge.
2. Student teachers should identify an introduction, main learning activities, and conclusion. They may have other details to include as well – for example, getting students interested at the beginning or presenting new concepts.
3. Explain that their diagram or outline is a basic learning model. Learning models attempt to systematically describe the process of teaching and learning. They provide a framework for what goes on in the classroom. In this lesson, they will be looking at three learning models and their implications for the teaching strategies used: Mastery Learning Model, Inquiry-based Learning Model, and Problem-based Learning Model.

Assessment

Ask for volunteers to share their thoughts and draw a basic outline or a lesson structure on the board. At minimum, guide student teachers to identify an introduction, main learning activities, and conclusion.

Possible student teachers' responses

See steps 1 and 2 above.

[4] Links to video lessons are available in the Practicum teacher's guide. See also the JICA/CREATE Project YouTube channel: https://www.youtube.com/channel/UC0pW4hIlFEAbZiN_4ez9hRA/videos Many other examples of lessons outside Myanmar exist online. These will come and go as the internet constantly evolves.

Learning activity 2: Individual reading and creating a visual (20 minutes)

1. Ask student teachers to individually read about the Mastery Learning Model. Then summarise the main points of the Mastery Learning Model, including the theory behind it and the steps in the learning cycle, by drawing a visual graphic organiser to explain the steps. The visual could either show a cycle or a repeated process.

Assessment

Circulate and check that graphic organisers relate to the steps indicated. It may be possible to instigate peer and self-assessment by showing the class an example of a student teacher's graphic organiser. Student teachers may also peer assess each other during the process.

Homework assignment: Student teachers should read about the Inquiry-based Model and draw a visual illustration of the steps in the process.

Possible student teachers' responses

Student teachers may present the information in any graphic representation they choose.

Period 2

Learning activity 3: Creating a visual (30 minutes)

1. Check to see if student teachers have their illustrations of the Inquiry-based Model. Ask them to take turns with a partner explaining their illustration.
2. Next, explain that Problem-based Learning (PBL) is a type of inquiry-based learning. Ask student teachers to follow the same steps to read about PBL and then draw a graphic organiser/visual of the key steps in PBL.

Assessment

As previous activity, but for PBL.

Possible student teachers' responses

Student teachers may present the information in any graphic representation they choose.

Learning activity 4: Whole class discussion (20 minutes)

1. Ask student teachers to have all three graphic organisers of the three models out in front of them. Explain that for any learning models there are typical teaching strategies that support that kind of learning.
2. For each model, ask the whole class if they can think of any teaching strategies that seem associated with the model. For example, they may note that Mastery Learning uses teacher presentation of content, demonstration and guided practice, and testing and feedback. You can record responses on the board in three columns (one for each learning model).

Table 2.3. Learning models

Mastery Learning	Inquiry-based Learning	PBL
• Teacher presentation of content • Demonstration • Guided practice • Testing • Feedback		

For homework, ask student teachers to read the section on teaching and learning strategies in Sub-unit 2.8.

Assessment

Assess as you complete the chart on the board. Confirm a student teacher's idea by writing it in the appropriate column. Be prepared to challenge them by asking them to rethink or justify their suggestions.

Possible student teachers' responses

Student teachers should use the information from their graphic organisers and the Student Teacher Textbook to suggest teaching strategies that fit into each of the columns.

Period 3

Learning activity 5: Warm-up activity: Reading check quiz (15 minutes)

1. For each of the teaching and learning strategies described in Sub-unit 2.8, ask student teachers to write down a short definition of what the strategy involves and if it is considered 'teacher-centred,' 'learner-centred,' or 'shared-centred.' If they can remember any of the 'pros' or 'cons' of any of the strategies, they should include those as well. The strategies are:

    a. Direct/traditional lecture;
    b. Demonstration;
    c. Hands-on/Inquiry; and
    d. Collaborative/Cooperative.

Assessment

Collect the responses to get an idea of whether student teachers understand what they read.

Possible student teachers' responses

Student teachers should be able to give a short definition. Some student teachers may be able to describe advantages and/or disadvantages of the strategies. Allow them to refer to Sub-unit 2.8 of the Student Teacher Textbook if they wish.

Learning activity 6: Video analysis (35 minutes)

1. Remind student teachers that learning models must be appropriate for the local context. Inform student teachers that, in this class, they will be watching video clips from different classrooms and identifying the teaching strategies and methods used.

2. After watching each video clip, student teachers should note down:

    a. the methods used;
    b. what seemed to work or not to work; and
    c. whether they think the lesson in the video would work well in Myanmar.

3. Before moving on to the next video, as a whole class discuss their responses to the video.

Assessment

Make your own notes as you watch the video clips and compare with student teachers' ideas. You can also ask student teachers to carry out a peer-assessment by comparing notes among themselves.

Possible student teachers' responses

Student teachers should be able to identify teaching strategies used and how effective they are. Their thoughts about whether international lessons would work in Myanmar are, of course, subjective but should create an interesting discussion about whether a lesson in a Myanmar primary school should be different to a lesson in any other country.

Period 4

Learning activity 7: Whole class discussion (5 minutes)

1. Based on the discussion from last class, ask student teachers: 'Which models and methods they think are the most effective for students in Myanmar at this point in time? Why? Do they think this would be true for all areas of the country or would it depend on factors such as the state or region and whether the school was in an urban or rural setting?'

Assessment

There are no right or wrong answers to these questions.

Learning activity 8: Small group work and presentations (45 minutes)

1. Create groups of four or five student teachers, and give each group a Basic Education Textbook from any module and any grade. Ask each group to pick a lesson from the Basic Education Textbook and brainstorm what learning models and teaching strategies they might use to teach the lesson. Groups do not need to develop a full lesson plan. They also do not need to use one model exactly.
2. Each of the groups should briefly present:

    a. Their lesson topic from the Basic Education Textbook;
    b. The teaching strategies/methods they might use to teach that lesson; and
    c. Why they think those teaching strategies are appropriate.

3. Remind student teachers that they will get more practice with planning lessons during Unit 4 and in their other classes. For homework, they should read Sub-unit 2.9 in their textbooks.

Assessment

This is an introduction to the idea of selecting appropriate teaching strategies and should be assessed accordingly. Have the groups selected appropriate teaching strategies for their chosen lesson? Circulate, provide feedback, invite student teachers to justify their choices, challenge them to consider, and compare other teaching strategies for their chosen lesson.

Possible student teachers' responses

Student teachers should use all the information and learning from previous periods to help them select appropriate teaching strategies.

Extension and differentiation activities

Many of the activities in the four periods of this lesson involve an element of personal choice in terms of presentation style. Do not be too prescriptive – give student teachers freedom to express themselves in their preferred style.

Challenge student teachers to carry out further research into the effectiveness of various learning models. Many of the models have both strong advocates and critics as to how effective the model is in boosting student achievement.

Review questions: Possible student teachers' responses

Question 1: Name and describe any of the four teaching and learning strategies studied in this unit.

Answer: Full descriptions can be found in the Student Teacher Textbook. The teaching and learning strategies are:

Direct/traditional lecture (teacher-centred)
Demonstration:
Hands-on/Inquiry (student-centred)
Collaborative/Cooperative (shared-centred)

2.9. The 'Input-Process-Output' Process

IPO or 'input-process-output', is one way to systematically analyse the different components of a system and their effects. In education, we can think about the IPO process for the entire education system or for a school or classroom system. By identifying the inputs, processes, and outputs of learning, as student teachers will do in this sub-unit, we can make adjustments to continuously try to improve the results.

2.9.1. What is IPO?

Expected learning outcomes

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

- Draw an IPO process diagram with examples.

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 module matter to teach the appointed module /s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
D1.1 Use evidence of students' learning to reflect on own teaching practice

Time: Two periods of 50 minutes

Learning strategies: Graphic organisers, partner work, whole class discussion and mapping, problem-solving exercise

Preparation needed: Board and markers/chalk, paper and notebooks, textbooks

Period 1

Learning activity 1: IPO diagrams (50 minutes)

1. To get student teachers to think about the ideas of 'inputs', 'process', and 'outputs', ask them to work in small groups with the people sitting around them to diagram, through words and drawings, simple processes from everyday life. This could be something like cooking a meal, going to the dentist, going shopping, going to a restaurant or hosting a party.
2. Explain that education can also be seen as a process. We can think about this process for the whole education system or for schools or even classrooms.
3. As a whole class, on the board or on several sheets of flipchart paper, make a diagram for the inputs, inputs, process and outputs of the entire Myanmar education system at a national level.

Assessment

Monitor in the first step to check that student teachers are including every step of their chosen process. To make them think about this, ask: 'What happens before/after x?'

The whole class IPO of Myanmar education will involve some peer-assessment as student teachers will respond to and build upon each other's ideas to create the full diagram.

Possible student teachers' responses

For the whole class diagram, inputs might include: Minister of Education (MoE) officials, teachers, administrators, students; school buildings; education policies. Process might include: curriculum, assessments, teaching strategies, and language of instruction. Outputs might include: the number or percentage of graduates (and drop-outs); qualifications and qualities of these graduates.

Period 2

Learning activity 2: Review (15 minutes)

1. With a partner, student teachers should answer the following questions, and draw a classroom level IPO diagram:

    a. What are the components of the instructional system in a classroom? *(Individual answers)*
    b. What qualities or goals do we want to produce or achieve? *(Outputs)*
    c. How can we produce the kind of quality students that we want? *(Process)*
    d. What is needed to achieve the products? *(Inputs)*

2. Ask two pairs to share their diagrams with each other and compare notes. They can make changes or additions to their diagrams based on their discussions. You should be available to answer any questions.

Assessment

This activity is peer assessed. Pairs should base their assessment on the IPO diagrams they produced in the previous period.

Possible student teachers' responses

Student teachers should be able to produce an IPO diagram on the module of the classroom. You will need to confirm the answers to questions b, c and d.

Learning activity 3: Problem-solving exercise (30 minutes)

1. Go through some output scenarios with the whole class and brainstorm solutions that could be implemented if these outputs were not desirable. For example:

    a. As a school, many of your students are dropping out after Grade 5. What could you do at the inputs or process stage to try to improve the level of retention?

b. As a teacher, you realise that many of your students are not reading as well as they should be the end of the school year. What could you do at the inputs or process stage to try to improve their reading abilities (output)?
c. As Minister of Education, you realise that your high school graduates have difficulty in higher education because of weak English skills. What could you do at the inputs or process stage to try to improve English abilities of graduates, nation-wide?

2. After providing some examples to the whole class, you can also do this activity in small groups.

Assessment

There are no right or wrong answers. A peer-assessment discussion could result in some interesting debates. Monitor to assess the effectiveness and practicality of their proposals. Alternatively, you could ask student teachers to provide written answers, and collect these in.

Possible student teachers' responses

Student teachers should be able to offer a range of solutions within their groups. They may need prompting to expand upon their ideas or consider alternatives. Possible answers:

a. As a school, many of your students are dropping out after Grade 5. What could you do at the inputs or process stage to try to improve the level of retention? *Make sure you have quality teachers, make sure the curriculum is relevant, make sure students are learning the skills they need to continue, make sure that the cost is not too high for students to continue studying.*
b. As a teacher, you realise that many of your students are not reading as well as they should be at the end of the school year. What could you do at the inputs or process stage to try to improve their reading abilities (output)? *Spend more time on practising reading during the school day, identify weak students for extra reading tuition, send reading assignments home with students and inform parents and older siblings that there help is needed.*

c. As Minister of Education, you realise that your high school graduates have difficulty in higher education because of weak English skills. What could you do at the inputs or process stage to try to improve English abilities of graduates, nation-wide? *Hire additional English teachers, introduce English clubs as extra-curriculars, spend more time in the curriculum on English.*

Check student teachers' understanding (5 minutes)

1. Student teachers should leave class realising that, by breaking down a complex system into its components, IPO can be one tool for them to analyse and reflect on what is working in their classroom or school and what needs to be adjusted.

Extension and differentiation activities

Learning activity 1: Assign small groups different parts of the process (inputs, process, and outputs) and then put together the entire diagram.

Learning activities 2 & 3: Student teachers can extend these activities by presenting their ideas in a variety of ways, for example, a map, poster or mural of the education system in Myanmar, including inputs, processes, and outputs.

Review questions: Possible student teacher responses

Question 1: Briefly describe the inputs, processes and outputs in an education system.

Answer: 'Inputs' include the students' characteristics, including their backgrounds, ability-levels, and prior education experiences, the teachers' characteristics and quality, the school facilities and equipment, instructional materials and resources, and the school and classroom culture.

The 'process' is the implementation of the curriculum, including teaching strategies used, and the way that students are evaluated and assessed.

The 'outputs' include the quality and number of graduates, including their cognitive and attitudinal qualities and skills, as well the achievement and satisfaction of the students.

2.10. Child Development

2.10.1. Important stages in child development

Expected learning outcomes

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

- Demonstrate knowledge of how young learners learn according to their developmental stage; and
- Explain the concepts and theories of: growth and development, nature and nurture, developmental domains and milestones, brain development, developmentally appropriate tasks, the uniqueness of a child, and the child as a whole.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Four periods of 50 minutes

Learning strategies: Pair and group work, whole class discussions, individual reading, journaling, photo and video analysis, timeline development, gallery walk

Preparation needed: Prepare to play video clip (online), source photos of children at different ages

Resources needed: Paper, flipchart paper, marker, board and markers/ chalk, textbooks, video clip (online), photos of children at different ages

Period 1

Learning activity 1: Warm-up activity: Being human (25 minutes)

1. Ask student teachers to draw an outline of a human figure on a piece of paper (you can draw one on the board to demonstrate). Ask them to illustrate their human with all of the aspects that make up a 'whole' person. They may think of body, mind, and spirit or physical, emotional, mental, and spiritual elements. You can give hints, if needed but there are no wrong or right answers. Student teachers should be creative and illustrate all parts of being human in any way they like.
2. Explain that the study of child development is interested in all of these aspects of being human: 1) physical development; 2) communication and language development; 3) intellectual development; and 4) social, emotional, moral and behavioural development. Understanding the way children develop can help us, as teachers, make sure our lessons are developmentally appropriate.
3. Ask for volunteers to read aloud the explanation of child development in the first section of Sub-unit 2.10. Highlight these two important points:

    a. Child development theories focus on explaining how children change and grow over the course of childhood. Such theories centre on aspects of development including social, emotional and cognitive growth.
    b. 'Growth' is the process by which cells subdivide, and it is extremely important to the development process. The term 'development' refers to the skills that a child is able to do and it is closely linked with growth.

Assessment

Ensure that student teachers understand that the task is focusing on 'being human', that is, what aspects of being human are there beyond having a human body?

Possible student teachers' responses

There are no wrong or right answers. Student teachers should be creative and illustrate all parts of being human in any way they like.

Learning activity 2: Discussion (25 minutes)

1. Ask student teachers to discuss with the person sitting next to them how they are like their family members, and how they are not. They can talk about physical traits as well as personal traits such as likes, dislikes, talents, abilities, and interests.
2. Then ask the whole class, since they have the similar genes as their family members, why they are different in certain ways? Explain that both 'nature' (our genetic make-up) and 'nurture' (our outside experiences) play a role in who we are.
3. Highlight the example in the textbook of both nature and nurture working together in brain development: 'While babies are born with key structures already in place (nature), they also need to be touched, spoken to, and stimulated (nurture) in order to fully develop'.
4. Ask: 'What other examples can you give of nature and nurture shaping development?'
5. Instruct student teachers to begin reading the section on 'Domains of Development' in the textbook and take notes on what kind of skills each domain involves. For homework, they should finish these notes and read the sections on 'The Uniqueness of Every Child' and 'Milestones in the Development of a Child'.

Assessment

Formatively assess and lead student teachers towards understanding that both genetics and life experiences influence our physical and personal traits.

Possible student teachers' responses

Student teachers might mention experiences or friends that caused them to be interested in certain things. Examples of nature and nurture shaping development might include how someone might be naturally athletic (nature), but still has to work hard and has good coaches (nurture) to excel at football. Or you might have a naturally bright student (nature) in class who does not have good teachers or internal motivation (a lack of nurture) to work hard and therefore does poorly at school.

Period 2

Learning activity 3: Warm-up activity: Reading check quiz (20 minutes)

1. Ask student teachers to, from memory, write down the four domains of development and list the key skills under each domain: 1) physical development; 2) communication and language development; 3) intellectual development; and 4) social, emotional, moral and behavioural development.

Assessment

Self-assessment: Student teachers can check in their textbook once finished. Circulate to check their work and get a sense of how carefully they are doing the reading homework and what they understand. Alternatively, you could collect and mark written answers.

Possible student teachers' responses

Possible responses include (but may be worded differently or explained using different examples):

- Physical development: Physical movements including walking, drawing, and cutting with a knife, and so on.
- Communication and language development: The ability to talk, understand what others are saying, and interpret facial expressions and body gestures. It also includes the skills of reading and writing.

- Intellectual development: The way we think and learn, including reasoning and behavior, understanding of abstract concepts such as time, and the ability to remember things.
- Emotional development: The ability to recognise, express, and manage feelings at different stages of life and to have empathy for the feelings of others. It involves learning to recognise and express feelings, understanding how and why they happen, recognising one's own feelings and those of others, developing effective ways of managing them, and having self-confidence.

Learning activity 4: Photograph analysis (30 minutes)

1. Show student teachers several pictures or photographs of children at various ages doing activities. As a class, talk about each photo. Ask student teachers to make observations about the child's development based on each photograph as well as from the section on developmental milestones in their textbook. For a child in that age group, what would they expect in terms of cognitive abilities, relationships, interests, and so on?
2. Introduce Jean Piaget's Theory of Cognitive Development as one of the best-known theories of cognitive development. According to Piaget, the cognitive development of children normally goes through four stages according to their ages: Sensorimotor (0-2 years), Preoperational (2-7 years), Concrete Operational (7-12 years), and Formal Operational (after 12 years). Do not go too deep into Piaget as it will be covered in greater depth in Semester 2 Unit 8. Just describe the main stages as listed in the table below using your own words. Student teachers should recognise that the way a child thinks changes, and so teaching strategies also need to change.
3. The table below describes the characteristics of each of Piaget's Four Stages of Development.

Table 2.4. Piaget's four stages of development

Development Stages	Ages (Year)	Key Characteristics
Sensorimotor	0-2	• Coordination of sensory input with their motor responses • Development of object permanence – children recognise objects continue to exist even when no longer visible • Inability to visualise symbolic representation
Preoperational	2-7	• Development of symbolic thought: children begin to use symbols to stand for things, for example, a piece of dough represents a cake. Language is also a way of using symbols. • Centration: A focus only on one feature of a problem • Irreversibility: The inability to visualise reversible actions • Egocentrism: The belief that everyone will see the same thing as them or have the same thoughts. • Unable to master conservation of concept due to centration, irreversibility, and egocentrism • Animism: belief that all things have lives
Concrete Operational	7-12	• Development of mental operations applied to concrete objects and events • Able to learn operations of reversibility and decentration • Master conservation of number at age 6-7, mass and length at age 7-8, and area at age 8-9 • Able to understand logic of relations: A>B, B>C, then A>C
Formal Operational	After 12	• Able to think in abstract terms and solve complex problems • Able to apply mental operation to abstractions • Able to reason and use inductive and deductive methods to prove theorems, mathematical laws as well as to derive formulae or generalizations from mathematical operations • Logical and systematic thinking is quite well developed – able to use mathematical symbols to represent abstract concepts, to relate one concept with another, as well as to make use of logic to solve mathematics problems • Enables adolescents to solve inverse operation problems such as 8÷4=?, 4×(?)=8, and other abstract problems without using concrete examples

Source: Quotes HQ, Psychology. (2018, May 25). Piaget's Theory of Cognitive Development. Online Resources for Psychology Students. Retrieved from https://www.psychologynoteshq.com/piagetstheory/

Assessment

During the photograph discussion, you will be able to make an informal judgment of the student teachers' knowledge and perceptions of child development.

Possible student teachers' responses

Student teachers should be able to draw on some previous study and personal experience to make observations. It will be clearer and easier if you address each photograph using the categories listed in step 1, above.

Period 3

Learning activity 5: Creating a development timeline and gallery walk
(50 minutes)

1. During this class period, student teachers should work in groups of three to create a poster timeline (birth to age 13) with key information on child development. Encourage groups to be creative in how they represent the milestones or ability levels along the timeline.
2. Use the last five to 10 minutes of class for groups to move around and observe their classmates' posters.
3. As homework, student teachers should read the last two sections of Sub-unit 2.10 on brain development and whole child development.

Assessment

Display the posters and check each group's poster to see if everyone has demonstrated a clear understanding of the progression of development. Encourage peer-assessment on the same basis.

If desired, you can collect and provide feedback on the timelines which will allow you to see if student teachers have an overall understanding of the progression of child development.

Possible student teachers' responses

The information included on the poster should be drawn from their textbook and any additional research you might have asked them to do as homework. It should include all domains for development.

Period 4

Learning activity 6: Video analysis (30 minutes)

1. Watch the three short videos from the Center on the Developing Child at Harvard University, available at: https://developingchild.harvard.edu/resources/three-core-concepts-in-early-development/. These videos show the effects of early experiences on brain development.
2. Ask student teachers to write down the points that stood out to them the most from each video. You can ask volunteers to share with the class after they have finished journaling.

Assessment

Write on the board the points that student teachers make so the whole class can benefit from the recap and you can refer to them if necessary. You can further assess student teachers' understanding of the key concepts by asking follow-up questions. You might also make the point that positive experiences and caring adults are crucial in early child development.

Possible student teachers' responses

The videos are in English and may be challenging. It may be necessary to watch the videos two or three times and provide a summary in Myanmar. Nevertheless, the style of the videos is quite user-friendly, and student teachers should be able to make some summary points.

Learning activity 7: Discussion (20 minutes)

1. Instruct student teachers to answer the following questions in small groups of about four (you can have them choose groups or number them off):

    a. What is meant by a 'whole child approach' to development?
    b. How can you, as a teacher, nurture the whole child in your classroom? List as many examples as you can.

2. Ask groups to share some of their examples of nurturing the whole child.

Assessment

Provide feedback, clarify points and ask follow-up questions when taking examples.

Possible student teachers' responses

Student teachers should be able to draw upon their learning from the four periods of this lesson.

Check student teachers' understanding (5 minutes)

1. End with the idea that: 'Maintaining the early childhood characteristics of playfulness, curiosity and experimentation throughout schooling is critical for children to develop collaboration, problem-solving, and goal-setting skills'.

Extension and differentiation activities

Learning activity 6: Discuss the video clips as a class or in small groups rather than have student teachers first individually write down points the important points. Use the transcripts provided on the website whether the following English audio is difficult.

Review questions: Possible student teachers' responses

Question 1: What is the basic principle of Piaget's Theory of Cognitive Development?

Answer: The basic principle is that children normally go through four stages of development according to their ages: Sensorimotor (0-2 years); Preoperational (2-7 years); Concrete operational (7-12 years); Formal operational (after 12 years).

Question 2: How can Piaget's theory be useful to us as teachers in the 21st century?

Answer: Piaget's theory can help us understand how children develop cognitively in accordance with their ages with implications for how they learn in accordance with their age and developmental stage. With an understanding of this developmental progression, you can better plan learning experiences for students of all ages and stages of development.

Unit Summary

Key messages

- Pedagogy is the study of the theory and practice of education. It is concerned with the underlying values and principles that influence our approaches to learning, teaching, and assessment. Pedagogical content knowledge (PCK) represents the blending of *content* and *pedagogy* into an understanding of how particular aspects of module matter are organised, adapted, and represented for instruction.

- Pedagogical theory or learning theory, helps us understand how concepts and topics should be taught and how we can help individuals to learn. Pedagogical practice is the strategies that teachers use to teach students.

- Teachers often draw on key elements from each of the three major learning theories:
  - **Behaviourism,** which says that learning is behavioural changes.
  - **Cognitivism,** which emphasises that learning occurs through the internal processing of information.
  - **Constructivism,** which says that we construct our knowledge of the world based on individual experiences.

- Children are born explorers and great discoverers. They naturally learn through their five senses. Children learn best when what they are learning has relevance to their own interests and concerns. They also learn by watching and copying adults and other children. Learning comes naturally when children are thoroughly engaged in the process.

- Bloom's Taxonomy in a key theoretical framework for learning that categorises learning objectives from simple to complex or from factual to conceptual across three domains of learning – cognitive, affective, and psychomotor.

- Learning style is a term used to describe the typical way that an individual processes, interprets and acquires information, knowledge or a desired skill.

- Howard Gardner, a psychologist and professor at Harvard University, observed that every human is endowed with different levels of natural potential. According to Gardner's Theory of Multiple Intelligences, human potential consists of eight forms of intelligence, namely: linguistic, logical-mathematical, visual-spatial, musical, bodily-kinaesthetic, naturalistic, interpersonal (social) and intrapersonal (self).

- A learning model is a framework that describes, step-by-step, the processes that go on in a classroom:

  - **The Mastery-based Learning Model** is based on the principle that all students can attain the lesson and unit objectives when there is appropriate instruction and sufficient time for them to learn. Activities follow a routine cycle of: review, content presentation, practice and feedback. This cycle is used first with the whole class and then repeated, as needed, with the whole class or individuals until everyone successfully achieves the objective. No student proceeds to new material until the basic material is fully mastered.
  - **In the Inquiry-based Learning Model,** students identify problems, brainstorm solutions, formulate questions, investigate, analyse and interpret results, discuss, reflect, make conclusions, and present results.
  - **Problem-based Learning (PBL)** is a student-centred, inquiry-based model in which learners engage with an authentic problem that requires further research.

- There are many different teaching strategies that can be effectively used to teach students. Some of the best known and most widely used teaching and learning strategies include:

  - Direct/traditional lecture (teacher-centred);
  - Demonstration;
  - Hands-on/Inquiry (student-centred); and
  - Collaborative/Cooperative (shared-centred).

- 'Input-process-output' is a way to think about the components of a system – for our purposes, the education or school system. Thinking about the IPO model can help us to identify the inputs and processing tasks needed to produce the desired outputs. The elements of IPO are inter-linked and inter-dependent on one another within a system framework.

- The term 'child development' encompasses a large and many-faceted area of study. Child development theories focus on explaining how children change and grow over the course of childhood. Such theories centre on aspects of development including social, emotional and cognitive growth.

Unit reflection

Strategies are selected according to the beliefs of the teacher, the needs of the student and the demands of the task. No one teaching strategy will work for every student, all the time. As a teacher, you will need to be aware of the impact that the methods you use are having on your students and adjust accordingly.

Understanding the research-based principles that underpin effective learning is a first step towards understanding what works and does not work to promote effective student learning:

- Students' prior knowledge and experiences affect their learning.
- The way students organise knowledge affects how they learn and apply what they know.
- Students' motivation makes a difference in how they learn.
- To develop true mastery, students must learn a combination of skills, practise using them, and understand when to apply what they have learned.
- Goal-directed practice, together with targeted feedback, improves the quality of students' learning.
- The social, intellectual and emotional climate of the classroom affects student learning.
- Students need to be able to monitor and adjust their own approaches to learning in order to become self-directed learners.

An individual's learning style is the product of factors such as sex, age and personality, as well as other influences such as family inheritance and the environment, including relationships with parents, community culture, and the values and practices encountered in schools. People often have a preferred learning style, and it is important to build activities into your teaching that approach tasks with a variety of learning styles in mind.

Look again at the range of teaching styles. Which of these styles do you recognise in your teacher educators? Which style works the best for you as a learner? In which style do you think you would be most comfortable teaching? Do you think different teaching styles might work more effectively in certain modules or with certain age groups?

Further reading

2.1.

Pedagogical Theory. (n.d.). Retrieved from http://edutechwiki.unige.ch/en/Pedagogical_theory

What is Pedagogical Practices. (n.d.). Retrieved from IGI Global. website: 09/20/18

Informational Literacy Group. (n.d.). Pedagogic Theory. Retrieved March 9, 2018, from https://infolit.org.uk/teaching/developing-your-teaching/pedagogic-theory/

Shulman, L. S. (1986). *Those who understand: Knowledge growth in teaching. Educational Researcher. (AERA Presidential Address).* (pp. 4–14). pp. 4–14.

Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review.,* (February), 1–22.

2.2.

Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement.* New York: Routledge.

2.3.

Center for Research on Learning and Teaching. (n.d.). Learning Theories. Retrieved from University of Michigan website: http://www.crlt.umich.edu/tstrategies/tslt

The Peak Performance Center. (n.d.). Learning Theories. Retrieved from http://thepeakperformancecenter.com/educational-learning/learning/theories/

2.4.

Beaty, J. (2012). *Skills for Preschool Teachers* (9th ed.). New York: Pearson.

Billabong International School Tirrutani. (n.d.). Primary School. Retrieved from http://billabongtiruttani.co.in/primary-school.html

The Child Development Institute. (n.d.). When Learning Comes Naturally. Retrieved July 9, 2018, from Sarah Lawrence College. website: https://www.sarahlawrence.edu/cdi/learning/when-learning-comes-naturally.html

2.5.

Ferlazzo, J. (2016). Three Good 'Bloom's Taxonomy According to…' Videos Using Movie Scenes. Retrieved from http://larryferlazzo.edublogs.org/2016/12/31/three-good-blooms-taxonomy-according-to-videos-using-movie-scenes/

Ferlazzo, J. (2009). The Best Resources for Helping Teachers use Bloom's Taxonomy in the Classroom. Retrieved from http://larryferlazzo.edublogs.org/2009/05/25/the-best-resources-for-helping-teachers-use-blooms-taxonomy-in-the-classroom/

2.6.

Eberly Center. (n.d.). Principles of Teaching and Learning. Retrieved from Carnegie Melon University. website: https://www.cmu.edu/teaching/principles/

2.7.

Haynes, K. (n.d.). Twelve Ways to Teach Using Multiple Intelligences. Retrieved from Teach Hub website: http://www.teachhub.com/12-ways-teach-using-multiple-intelligences

Slavin, R. E. (2006). *Educational Psychology: Theory and Practice* (8th ed.). New York: Prentice Hall.

2.8.

No Title. (n.d.). Retrieved from Faulty Focus website: www.facultyfocus.com/

Elementary Teaching Methods. (n.d.). Retrieved from Teach Elementary. website: www.teachelementary.org

Borich, G. D. (2007). *Effective Teaching Method-Research-Based Practice* (6th ed.). Ohio: Pearson Prentice Hall.

The Room 241 Team. (2012). Most common teaching styles used with elementary school students. Retrieved from A Blog by Concordia University-Portland. website: www.education.cu-portland.edu/blog

2.9.

Mukhopadhyay, M. (2005). *Total Quality Management in Education* (2nd ed.). New Delhi: SAGE Publications.

2.10.

Kids Matter. Emotional development. (n.d.). Retrieved from https://www.kidsmatter.edu.au/mental-health-matters/social-and-emotional-learning/emotional-development

Eggen, P., & Kauchak, D. (1999). *Educational Psychology: Windows on Classrooms.* Ohio: Merrill.

Slavin, R. E. (2006). *Educational Psychology: Theory and Practice* (8th ed.). New York: Prentice Hall.

Tassoni, P., & Beith, K. (2002). *Diploma in Child Care and Education.* Heinemann Educational Publishers.

Thomsen, S., & Ackermann, E. (2015). Whole Child Development Matters. Retrieved from https://www.edutopia.org/blog/changemakers-whole-child-development-undervalued-bo-stjerne-thomsen-edith-ackermann

UNICEF. (2001). Many Pathways of Learning. Retrieved from www.unicef.org/teachers/learner/paths.htm

Unit 3

Strategies for Effective Learning

Unit 3 covers many of the inter-related practices that are critical for quality teaching. Some of these important practices include using questions, clear communication, and feedback to support student learning. In this unit, student teachers will also learn about how to implement active, interactive and cooperative learning in their future classrooms; how to use differentiation to meet diverse student needs; and how to promote students' motivation and engagement with their own learning. Throughout Unit 3, there are practical tips for implementing strategies that will help ensure all of the diverse students in a classroom can learn effectively.

Expected learning outcomes

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

- Discuss the leading role of the teacher for supporting students to meet learning outcomes;
- Develop different levels of questioning by using Bloom's Taxonomy;
- Discuss how the teacher can communicate clearly and accurately to students;
- Examine the importance of the teacher listening to students;
- Discuss how to provide feedback to students that enhances their learning;
- Describe techniques for engaging students in effective learning;
- Compare and contrast the differences between teacher-centred and learner-centred approaches to learning;
- Apply adjustment mechanisms in teaching and learning situations;
- Provide positive feedback to each other in demonstration;
- Identify the advantages of motivation for effective learning; and
- Explain the importance of student engagement.

3.1. Questioning and Leading Learning

Questions can be an important tool for learning in the classroom. As a teacher, you can use questions to engage students at the beginning of the lesson, to ask them to connect to prior learning, to spark new ideas, and to check for understanding. In this unit, you will learn how you can support or scaffold, your students' understanding through questions based on Bloom's Taxonomy.

3.1.1. How to lead learning by using questions

Expected learning outcomes

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

- Discuss the leading role of the teacher for supporting students to meet learning outcomes; and
- Develop different levels of questioning by using Bloom's Taxonomy.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Four periods of 50 minutes

Learning strategies: Think-group-share; teacher summary; small group work; 'carousel' activity

Preparation needed: Access to Powerpoint and shared online folder with document for sharing class discussions/conclusions (optional, see lesson instruction), create posters with six levels of Bloom's taxonomy,

Resources needed: Powerpoint or whiteboard/blackboard, projector, posters with six levels of Bloom's taxonomy, six different coloured markers (one per poster), masking tape, copies of primary textbooks

Period 1

Learning activity 1: Introduction (15 minutes)

1. Invite student teachers to reflect individually at the beginning of the period, writing down their thoughts to the following questions:

    a. Why do we ask questions in the classroom?
    b. What types of questions are there?
    c. What types of questions can be asked to determine if your students have learned what you are trying to teach them?

2. After 10 minutes of reflection, review the learning objectives with the student teachers. Ask them to write down these objectives as well as you will refer to them in a later period.

Learning activity 2: Group discussion and synthesis (15 minutes)

1. Instruct student teachers to organise themselves into groups of four. They should assign each person a role: Moderator, timekeeper, secretary and presenter. You may choose to assign different roles but it is important to model effective group work.

2. They will have about 10 minutes to share ideas and develop synthesised answers to the questions that they reflected on at the beginning of class.

Learning activity 3: Class share (20 minutes)

1. Ask a student to be the 'secretary' for this activity and project a document that will be shared with the whole class as a record of their ideas.
2. Instruct the student teachers that the presenter of each group has 1 minute to share 1 idea for each question. The presenters should provide new ideas, avoiding repetition of ideas already shared. The secretary will type the answer into the document. (The secretary can also record on flipchart paper if a laptop is not available).
3. The presenters will each share their ideas. Once each presenter has shared, open-up the floor for any additional ideas to complement the shared document.

Assessment

Assess groups' answers against the possible responses below, plus the information in Sub-unit 3.1 of the Student Teacher Textbook.

Homework assignment: If they have not already done so, and to complement their learning, ask student teachers to read Sub-unit 3.1 in advance of the next period.

Possible student teachers' responses

Why do we ask questions in the classroom? These answers will vary but common answers may be: To make sure students are paying attention and learning the information, to evaluate, to activate prior knowledge, to engage learners, and so on.

What types of questions are there? These answers could vary greatly, especially if the students have not yet read Sub-unit 3.1 of their textbook. Answers may go the route of closed or open-ended questions or they may address level of difficulty or they may mention Bloom's taxonomy from the previous unit.

What types of questions can be asked to determine if your students have learned what you are trying to teach them? Again, these answers will vary depending on the experiences of the student teachers.

Period 2

Learning activity 4: Review (10 minutes)

1. Open the class by asking student teachers what they remember about questions from the last class period. Some key concepts that should be highlighted include but are not limited to:

    a. Questions help to guide the learning of the students;
    b. Questions can generate interest, help to make connections and to stretch students' thinking; and
    c. Questions are key to determining if students are understanding or not.

2. Explain that in this class period, they will practice their questioning techniques.

Learning activity 5: Small group work (40 minutes)

1. Divide the student teachers into groups of about four or five by randomly numbering them off. Distribute a Basic Education Textbook (any grade or module level to each group).
2. Instruct each group to pick a lesson or topic, from the Basic Education Textbook. They need to come up with a list of questions that they might use to teach this topic. They should use a variety of questions, including but not limited to:

    a. Questions to generate student interest;
    b. Questions to check if students understand;
    c. Questions to help students think more deeply about the topic; and
    d. Questions to connect the topic with real life.

3. Once the group has generated their list of questions (after about 15-20 minutes), they should join with another group to take turns asking those group members their questions. While this is not a full micro-teaching experience, they should role play being a teacher when they ask the questions. Each group member should have a turn to ask some of the questions.

4. After both groups have asked their questions, they should exchange the papers where they wrote the questions. They should then try to identify the purpose of each question – is it to check if students understand? To connect with real life? To help them understand something more deeply?
5. Once both groups have identified the purpose of each question, they can come together again to discuss their answers. Was the purpose for each question clear? If not, you can remind student teachers that it will be most effective if they have a specific purpose for using each question.
6. Student teachers should review the content of Sub-unit 3.1 before the next class and investigate 'Bloom's Taxonomy action verbs' on the Internet (or in the library).

Period 3

Learning activity 6: Brainstorm (20 minutes)

1. Prior to the class, tape six large pieces of flipchart paper around the room. Each piece of paper should be divided into four quadrants. Each should have the name of one of the levels of Bloom's taxonomy: Remember, Understand, Apply, Analyse, Evaluate and Create.
2. As student teachers enter the classroom, number them one through six. If the class is particularly large, this activity can be doubled, so that there are 12 groups or 18 groups, making two or three sets of the Bloom's Taxonomy posters. Groups should have 3 - 6 people each.
3. Once student teachers have entered and been given a group number, provide each group a coloured marker and direct them to a poster.
4. Instruct student teachers, in their groups, to generate a list of all the action verbs that they can recall that are related to the level of Bloom's Taxonomy on the poster. This list should go in the top left quadrant of the poster. They will have five minutes and they may not refer to their notes or other resources.
5. After five minutes, have the groups check themselves using their textbook. Make sure they do not add anything to their list at this point. You may wish to have an informal competition where you ask groups to raise their hands to show how many verbs they remembered.

Stop and think

While it is good to know some verbs for each Bloom's Taxonomy Category, it is even more important to be able to apply them and defend how one uses them to reflect the effort. In reality and many discussions on Bloom's Taxonomy, it actually becomes more difficult to clearly identify verbs and activities/outputs as being a representation of a given level – especially as we get into the higher levels of thinking. (Refer back to Sub-unit 2.5 Student Textbook for more details.)

Have discussions with your students on why they think a certain learning objective, activity or assessment is more difficult than another and have them defend their understanding while others challenge it. It might help to simplify Bloom's Taxonomy and work with 4 levels of difficulty:

1. Recall knowledge: Repeat from memory what was read, seen, heard, done, and so on.
2. Comprehension: Re-express without using what was already read, seen, heard, done, and so on.
3. Application: Solve a new problem or task with an already known approach (also called transfer knowledge in pedagogy)
4. Synthesis/Create: Solve a new problem or task with a new combination of solutions or approaches

Learning activity 7: Direct instruction (30 minutes)

1. Present Bloom's Taxonomy, its six levels and examples of each. Remind student teachers that Bloom presented three domains of learning: Cognitive, Affective and Psychomotor. The levels presented here are all under the cognitive domain.
2. Explain how each level requires a higher-level of thinking from the students and thus demands greater understanding and, in the end, transfer of this understanding to a new context or situation.
3. Groups should then return to their posters to correct and add on any verbs that they are missing. Ask groups to also to be prepared to share a one-minute summary of what students are expected to do at that level of Bloom's Taxonomy.

4. Beginning with the 'Remember' group and moving up the taxonomy pyramid, ask a representative from each group to summarise the kind of thinking required at that level.
5. Ask student teachers if anyone remembers the definition of scaffolding. If not, you can prompt them to think of scaffolding as the teacher lessening the difficulty of a task by offering guidance or additional tools to the student while the student is learning a new skill. It can mean adapting a task to meet an individual students' learning needs. They will work on creating and adapting learning outcomes that fit each level of Bloom's Taxonomy in the next class.

Period 4

Learning activity 8: Carousel (30 minutes)

Stop and think

In a carousel activity, each group gets a poster paper with a different concept and different colour marker. The teacher gives instructions such as, 'write the definition.' Each group follows the instructions and then passes their poster to the next group. The teacher then asks the groups to look at the work of the other group and make any necessary corrections. The teacher then gives another set of instructions such as, 'draw a symbol to represent the concept.' Each time the group finishes, they pass the poster to the next group, who then revises the work and completes the next set of instructions. At the end, the students may be given time to walk around and review all the posters that they have created or to share each poster. You can find a description of a carousel activity in Sub-unit 3.3 of the textbook.

1. Instruct student teachers to return to the poster that they wrote on in the previous of class.
2. Next, each group (in the group of six posters) will rotate clockwise to the next poster. Instruct the group to use the same coloured marker and read the list of action words that the group before them created and make any corrections or additions to the list.

3. Instruct groups to rotate clockwise again to the next poster and repeat the process of reading the list of action verbs related to the level of Bloom's Taxonomy. This time, however, instruct them t also to write in the upper right-hand quadrant a description or summary of the cognitive process that the level demands.
4. Once again, instruct the groups to rotate. Instruct them to look over the poster and make any additions or corrections. Next instruct them to write a learning outcome in the lower left quadrant that fits the level of Bloom's Taxonomy that is on the poster. You can have them start, 'After the lesson, students will be able to…'
5. Instruct the groups to rotate clockwise to the next poster, read everything, make any edits or additions that they think necessary. They should then write in the lower right quadrant a question that evaluates the learning objective that is on the poster.
6. Finally, invite the student teachers to walk around the room and look at each poster reading the information that is there. If possible, ask one student to take a photo of each poster and post them to the shared online folder.

Learning activity 9: Adapting expected learning outcomes (20 minutes)

1. Ask students to pick one learning outcome statement from the posters. If they had a student who was struggling to achieve that learning outcome, how might they 'scaffold' instruction to help the student? Student teachers should write down 1-2 learning outcomes based on the lower levels of Bloom's Taxonomy. These can be steps towards achieving the higher levels. For example, *'if the student is struggling to analyse, evaluate or create, can you write a learning outcome that ask him or her to remember or understand?'*
2. Once they have adapted the learning outcome individually, they can compare with a person sitting next to them.
3. Finally, assign student teachers to answer the following questions and submit their responses in the next period:

    a. List some of the purposes of questioning in the classroom.
    b. Name the six levels of Bloom's Taxonomy and provide 2 additional action verbs for each level that are not provided in this unit.
    c. Explain 'scaffolding' and how it relates to questioning in the classroom.
    d. Do you agree with the six levels proposed in the revised version of Bloom's Taxonomy? In other words, do you agree that each level is a prerequisite for the next level or levels?

4. Student teachers should also read Sub-unit 3.2 in advance of the next period.

Assessment

Collect the student teachers' written answers and mark according to the answers below.

Possible student teachers' answers

a. List some of the purposes of questioning in the classroom: *To generate student interest, to check if students understand, to help students think more deeply about the topic or to connect the topic with real life.*
b. Name the six levels of Bloom's Taxonomy and provide 2 additional action verbs for each level that are not provided in this unit: *Remember, Understand, Apply, Analyse, Evaluate and Create.*
c. Explain 'scaffolding' and how it relates to questioning in the classroom. *The idea of 'scaffolding' is important in thinking about how you can adjust or adapt, your teaching and learning activities to make sure that all students, regardless of their backgrounds or ability levels, can learn. This may mean asking different types of questions, and questions that target different levels of Bloom's Taxonomy.*
d. Do you agree with the six levels proposed in the revised version of Bloom's Taxonomy? In other words, do you agree that each level is a prerequisite for the next level or levels? *Responses may vary. Some critics do not think that learning progresses from one level to the next as depicted in the taxonomy.*

Check student teachers' understanding (5 minutes)

1. Ask student teachers to tell you the key points of these four periods: addressing the needs of all students by asking questions in the classroom and adapting learning activities.
2. Encourage student teachers to continuously be thinking about how to use questions to help individual students learn. They should also be continuously reflecting on how they can adapt and vary teaching and learning activities so that all types of students can learn.

Extension and differentiation activities

Students may struggle with the activity of adapting learning outcomes based on the levels of Bloom's Taxonomy. If this is the case, you may wish to pair stronger student teachers with those who are struggling – they can help each other.

Review Questions: Possible student teachers' responses

Question 1: List some of the purposes of questioning in the classroom.

Answer: To generate student interest, to check if students understand, to help students think more deeply about the topic or to connect the topic with real life

Question 2: Name the six levels of Bloom's Taxonomy and provide 2 additional action verbs for each level that are not provided in this unit.

Answer: Remember, Understand, Apply, Analyse, Evaluate and Create.

Question 3: Explain 'scaffolding' and how it relates to questioning in the classroom.

Answer: The idea of 'scaffolding' is important in thinking about how you can adjust or adapt, your teaching and learning activities to make sure that all students, regardless of their backgrounds or ability levels, can learn. This may mean asking different types of questions, and questions that target different levels of Bloom's Taxonomy.

Question 4: Do you agree with the six levels proposed in the revised version of Bloom's Taxonomy? In other words, do you agree that each level is a prerequisite for the next level or levels?

Answer: Responses may vary. Some critics do not think that learning progresses from one level to the next as depicted in the taxonomy.

3.2. Communicating with Students

For each student in a classroom to learn well requires clear communication, where the teacher delivers messages in a way that each student can easily understand, and where listening is valued on both sides of the relationship. It will be your job, as the teacher, to manage these lines of communication and to model effective practices. In this sub-unit, you will learn some effective communication strategies, including ones that can help you set clear goals and provide the feedback that your students need in order to learn.

3.2.1. Effective communication in the classroom

Expected learning outcomes

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

- Discuss how the teacher can communicate clearly and accurately to students;
- Examine the importance of the teacher listening to students; and
- Discuss how to provide feedback to students that enhances their learning.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly

D1.1 Use evidence of students' learning to reflect on own teaching practice
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Four periods of 50 minutes

Learning strategies: Knowledge building, jigsaw, peer evaluation, role play

Preparation needed: Create a rubric that contains all five elements of effective communication (you can use the rubrics submitted in Period 2 to create this 'master' rubric).

Access to Powerpoint or whiteboard/blackboard; prior to period 2, get three pairs of volunteers to improvise a student-teacher conversation about one of the three scenarios (or another that you choose). The three scenarios are:

- A student has not been turning in his homework and the teacher needs to have a conversation with him about why this is, address the consequences of not completing homework, and look for a solution to the problem.
- A student makes a joke in class. Many other students laugh, getting the lesson off track. The teacher must correct the student's behaviour.
- The class has been learning how to add fractions with unlike denominators. A teacher gives a question for the students to try. A student raises his hand to provide the answer but the answer is incorrect. The teacher needs to help this student understand his error.

Resources needed: Powerpoint and 'master' rubric as described above; sample rubrics

Period 1

Learning activity 1: Introduction (15 minutes)

1. Collect the homework questions from the last class. Tell student teachers they have five minutes to review the key elements of effective communication as presented in the Sub-unit 3.2 reading.
2. Review the key elements of effective communication by calling on various student teachers to share answers. Write these on the board as they share.

Stop and think

Student teachers may not be familiar with a rubric. You can explain that a rubric is a scoring guide that is used to evaluate student work. Rubrics usually contain the criteria for evaluation (for example, 'Module Knowledge'), levels of achievement (for example, ranging from 'Excellent' to 'Poor'), and definitions of what the student must do to achieve that level (for example, 'demonstrate deep and accurate knowledge of the content'). It may be helpful to have some sample rubrics on hand to show student teachers.

3. Explain that the objective for today's lesson is that all student teachers can identify the elements of effective communication and break down each element into measurable characteristics. To do this, they are going to create a rubric.

Assessment

Formative assessment by nominating a range of student teachers. Write correct contributions on the board so all student teachers are able to consolidate their learning.

Possible student teachers' answers

In Step 2: Clarity, accuracy, balancing of talking and listening, body language and tone and use of other aids.

Learning activity 2: Developing a rubric (35 minutes)

1. Divide the student teachers into five groups and assign each group one of the elements of effective communication:

    a. Clarity;
    b. Accuracy;
    c. Balancing of talking and listening;
    d. Body language and tone; and
    e. Use of other aids.

2. Give groups 25 minutes to develop a four-scale rubric to evaluate the element of effective communication that they have been assigned: 4 being exemplar, 3 proficient, 2 being approaching proficiency and 1 being needs more work. 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.
3. Ask groups to bring their rubrics with them to the next class period.

Assessment

The rubrics will be self-assessed and peer-assessed in the next period. Collect the rubrics at the end of the next period and mark them.

Possible student teachers' answers

Table 3.1. A sample rubric for 'clarity'

Clarity	4 – Exemplar	3 – Proficient	2 – Approaching Proficiency	1- Needs 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.

Period 2

Learning activity 3: Communication exercise to improve rubric (30 minutes)

1. Remind student teachers of the rubrics they created last class period to evaluate one element of effective communication. Create new groups that have one person from each of the six elements of effective communication.
2. Instruct the groups to do the following:

    - Sit in a circle.
    - One person will begin and share to the person to his or her left the criteria developed for his or her assigned element of effective communication. The whole group should be listening and observing their conversation.
    - The person listening will then share one positive piece of feedback and one way that the rubric could be improved, trying to incorporate the elements of effective communication as the best he or she can at the moment.
    - For each element, there will be 2 minutes to share and 1 minute for feedback.

Assessment

This is a self-assessment and peer-assessment exercise. Your own input will also be vital for student teachers to improve their rubrics.

Possible student teachers' answers

Student teachers will share their rubrics. They should be encouraged to share their ideas and listen to their peers' ideas in order to improve their own work. They should also be encouraged to give positive, constructive feedback on their peers' work.

Learning activity 4: Revising the rubrics (20 minutes)

1. Ask groups to return to their original group and refine their rubrics based on the feedback they received during the communication exercise. They should submit their rubrics before the end of class.

2. For the last five minutes of class, ask student teachers to share how the communication felt when they were trying to be aware of the five key elements of communication. It is expected that this can be a bit awkward and unnatural in the beginning. Emphasise that practicing effective communication is the way to improve.
3. Remind student teachers to bring their revised rubrics with them for the next class.

Assessment

Homework assignment: Answer the following questions:

1. What is feed up, feedback and feed forward?
2. In the feedback that was provided in the communication activity, what elements of feed up, feedback and feed forward did you observe? Explain.

Collect the answers in the next period.

Possible student teachers' answers

1. **Feed up** is the teachers' ability to communicate a clear message about the learning goal.
   Feedback is the teacher's ability to recognise a student's progress towards the established goal or goals.
   Feed forward is the teacher's response to the needs of the students.
2. Student teachers' own answers.

Period 3

Learning activity 5: Scenario 1 (35 minutes)

1. Explain that today they will use the rubrics they designed to evaluate three different scenarios. Hand out a rubric that contains all five elements of effective communication (you can use the rubrics submitted last class to create this 'master' rubric).
2. Give student teachers five minutes to read over the five elements that the rubric will consider when evaluating the teacher's communication. You can spend some time talking about anything in the criteria that is not clear to them on the rubric.

3. The student teachers who volunteered to help will have 2-3 minutes to act out the first scenario:

A student has not been handing in his homework and the teacher needs to have a conversation with him about why, address the consequences of not completing homework and look for a solution to the problem.

4. The class will have five minutes to individually use the rubric to evaluate the communication, then have three minutes to compare with a neighbour. You can then ask a few people to share their evaluation.

Assessment

Use the collected rubrics and the answers to the questions to check whether student teachers understand the material. You can also check if most student teachers are evaluating the scenarios in a similar way, which will tell you that they understand and can apply the criteria for effective communication.

Encourage student teachers to think about how they can use rubrics to evaluate either their own or students' work, by thinking of descriptions of what is needed to meet the desired level of success.

Possible student teachers' responses

Will vary but should refer to the rubrics and the scenario.

Learning activity 6: Scenario 2 (15 minutes)

1. The student teachers who volunteered to help will have 2-3 minutes to act out the second scenario:

A student makes a joke in class. Many other students laugh, getting the lesson off track. The teacher must correct the student's behaviour.

2. The class will have five minutes to individually use the rubric to evaluate the communication, and then have three minutes to compare with a neighbour. You can then ask a few people to share their evaluation.
3. Inform the class that they will be evaluating one more scenario during the next class period and wrapping up their discussion of communication.

Assessment

As per previous activity

Possible student teachers' responses

As per previous activity

Period 4

Learning activity 7: Scenario 3 (15 minutes)

1. Ask student teachers to take out their rubrics for the last scenario.
2. The student teachers who volunteered to help will have 2-3 minutes to act out the third scenario:

The class has been learning how to add fractions with unlike denominators. A teacher gives a question for the students to try. A student raises his/his hand to provide the answer but the answer is incorrect. The teacher needs to help this student understand his/her error.

3. The class will have five minutes to individually use the rubric to evaluate the communication, and then have three minutes to compare with a neighbour. You can then ask a few people to share their evaluation.

Assessment

As previous activity.

Possible student teachers' responses

As previous activity.

Check student teachers' understanding
(Step 1: 20 minutes; Steps 2-4: 15 minutes)

1. Ask student teachers to pair up with someone sitting next to them and answer the following questions. They should not use their textbooks to answer the questions.

    a. What are the elements of effective communication?
    b. Why is it important that a teacher listen to his or her students?
    c. What is the difference between feed up, feedback and feed forward?
    d. What is an example of effective feedback? What is an example of ineffective feedback?
2. Go through the answers to the above questions as a whole class.
3. Collect the completed scenario evaluation rubrics and the questions from the student teachers.
4. Assign student teachers to read Sub-unit 3.3 for the next class.

Possible student teachers' responses

- What are the elements of effective communication? Clarity, Accuracy, Balance of Listening and Talking, Body Language and Tone, Use of other Aids.
- Why is it important that a teacher listen to his or her students? Students need to be able to ask questions and participate actively in their learning. This will allow the teacher to see if they are understanding and to identify any areas that require re-teaching. For a teacher to do this, it requires actively listening to students in a way that encourages them and lets them feel heard.
- What is the difference between feed up, feedback and feed forward?
  Feed up is the teachers' ability to communicate a clear message about the learning goal.
  Feedback is the teacher's ability to recognise a student's progress towards the established goal or goals.
  Feed forward is the teacher's response to the needs of the students.

- What is an example of effective feedback? What is an example of ineffective feedback? Answers will vary. Examples of effective feedback should be feedback that is positive and constructive, directing the students to steps they need to take. Ineffective feedback is negative and critical, without providing support towards improvement.

Extension and differentiation activities

Learning activities 1-4: Student teachers may not be familiar with a rubric. You can explain that a rubric is a scoring guide that is used to evaluate student work.

Learning activities 5-7: If a group finishes any of the tasks early, ask them to develop another scenario and examples of communication that highlight one or more of the key elements of communication.

Review questions: Possible student teachers' responses

See questions and answers in 'Check student teachers' understanding'

3.3. Active, Interactive, and Cooperative Learning

3.3.1. Designing active, interactive, and cooperative learning

Expected learning outcomes

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

- Describe techniques for engaging students in effective learning.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Four periods of 50 minutes

Learning strategies: Quick write; cooperative learning; reflection; active; interactive learning; Kahoot; feedback protocol

Preparation needed: Organisation of collaborative groups of 3 or 4; for Periods 2-4, the space needs to be organised so that each group of 12 has a space to present and 8 chairs for those assuming the role of student in the activity; for Period 4 have prepared a short multiple choice online quiz that reviews definitions of cooperative, active, and interactive learning, as well as strategies, and polls student teachers on their favourite approach (this serves more to model the tool but will also provide data on who has learned the definitions and strategies)

Resources needed: Feedback protocol, primary textbooks

Period 1

Learning activity 1: Quick write and synthesis (20 minutes)

1. Share with student teachers that the next four lessons will be dedicated to understanding cooperative, active and interactive learning.
2. Review the plan for the first lesson which will include a quick write about the various learning strategies, a synthesis of the material, and then time to work collaboratively to prepare the next classes.
3. Invite student teachers to silently write down their answers to the following questions, writing for five minutes without stopping:

    a. What is cooperative learning? What is active learning? What is interactive learning?
    b. How are they related?
    c. Create a list of as many strategies as you can for each term.

Assessment

Informally assess student teachers' understanding in a brief discussion to ensure that the definitions are clear and that they are providing examples that correctly correspond to each term. See answers below.

Possible student teachers' responses

Student teachers should understand that active learning strategies to engage students actively in learning include activities such as (but not limited to): quick write, think-pair-share, gallery walks and carousel. Interactive learning usually involves a technology element such as Khan Academy videos or blogging. Cooperative learning can also be active learning but focuses on positive interdependence with individual accountability.

Learning activity 2: Cooperative learning instructions (10 minutes)

1. Explain that over the next three lessons groups will have the chance to lead a 15-minute activity that incorporates either cooperative learning, active learning or interactive learning to teach about these three concepts. Encourage the student teachers to look for strategies not in the reading to help expand the toolkit of the entire class. They must write up their plan and a brief description of the strategy in general that they are using and how it represents the concept they have been assigned (although it might be more than one).
2. Student teachers should be assigned either active, interactive or cooperative learning. Each group should choose a topic for their activity from the primary textbook. Those that have been assigned active learning will teach during Period 2, interactive learning during Period 3, and cooperative learning during Period 4. Student teachers will only be teaching to eight other student teachers, so each group will also be assigned to a larger group that includes active, interactive and cooperative learning groups.

Learning activity 3: Group planning (20 minutes)

1. Student teachers should get with their groups and begin planning their activity. They may also use this time to decide when they will meet outside of class to finish the planning and prepare any materials that are needed for the activity.
2. At the end of the class period, thank student teachers for their work and remind them that the first groups to present will be the groups responsible for active learning.
3. Ask that the groups leading the activity in the next lesson arrive five minutes ahead of time to have everything ready to begin on time.

Assessment

Collect each group's written plan for their activity to see that they understand the ideas of active, cooperative and interactive learning.

Possible student teachers' responses

Student teachers should adapt a lesson in a primary textbook to incorporate active, interactive or cooperative learning, using the definition and examples discussed in the first learning activity of this lesson.

Period 2

Learning activity 4: Presentation of active learning activity and feedback protocol (35 minutes)

1. Have the list of groups on hand and indicate to student teachers where their 'lesson' will be so they can organise themselves accordingly as they arrive.
2. Once every group has found their place, present the dynamic for the day. They will participate in a 15-minute activity; they will follow a protocol to present feedback to the presenting group, and finally they will share with the class a short summary of the strategy used, before submitting a brief reflection to the teacher on active learning.
3. Hand out the feedback protocol (or write on the board).
4. Student teachers will all participate in (or lead) an active learning activity that helps to reinforce the concepts of Sub-unit 3.3.
5. When the 15 minutes are up, ask everyone to stop where they are and turn to the protocol. They should read the protocol and then follow it. Ask each group to choose a time keeper and a facilitator.
6. Individually, write a list of the ways in which the group successfully implemented key elements of active learning (warm feedback) and suggestions for how to improve the activity (cool feedback). (2 minutes)
7. Each participant will share one item from their list of warm feedback. (3 minutes)
8. Each participant will share one item from their list of cool feedback. (3 minutes)

9. The presenters will have 2 minutes to react to the feedback (for example, why they made certain decisions, what about the feedback was particularly helpful, and so on.)

Learning activity 5: Whole class sharing (10 minutes)

1. One participant from each group of 12 will summarise the active learning strategy applied within their group and highlight some of the warm feedback shared and some suggestions that the group made to improve its effectiveness.
2. Collect the presenters' written plans.

Assessment (Learning activities 4 & 5)

This is a peer-assessment exercise. Collect each group's written plan to formatively assess continued understanding of the planning process and the use of appropriate learning strategies.

Possible student teachers' responses (Learning activities 4 & 5)

Student teachers should provide specific feedback related to the effectiveness of the strategies and how it could be improved, following the feedback protocol.

Check student teachers' understanding (5 minutes)

1. Thank student teachers for their work and remind them that the next groups to present will be the groups responsible for interactive learning.
2. Ask that the groups leading the activity in the next lesson arrive 5 minutes ahead of time to have everything ready to begin on time.
3. Student teachers should answer the following reflection before leaving the class. They should turn it into the teacher as they leave: Did the active learning strategy help you to better understand active, interactive and collaborative learning? What characteristics of active learning did you see at play that particularly supported your own learning?

Period 3

Learning activity 6: Presentation of interactive learning activity and feedback protocol (35 minutes)

1. Have the list of groups on hand and indicate to student teachers where their 'lesson' will be so they can organise themselves accordingly as they arrive.
2. Once every group has found their place, welcome the group and present the dynamic for the day. They will participate in a 15-minute activity, they will follow a protocol to present feedback to the presenting group and finally they will share with the class a short summary of the strategy used before submitting a brief reflection to the teacher on active learning.
3. Student teachers will all participate in (or lead) an interactive learning activity that helps to reinforce the concepts of Sub-unit 3.3.
4. As student teachers are participating in the previous activity, pass out the protocol.
5. When the 15 minutes are up, ask everyone to stop where they are and turn to the protocol. They should read the protocol and then follow it. Ask each group to choose a time keeper and a facilitator.
6. Individually, write a list of the ways in which the group successfully implemented key elements of interactive learning (warm feedback) and suggestions for how to improve the activity (cool feedback). (2 minutes)
7. Each participant will share one item from their list of warm feedback. (3 minutes)
8. Each participant will share one item from their list of cool feedback. (3 minutes)
9. The presenters will have 2 minutes to react to the feedback (for example, why they made certain decisions, what about the feedback was particularly helpful, and so on.)

Learning activity 7: Whole class sharing (10 minutes)

1. One participant from each group of 12 will summarise the interactive learning strategy applied within their group and highlight some of the warm feedback shared and some suggestions that the group made to improve its effectiveness.
2. Collect the presenters' written plans.

Assessment (Learning activities 6 & 7)

This is a peer-assessment exercise. Collect each group's written plan to formatively assess continued understanding of the planning process and the use of appropriate learning strategies.

Possible student teachers' responses (Learning activities 6 & 7)

Student teachers should provide specific feedback related to the effectiveness of the strategies and how it could be improved, following the feedback protocol.

Check student teachers' understanding (5 minutes)

1. Thank student teachers for their work and remind them that the first groups to present will be the groups responsible for cooperative learning.
2. Ask that the groups leading the activity in the next lesson arrive 5 minutes ahead of time to have everything ready to begin on time.
3. Student teachers should answer the following reflection before leaving the class. They should turn it into the teacher as they leave: How does interactive learning differ from active learning? In this experience, do you believe that interactive learning is a better option than active learning? Why or why not?

Period 4

Learning activity 8: Presentation of cooperative learning activity and feedback protocol (35 minutes)

1. Have the list of groups on hand and indicate to student teachers where their 'lesson' will be so they can organise themselves accordingly as they arrive.
2. Once every group/ student has found their place, welcome the group and present the dynamic for the day. They will participate in a 15–minute activity, they will follow a protocol to present feedback to the presenting group and finally they will share with the class a short summary of the strategy used.

3. Student teachers will all participate in (or lead) a cooperative learning activity that helps to reinforce the concepts of Sub-unit 3.3.
4. As student teachers are participating in the previous activity, pass out the protocol.
5. When the 15 minutes are up, ask everyone to stop where they are and turn to the protocol. They should read the protocol and then follow it. Ask each group to choose a time-keeper and a facilitator.
6. Individually, write a list of the ways in which the group successfully implemented key elements of cooperative learning (warm feedback) and suggestions for how to improve the activity (cool feedback). (2 minutes)
7. Each participant will share one item from their list of warm feedback. (3 minutes)
8. Each participant will share one item from their list of cool feedback. (3 minutes)
9. The presenters will have 2 minutes to react to the feedback (for example, why they made certain decisions, what about the feedback was particularly helpful, and so on.)

Learning activity 9: Whole class sharing (10 minutes)

1. One participant from each group of 12 will summarise the cooperative learning strategy applied within their group and highlight some of the warm feedback shared and some suggestions that the group made to improve its effectiveness.
2. Collect the presenters' written plans.

Assessment (Learning activities 8 & 9)

This is a peer-assessment exercise. Collect each group's written plan to formatively assess continued understanding of the planning process and the use of appropriate learning strategies.

Possible student teachers' responses (Learning activities 8 & 9)

Student teachers should provide specific feedback related to the effectiveness of the strategies and how it could be improved, following the feedback protocol.

Check student teachers' understanding (5 minutes)

1. Ask student teachers to talk to the person next to them and summarise the three types of learning they have studied and demonstrated over these four periods (active learning, interactive learning and cooperative learning).
2. Encourage student teachers to begin creating a 'toolbox' of different learning strategies that they can draw upon when they are asked to create lesson plans or activities. They may wish to keep this list in a notebook or ring binder.
3. Student teachers should read Sub-unit 3.4 and answer the following questions before the next class:

    a. What is active learning?
    b. What is interactive learning?
    c. What is cooperative learning?
    d. Choose a topic and propose an active learning strategy that could be used to help students better understand or explore the topic.
    e. Choose a topic and propose an interactive learning strategy that could be used to help students better understand or explore the topic.
    f. Choose a topic and propose a cooperative learning strategy that could be used to help students better understand or explore the topic.
    g. What are the benefits of incorporating active, interactive and cooperative learning strategies in the classroom?

Extension and differentiation activities

If sufficient technology is available in your, EC you may be able to demonstrate interactive learning by using an interactive quiz website such as Kahoot (https://kahoot.com/).

Learning activities 3, 4, 6 & 8: Remind groups that each person in their group has strengths, and they should consider these when planning their activity demonstration. Groups should be encouraged to assign roles, which may include presenter, recorder, researcher, and so on.

Review questions: Possible student teachers' responses

Question 1: What is active learning?

Answer: Active learning is the implementation of strategies 'which engage students as active participants in their learning during class time with their instructor' (University of Minnesota, n.d.).

Question 2: What is interactive learning?

Answer: Interactive learning is sometimes used interchangeably with active learning; however, some definitions consider interactive learning to include the use of computer technology and electronic media.

Question 3: What is cooperative learning?

Cooperative learning increases student motivation because it creates the opportunity for positive social interactions between students.

Question 4: Choose a topic and propose an active learning strategy that could be used to help students better understand or explore the topic.

Answer: Answers will vary; see Sub-unit 3.3 for active learning strategies.
Question 5: Choose a topic and propose an interactive learning strategy that could be used to help students better understand or explore the topic.

Answer: Answers will vary; see Sub-unit 3.3 for interactive learning strategies.

Question 6: Choose a topic and propose a cooperative learning strategy that could be used to help students better understand or explore the topic.

Answer: Answers will vary; see Sub-unit 3.3 for cooperative learning strategies.
Question 7: What are the benefits of incorporating active, interactive and cooperative learning strategies in the classroom?

Answer: Increase in student engagement and motivation; important for teaching 21st century skills

3.4. Developing Autonomy and Student-led Learning

In today's world, teachers are no longer solely dispensers of knowledge but must serve as guides or facilitators, of their students' efforts to think critically about, and apply, the massive amounts of information available to them. It is increasingly important that teachers are able to teach students the skills needed to be autonomous self-directed learners. This sub-unit will help you to think about how you can foster student autonomy as you revisit the advantages and the disadvantages of teacher-centred and student-centred approaches to teaching and learning.

3.4.1. The importance of autonomy and student ownership in learning

Expected learning outcomes

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

- Compare and contrast the differences between teacher-centred and learner-centred approaches to learning.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model

C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Four periods of 50 minutes

Learning strategies: Fishbowl debate; reflection; polling; assessment

Preparation needed: Create a poll of 10 questions based on points made in the fishbowl debate (Learning activity 2) that you would like to clarify with the student teachers

Resources needed: Flipchart paper; Primary Textbooks; Educational Studies Student Teacher Textbook

Period 1

Learning activity 1: Individual brainstorming (10 minutes)

1. Collect the homework questions from Sub-unit 3.3. As a whole class, review the definitions of teacher-centred and learner-centred approaches to learning.
2. On the board, post the following warm-up questions, and ask each student teacher to list as many arguments for each approach as they can:

    a. What are the arguments in favour of a teacher-centred approach in the classroom?
    b. What are the arguments in favour of a student-centred approach in the classroom?

3. After three to five minutes, instruct the class to stop writing. Remind student teachers that over the next four class periods they will be comparing and contrasting the differences between teacher-centred and learner-centred approaches to learning.

Assessment

This activity is peer-assessed in the following activity.

Possible student teachers' responses

Student teacher may come up with any number of arguments for each approach. They may work in pairs if necessary.

Learning activity 2: Fishbowl debate (40 minutes)

1. Explain to student teachers to get them thinking about these two approaches and their reading that they are going to participate in a debate over which approach is better.
2. The process, however, will adopt a fishbowl protocol in which there are six student teachers sitting together participating in a debate (three debating that a teacher-centred approach is better and three debating that a student-centred approach is better). The others will be seated around the debate. As they listen, they will answer the following questions:

    a. What are the arguments in favour of a teacher-centred approach?
    b. What are the arguments against a teacher-centred approach?
    c. What are the arguments in favour of a student-centred approach?
    d. What are the arguments against a student-centred approach?

3. The first six student teachers will volunteer to begin the debate - everyone will have five minutes to prepare. Once the debate begins, student teachers can 'tap out' once they have spoken. This means getting out of the seat in the middle and choosing someone from the outside to enter. A person on the outside, can also 'tap in' and change with someone on the inside who has already spoken.
4. Ask student teachers to help organise the seats and find six volunteers to get the debate started.
5. Give everyone five minutes to look over notes or use laptops or smartphones to search for additional information or arguments for the debate.
6. Have the student teachers debate for 20 minutes. The teacher should take notes on the participation of each student, as well as the points made by the class for both sides.

7. Give a time warning when there are 10 minutes remaining, five minutes remaining, and two minutes remaining.
8. Once time is up, thank student teachers for their participation. Tell student teachers they will be picking this discussion up in the next class. They should hold on to their answers to the four questions and bring them in the next class.

Assessment

Circulate and listen to the debates for a few minutes at a time, making notes when you hear interesting or important points. If necessary, extend student teachers' knowledge of the topic and debating skills by inviting them to consider their points from various angles and contexts.

Possible student teachers' responses

Student teachers should be able to identify pros and cons of both approaches but may need help to take these points a step further – think of Myanmar and international contexts, different ages of students, class sizes, level of instruction, and so on.

Period 2

Learning activity 3: Individual reflection (15 minutes)

1. Ask student teachers their opinions of the fishbowl debate exercise: Did they like the activity? Was there anything difficult about it? Ask student teachers to individually answer the following questions to reflect on the fishbowl debate activity:

    a. What questions do you still have about a teacher-centred approach versus a student-centred approach?
    b. In the debate, what arguments or comments made you think differently or were particularly intriguing to you?

2. When they are finished writing, ask student teachers to submit their reflections.

Assessment

Formatively assess, and feedback on, whether the students appreciated the student-centred approach offered by the fishbowl debate. Be prepared to answer a range of questions on this topic. You may also approach the assessment from a more student-centred point of view by asking student teachers to offer answers each other's questions.

Possible student teachers' responses

Will vary greatly. It is important at the end of the debate that student teachers recognise that there is value to both. It is about balance, choosing what is best for your own students and implementing either approach well.

Learning activity 4: Pros and cons (35 minutes)

1. With a partner, student teachers should make a 'pros' and 'cons' list for the advantages and disadvantages or teacher-centred and student-centred approaches to learning. They can set their chart for each like this:

Table 3.2. Teacher-centred approach

Teacher-centred approach	
Pros (Advantages)	Cons (Disadvantages)

2. When the pair has made a 'Pro' and 'Con' list for each approach, they should join with another pair to share their answers.
3. Come together as a class to ask if this exercise raised any new points or made them think about anything differently? Ask student teachers if they think the list of advantages and disadvantages is true for Myanmar as well? Do any of their advantages or disadvantages have to do with the local context?
4. Tell student teachers that in the next class they will be taking a poll to review the characteristics of the teacher-centred approach and the student-centred approach.

Assessment

Formatively assess by taking some suggestions and recording on the board. You may also wish to collect the pro and cons list to see if they are able to see the advantages and disadvantages of each approach.

Possible student teachers' responses

Will vary but should draw upon the discussions over the previous two periods. See Student Teacher Textbook lesson 3.4.1 for a concise summary of the advantages and disadvantages of teacher-centred and student-centred.

Period 3

Learning activity 5: Introduction (35 minutes)

1. Welcome student teachers to class. Explain that in this class, they will review characteristics of the teacher-centred approach and the student-centred approach, making use of a poll.
2. Explain that they will see a series of questions. They will answer and get to see how others answered. After all the questions have been answered, go back and clarify information.
3. The class takes the poll.
4. Project the question and results for question 1 and highlight important things to consider about this question. Student teachers may ask questions.
5. Repeat this for each of the questions from the poll.

Assessment

Briefly summarise and clarify answers to the questions.

Possible student teachers' responses

Will vary depending on the questions you set.

Learning activity 6: Discussion and homework assignment (15 minutes)

1. Ask student teachers to discuss the following:

    a. What does a teacher-centred approach look like?
    b. What does a learner-centred approach look like?

2. Ask student teachers to do the following homework assignment:

    a. Write a description of what a teacher-centred approach to teaching the content of this Sub-unit might look like. They need to write or type up their description of the lesson in as much detail as possible.
    b. Write a description of what a learner-centred approach to teaching the content of this Sub-unit might look like. They need to write or type up their description of the lesson in as much detail as possible.

3. Student teachers should bring these two descriptions with them to the next class period.

Period 4

Learning activity 7: Comparing descriptions (15 minutes)

1. Ask student teachers to take out their two descriptions of the teacher-centred and learner-centred approaches to teaching this unit. They should trade descriptions with a partner, and read through their partner's work.

2. Below the description, ask the reader to provide some observations, including the strengths and weaknesses of each approach.
3. They can then discuss their thoughts with their partner.
4. If you notice that someone has done an excellent job with the assignment, you may wish to read those descriptions aloud for the whole class.

Assessment

This is initially a peer-assessment task. You can also collect the descriptions to check if student teachers can picture and apply the differences.

Possible student teachers' responses

Will vary but should draw upon aspects of both approaches studied in the previous three periods.

Learning activity 8: Read aloud (10 minutes)

1. Remind student teachers that there are valuable elements in both teacher-led and student-led instruction. The key is finding the correct balance between the two so that all students can both learn the content and develop the skills needed to successfully contribute to society.
2. Ask for volunteers to read aloud one paragraph each of the section 'The Importance of Developing Autonomy'.

Assessment

Student teachers' knowledge from this task can be assessed by pausing occasionally to ask consolidation questions.

Possible student teachers' responses

Will vary depending on the questions but should draw on their learning from the previous periods as well as the reading texts in the Student Teacher Textbook.

Learning activity 9: Developing a 'menu' of choices (20 minutes)

1. This activity focuses on the importance of 'Choice' to help students gain more autonomy. Choice is also a good way to differentiate to meet different students' needs.
2. Number student teachers off into groups of five. Give each group a piece of flipchart paper and a primary textbook. Ask groups to pick a lesson in the primary textbook. They should then brainstorm a 'menu' of choices that students might do for a project or assignment. For example, students could create a poster, write a short essay or build a model.
3. You can collect the flipchart paper at the end of the class period. You may wish to display the posters around the room so that student teachers can get more ideas from their peers of types of choices they might offer students.
4. Remind student teachers to read Sub-unit 3.5 before the next class.

Assessment

Display the posters for peer-assessment and for your own assessment of how many different types of learner-centred tasks student teachers have shown awareness of. Feedback on this matter and add any further tasks that could be used in a learner-centred primary classroom.

Possible student teachers' responses

Student teachers should be able to list a variety of tasks that primary students could do as part of any one lesson. They could repeat the task for various lessons to show how different tasks are more relevant to different academic subjects and/or topics.

Check student teachers' understanding (5 minutes)

Ask student teachers to tell their partner their own educational experiences and how they like to learn best – whether through teacher-centred or student-centred approaches or a combination of both. Do they think changes in approaches to teaching reflect changes in today's world (for example, the availability of technology), and if so, how?

Extension and differentiation activities

Learning activities 6 & 7: Ask student teachers to search on the internet for clips that illustrate teacher-centred or learner-centred approaches to learning. They could write a short reflection about how effective the strategies seem to be in that video clip.

Review questions: Possible student teachers' responses

Question 1: What are the differences between a teacher-centred approach and a student-centred approach?

Answer: Refer to Sub-unit 3.4 for descriptions of each approach.

Question 2: What are the advantages and disadvantages of each approach?

Answer: Refer to Sub-unit 3.4 for a summary of the advantages and disadvantages of each approach.

Question 3: What is autonomy?

Answer: Henri Holec's (1981) definition of autonomy is 'the ability to take charge of one's learning' (cited in Nunan, 2003).

Question 4: Why is the development of autonomy in today's students so important?

Answer: In this information-rich world, teachers are no longer the keeper of knowledge. Students can easily access information beyond a textbook and beyond a teacher's lesson. They must learn how to take advantage of the many of resources available and to filter out the good from the bad. Teachers must also give students the skills to make sense of this information - to read, the interpret and to apply what they find.

Question 5: What are some ways the teacher can develop autonomy in students?

Answer: By setting clear goals, teaching metacognition skills, and offering choices

Question 6: Is a teacher-centred approach or a student-centred approach better for developing the autonomy of students? Explain.

Answer: Answers will vary; student teachers should be able to defend their response with sound reasoning.

Question 7: What are ways that a teacher can get to know his or her students? Why is this important?

Answer: To ensure that every student achieves the learning goals, teachers must respond to the uniqueness of each child. Thus, the teacher must get to know each student. There are many strategies for getting to know students, including: reviewing available student data; collecting information about students' interests, preferences, and abilities through a variety of planned activities throughout the school year; and engaging with students outside of the classroom.

3.5. Responding to Need and Adapting to Circumstances

Each student in your classroom is unique. For all students to be able to learn, you will need to get to know each child as an individual and to ensure that the curriculum and classroom environment allows each child to succeed. This sub-unit provides practical tips for you to have better understanding on the students in your class, adapt the curriculum as needed and provide a classroom climate that is conducive to learning.

3.5.1. Meeting individual student needs

Expected learning outcomes

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

- Apply adjustment mechanisms in teaching and learning situations.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Four periods of 50 minutes

Learning strategies: Layered or tiered curriculum; peer evaluation; mini lecture; cards with different student profiles (real or invented, no names included)

Preparation needed: Organise a document (either print or digital) with the menu of activities for each level of the tiered curriculum; create peer evaluation forms, posters for chalk talk and cards with student profiles

Resources needed: As above

Period 1

Learning activity 1: Introduction (10 minutes)

1. Just like me: Explain to the student teachers that you will read a series of statements. If the statements describe the student teacher, that individual should stand up and say, 'Just like me.' The idea is that the statements demonstrate the differences in the group and emphasise some of the things that teachers may want to consider when designing classes for their students:

    a. I have eaten within the last two hours.
    b. I slept more than 7 hours last night.
    c. I grew up in a city.
    d. I have a job outside of school.
    e. I have children.
    f. I am an only child.
    g. I like to sing.
    h. I like to dance.
    i. I like to draw.
    j. I like to work alone.
    k. I work better in groups.
    l. I have experience teaching in some capacity.
    m. I have experience with differentiated instruction.
    n. I have many questions or doubts about differentiated instruction.

2. Thank student teachers for their participation and willingness to be a bit vulnerable. Ask them how they think this warm-up activity relates to Sub-unit 3.5.

Assessment

This task is not assessed – it is intended to make students aware of the vast array of different needs that will inevitably exist in a classroom.

Possible student teachers' responses

- It is important to consider student backgrounds and interests when developing lessons;
- It is important to recognise that each student is different;
- Students come class with different experiences and thus begin at different levels with a specific learning goal; and
- Whether or not a student's basic physiological needs are being met, can impact their performance in class. Knowing this information, a teacher can better choose the most appropriate activity for the student during a particular or lesson or help the student to make a wise choice.

Learning activity 2: Adapting the curriculum (15 minutes)

1. Invite student teachers to review the information in textbook on tiered activities (a layered curriculum). They can do this with a partner.
2. Call on a few student teachers to define what tiered activities are.
3. Ask student teachers how tiered activities respond to student needs (if they did not address this in their previous responses)
4. Explain to the students that over the next few classes, they are going to participate in a tiered curriculum in which they will have the opportunity to engage with their choice of activities to delve deeper into the concepts presented in the Sub-unit 3.5 reading: Getting to know your students; Adjusting the curriculum; Adjusting the classroom environment. This will also allow them to experience this strategy which they may not have seen previously.

5. Present the tiered curriculum. For each topic, there are 4 or 5 activities to choose from. They will choose two to complete each class. Any work that is not complete, they should finish between classes. The work will be collected for each level at the beginning of the next class. Explain that in a traditional classroom, there are additional elements that might be included in the layered or tiered curriculum. For example, points could be assigned to each task in the menu and students have to choose tasks that sum up to a certain number of points. Additionally, it is feasible that all students are not on the same level at the same time and that they are working on each level over a series of days. Additionally, teachers often include some form of assessment at the end of each level. These are all tweaks or additions that could be made to this strategy when applied in a traditional classroom.
6. Give student teachers a few minutes to read over the menu. Ask them what questions they have and clarify any doubts before everyone gets started.

Assessment

Work will be assessed at the beginning of the next lesson.

Possible student teachers' responses

None as yet although student teachers may have clarification questions.

Learning activity 3: Layer 1: Getting to know your students (15 minutes)

Students will have 15 minutes of class time to work on their choice of activity from the menu.

Figure 3.1. Getting to know your students

Layer 1: Getting to know your students
ACTIVITY 1: Interview and record (in writing or by video) two people. In the first interview, ask the person to describe a teacher who took the time to really know him or her and to explain how this personal relationship played out in the classroom. What positive effects did this have on his or her learning? In the second interview, ask the person to describe a teacher who did not take the time to really know him or her and to explain a way in which the teacher did not respond to his or her learning needs because of this lack of knowledge. Write a reflection on what information you learned in the interview that you want to remember for your own teaching. **ACTIVITY 2:** Design a survey that you can give to your students during the first week of class to get to know them. Choose 3 questions from the survey and explain what decisions you might make based on answers to the question. **ACTIVITY 3:** In a school, prior to the beginning of the school year. Each teacher must meet with the teacher or teachers who taught their students the year before. In this meeting the teacher from the previous year provides a summary of each student - academic performance, strengths, areas for improvement, and so on. Write a letter to your school principal explaining why you are or are not in agreement with this activity. Consider it what ways this may help students and in what ways in might not help them or even hurt them. **ACTIVITY 4:** Create a video, infographic or song that teaches about the importance of getting to your students - what information is important to know and why it is important.

Assessment

This task will be peer-assessed at the beginning of the next lesson.

Possible student teachers' responses

Varying, depending on their choice of activity.

Check student teachers' understanding (10 minutes)

1. Ask student teachers to compare and share their ideas with their partner.
2. Remind them that at the beginning of the next class they should be prepared to submit their work.

Period 2

Learning activity 4: Peer evaluation (10 minutes)

1. As student teachers enter the classroom, pair them up and give them a peer evaluation form.
2. Instruct them to share one of the activities that they completed from Layer 1 and to evaluate the work of the other.
3. When they finish, they should submit their work and the peer evaluations.

Assessment

This is a peer-assessment task.

Possible student teachers' responses

Peer-assessments should follow the peer evaluation form.

Learning activity 5: Checking in (5 minutes)

1. Ask student teachers to share how the first set of activities went.
2. What do they observe about this activity? What might be challenging for them?
3. Remind students that while they are working in class, they can also consult their peers or the instructor.
4. Invite them to get started on the Layer 2 activities.

Assessment

This is a brief self-assessment task which will give you an impression of how student teachers are coping with these activities, and thus how much support may be required in subsequent stages.

Possible student teachers' responses

The student teachers' answers will vary.

Learning activity 6: Layer 2: Adjusting the curriculum (25 minutes)

Students will have 25 minutes of class time to work on their choice of activity from the menu.

Figure 3.2. Adjusting the curriculum

Layer 2: Adjusting the curriculum
ACTIVITY 1: Research another strategy for differentiation. Create a representation of this strategy that can be shared with the class: poster, video, Prezi or PowerPoint, written explanation, and so on. **ACTIVITY 2:** Design a lesson or activity that incorporates different reading selections based on student need. Select the readings and explain how you will decide which student is assigned each reading. How does this activity respond to individual student needs? **ACTIVITY 3:** Create 4 different activities that allow a student to practice the same learning goal. Identify the learning goal and describe each activity and what student needs each one responds to. **ACTIVITY 4:** Read the activities of this layered curriculum. Identifying a student need to which the activities do not respond. Propose an activity for each layer that responds to this need.

Assessment

This task will be peer-assessed at the beginning of the next lesson.

Possible student teacher's responses

Varying, depending on their choice of activity.

Check student teachers' understanding (5 minutes)

1. Ask student teachers to compare and share their ideas with their partner.
2. Remind them that at the beginning of the next class they should be prepared to submit their work.

Period 3

Learning activity 7: Peer evaluation (10 minutes)

1. As student teachers enter the classroom, pair them up and give them a peer evaluation form.
2. Instruct them to share one of the activities that they completed from Layer 1 and to evaluate the work of the other.
3. When they finish, they should submit their work and the peer evaluations.

Assessment

This is a peer-assessment task.

Possible student teachers' responses

Peer-assessments should follow the peer evaluation form.

Learning activity 8: Checking-in (5 minutes)

1. Ask student teachers to share how this set of activities went.
2. What do they observe about this activity? What was challenging for them?
3. Remind students that while they are working in class, they can also consult their peers or the instructor.
4. Invite them to get started on the Layer 3 activities.

Assessment

This is a brief self-assessment task which will give you an impression of how student teachers are coping with these activities and thus how much support may be required in subsequent stages.

Possible student teachers' responses

The student teachers' answers will vary.

Learning activity 9: Layer 3: Adjusting the classroom environment
(25 minutes)

1. Students will have 25 minutes of class time to work on their choice of activity from the menu.

Figure 3.3. Adjusting the classroom environment

Layer 3: Adjusting the classroom environment
ACTIVITY 1: Go to a school and take a video of a classroom (without students in it). Write a reflection on the elements of the physical environment that may need to be adjusted, why and how a teacher may make adjustments to respond to each problem. **ACTIVITY 2:** Interview a teacher about the classroom environment in which he or she teaches. Ask him or her to identify the problems that exist in the physical environment. Write a reflection on how these problems might be resolved. Extension: Share your ideas with the teacher. **ACTIVITY 3:** Create a checklist that teachers could use to assess the classroom environment and provide possible action steps for when an item or need is not being met. **ACTIVITY 4:** Survey 50 people, asking them: What is the most uncomfortable learning environment that they have ever had to be in? What made the environment uncomfortable? Write a summary of the responses and reflect on what you learned.

Assessment

This task will be peer-assessed at the beginning of the next lesson.

Possible student teachers' responses

Varying, depending on their choice of activity.

Check student teachers' understanding (5 minutes)

1. Ask student teachers to compare and share their ideas with their partner.
2. Remind them that at the beginning of the next class, they should be prepared to submit their work.

Period 4

Learning activity 10: Review questions (10 minutes)

1. As student teachers enter, invite them to move around the room and answer the questions on the posters taped to the wall. The posters will have one question per poster. The questions will be:

    a. What information should a teacher know about the students who he or she teaches?
    b. What are sources of student information and/or tools for collecting student information?
    c. What are effective strategies for adjusting the curriculum?
    d. What are effective strategies for adjusting the classroom environment?
    e. What questions do you still have about responding to need and adapting to circumstances?

2. Remind them that they can also *write* comments in reference to other people's answers, but there should not be any verbal discussion.

Assessment

This task can be self-assessed using the information in the Student Teacher Textbook Lesson 3.5.1. Student teachers will also be assessing themselves against their peers as they move around the room and review the posters.

Possible student teachers' responses

See Student Teacher Textbook Lesson 3.5.1.

Learning activity 11: Responding to student profiles (30 minutes)

1. Invite student teachers to take a seat at the desks or tables that are organised in stations so that they are sitting in groups of between four and six.
2. Explain that students are going to work in groups. They will receive three cards, each with a student profile. Together they should discuss how they might respond to the needs of the student described in the card in order to ensure that he or she is successful in meeting learning goals. Explain that they can also include a list of any additional information they would like to know about the student.
3. For each profile, go around the room and have each group share:

    a. Round 1: Additional information that they would like to know about the student.
    b. Round 2: One adjustment or consideration they would make in the planning of activities for this student and the information that supported this decision.

Assessment

This task is peer-assessed.

Possible student teachers' responses

Suggestions should draw on the information in Student Teacher Textbook Lesson 3.5.1.

Check student teachers' understanding (10 minutes)

1. Ask student teachers to further reflect on their learning experience with having a choice of activities to complete. Did they appreciate this approach? How did they select the activity that they would complete?
2. Ask them to read Sub-unit 3.6 prior to the next class.

Extension and differentiation activities

This sub-unit is already highly differentiated as it offers student teachers a menu of activities to choose from.

Review Questions: Possible student teachers' responses

Question 1: What are ways that a teacher can get to know his or her students? Why is this important?

Answer: To ensure that every student achieves the learning goals, teachers must respond to the uniqueness of each child. Thus, the teacher must get to know each student. There are many strategies for getting to know students, including: reviewing available student data; collecting information about students' interests, preferences, and abilities through a variety of planned activities throughout the school year; and engaging with students outside of the classroom.

Question 2: What is differentiation? How can the curriculum be differentiated?

Answer: Differentiation is a way to provide different options and pathways for students to make sense of ideas so that each student can learn effectively. This can be done by adapting the content itself, the process of learning or the product you are asking students to create.

Question 3: What are some factors to consider when adapting the classroom environment?

Answer: Light, temperature, air quality and external noise levels; if a student is hungry, thirsty, tired or stressed.

Question 4: What are some of the challenges to adapting the teaching-learning situation? What makes it worth the effort?

Answer: It takes time and effort. It is also what will help make sure every student can learn.

3.6. Providing Positive Feedback

Feedback that affirms a student's worth and potential while also encouraging growth, can be a powerful tool and motivator for learning! This sub-unit introduces the idea of using feedback to promote a 'growth mindset' and provides practical tips for making sure that the feedback you offer students can positively effective their learning.

3.6.1. Offering positive feedback to promote learning

Expected learning outcomes

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

- Provide positive feedback to each other in demonstration.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Four periods of 50 minutes

Learning strategies: Concept mapping; corrections of feedback; generation of positive feedback

Preparation needed: Handout with a series of written reports of student feedback (these may be actual student feedback samples or invented samples that use fixed mindset language); small papers with a number (one per student teacher) and lightly written in pencil on the other side, the name of an animal; rubric to evaluate the creation of a tin foil animal (sample provided)

Resources needed: Paper and markers or coloured pencils for concept maps; tin foil; all created materials as described above

Period 1

Learning activity 1: Introduction and concept mapping (30 minutes)

1. Welcome student teachers and invite them to sit in groups of three or four. Remind students that the next three classes will be dedicated to understanding the elements of positive feedback and providing positive feedback.
2. Explain to the students that in their groups they will receive a large piece of paper and coloured pencils or markers. In their groups, they should design a concept map or a visual representation, that summarises positive feedback and how to give positive feedback.
3. Give groups about 25 minutes to complete their poster.

Assessment

Formatively assess understanding of positive feedback as you circulate. The posters will be peer-assessed in the next activity.

Possible student teachers' responses

Student teachers should draw upon the knowledge and experience gained in Lesson 3.3.1, Period 2.

Learning activity 2: Gallery walk (15 minutes)

Stop and think

If you need more help with concept maps and gallery walks, refer to the 'Toolbox for assessment approaches' in the introduction of this guide.

1. Invite students to leave their concept maps on their tables and to get up and read the concept maps of the other groups.
2. Instruct them to take note of the differences; they should make some notes in their notebook as they will be discussing the posters in the next class.

    a. What details did they find particularly enlightening?
    b. What questions do they have after looking at the other concept maps?

Assessment

This is a peer-assessment exercise of the previous activity.

Possible student teachers' responses

Answers will vary based on the posters produced.

Check student teachers' understanding (5 minutes)

1. Ask student teachers to discuss in pairs: *What are some important elements of feedback that a teacher should remember? Why are they important?*
2. Ask them to complete the Review questions in the Student Teacher Textbook.

Period 2

Learning activity 4: Group and pair discussion (20 minutes)

1. Remind student teachers of the concept maps they created last class. It is a good idea to have the concept maps displayed on the wall. Ask students to share some important takeaways from the concept maps. What did they learn about the process of providing feedback? What are some of the most important things to remember when giving feedback to students?
2. Invite students to share their questions. Allow others to answer if they would like.
3. Ask student teachers to work with a partner and go over the answers to the homework questions. They may have slightly different answers than their partner.
4. As a whole class, talk about the definition of growth mindset, and how they adjusted the feedback in the homework questions (answers may vary; sample provided below):

    a. 'Perfect! You haven't made a single mistake!' → *You've worked very hard and got all the answers correct. Now have you thought about _____?*
    b. 'You should have won the spelling bee. I know you are smarter than the other girl, you probably were just tired. You'll win next time.' → You did very well; it may not have been your best day. Let's think about what you can do to improve for next time.
    c. 'I was bad at history, too. It's boring anyway, don't worry about it.' → We all have subjects we like better than others. Is there anything about history that interests you? Let's make a study plan so you can do better on the next assignment.
    d. 'I am very disappointed. You clearly don't care about your success in science class.' → I've noticed you don't seem to be putting much effort into science class. Is there a reason for this? What can I do to help?
    e. '73%' → You've earned a 73% which tells me that you have a basic understanding of the material, but need to work more on some of the more complex ideas.

Assessment

Formatively assess student teachers' understanding of positive feedback as you go through the answers.

Possible student teachers' responses

1. What is the difference between a fixed mindset and a growth mindset? *A fixed mindset is the belief that we have a set of established characteristics that we cannot change. Growth mindset is the belief that we are capable of continuously growing and changing through conscious effort and hard work.*
2. Write three examples of feedback that promote a fixed mindset and explain how each of these comments might hinder the learning of the student:

    a. "You're just not good at Maths." → *Promotes the idea that a student is not capable of learning.*
    b. 'Perfect!' → *Promotes the idea that there is no room for improvement or further learning*
    c. 'You are lazy.' → *Does not express the expectation that the student can and will change.*

3. What are some other important elements of feedback that a teacher should remember? Why are they important? *In addition to developing feedback that is positive and promotes a growth mindset, it is important that feedback is timely, specific and criterion-referenced, and clear:*

Learning activity 5: Analysing written feedback (20 minutes)

1. Next pass out a handout with three or four different examples of written feedback to students. Ask them to individually read the feedback and jot down their initial reactions.
2. After 5-10 minutes, ask students to share their thoughts. The hope is that students will identify the fixed mindset language.
3. Explain to the student teachers that although this kind of feedback may be typical, it promotes a fixed mindset and it should promote a growth mindset.
4. Ask student teachers to bring the handouts with them to the next class period.

Assessment

This is largely a self-assessment exercise.

Possible student teachers' responses

Student teachers should identify the fixed mindset language, and that this does not constitute positive feedback.

Period 3

Learning activity 6: Correcting feedback (20 minutes)

1. In pairs, student teachers will re-read each example of feedback on the handout distributed last class. With their partner, they should rewrite it to include language that promotes a growth mindset.
2. You may need to remind students that feedback to promote growth acknowledges where students are at and encourages them to take the next step in their learning.
3. In some cases, student teachers will need to be creative because they might not have enough information about the student or the student's work to really be able to give the feedback that they want. The goal is to create a model of what positive feedback might look like.

Assessment

The task will be assessed in the following activity.

Possible student teachers' responses

Student teachers should base their positive feedback on the knowledge gained from the previous activity and previous lessons dealing with giving feedback.

Learning activity 7: Whole class discussion (20 minutes)

1. Choose a pair to read their improved feedback.
2. Ask the other students to jot down reactions and then call on someone to provide positive feedback to the person who read the example. Remind students that the feedback should identify strengths and weaknesses using growth mindset language, provide ways to improve and be clear and criterion-specific.
3. Repeat for each example on the handout.

Assessment

This activity is peer-assessed as described above.

Possible student teachers' responses

Should consist of feedback statements that promote a growth mindset.

Check student teachers' understanding (10 minutes)

1. For the last 10 minutes of class, have student teachers find another partner and create a list of as many feedback phrases they can think of that promote a growth mindset. The phrases in this list should be focused on effort and encouragement.

Period 4

Learning activity 8: Tinfoil animal activity (15 minutes)

1. Give each student teacher a piece of tinfoil and a rubric for tinfoil animals. Ask them to take a seat where there is a number. The desks should be placed in a circle around the border of the room. Instruct them to please not look on the other side of the paper yet. You might wish to use this simple, sample rubric:

Table 3.3. A sample rubric for tinfoil animal activity

Criteria	1 – Excellent	2 – Good	3 – Fair	4 – Needs improvement
Animal can be identified	The type of animal is obvious	The type of animal is mostly obvious	The type of animal is slightly questionable	The type of animal is not clear
Creativity	Highly creative and imaginative	Creative and imaginative	Somewhat creative and imaginative	Lack of creativity or imagination
Following instructions	Follows instructions perfectly	Mostly follows instructions	Does not follow some instructions	Does not follow any instructions
Craftmanship	Work is extremely neat and very carefully executed	Work is neat and careful	Work is somewhat neat and careful	Work is messy and lacks care

2. When everyone is seated, tell them that today they are going to practise giving positive feedback, and they will be providing feedback on the creation of tinfoil animals.
3. Explain that each person has a number and on the other side of the paper they have been assigned an animal which they must create using tinfoil.
4. Before beginning, read over the rubric on how the animal will be evaluated. Ask students why this rubric is needed. They should explain that positive feedback needs to be criterion-specific, and thus the evaluee and the evaluator should have the criterion clear beforehand.
5. Give the students 5 minutes to create their tinfoil animals.

Assessment

This will be peer-assessed in the following activity.

Possible student teachers' responses

Student teachers should recognise that the purpose of a rubric is:

a. to give the 'student' a clear idea of what to aim for; and
b. to give the 'teacher' clear and consistent marking criteria.

Learning activity 9: Evaluation (10 minutes)

1. Instruct students to make sure the name of the animal is face down and only the number can be seen, with the tinfoil animal next to it. Then ask the students to all rotate counter-clockwise five desks.
2. Organise the students into pairs and explain that they are going to each write positive feedback for the two animals at their tables, independently. They have four minutes to write the positive feedback for each animal.
3. During this time, if possible, go around and take photos of the animals and share them in the shared online folder (if you have one).

Assessment

This is a peer-assessment exercise of the previous activity.

Possible student teachers' responses

Student teachers should have made the designated animal, aiming to achieve the criteria specified on the rubric. Their feedback should be positive, criterion-referenced and use growth mindset language.

Learning activity 10: Meta-evaluation (10 minutes)

1. After evaluating the animals, the pairs will sit together. Person A will read the evaluation of one of the animals.
2. Person B, should then provide positive feedback on the positive feedback. Remind students that the positive feedback should identify strengths and weaknesses using growth mindset language, provide ways to improve and be clear and criterion-specific.
3. The two will then switch rolest but Person B will read the positive feedback that he or she wrote about the other animal and Person A will give positive feedback on this positive feedback.

Assessment

This is a peer-assessment exercise although you should also formatively assess student teachers' understanding and ability to use positive, growth mindset feedback by circulating and listening to the conversations.

Possible student teachers' responses

Feedback should be positive, criterion-referenced and use growth mindset language.

Check student teachers' understanding (10 minutes)

1. Ask a few students to share their thoughts – the hardest part about positive feedback, for example.
2. Thank student teachers for their work. Ask them to hand in their positive feedback to you and remind them to complete the Sub-unit 3.7 reading for the next cass.

Extension and differentiation activities

Feedback activities: If student teachers are struggling to understand the difference between fixed mindset and growth mindset feedback, you could take more time on these concepts. A simple role-play may help them clearly see the difference between the two.

Review questions: Possible student teachers' responses

Question 1: What is the difference between a fixed mindset and a growth mindset?

Answer: A fixed mindset is the belief that we have a set of established characteristics that we cannot change. Growth mindset is the belief that we are capable of continuously growing and changing through conscious effort and hard work.

Question 2: Write three examples of feedback that promote a fixed mindset and explain how each of these comments might hinder the learning of the student.

Answers: Will vary. See Sub-unit 3.6 in this Guide for some examples.

Question 3: What some other important elements of feedback that a teacher should remember? Why are they important?

Answer: In addition to developing feedback that is positive and promotes a growth mindset, it is important that feedback is timely, specific and criterion-referenced, and clear.

3.7. The Importance of Motivation For Effective Learning

Student motivation is an important part of student learning. Students are unlikely to learn if they are not motivated, either through intrinsic or extrinsic means. This sub-unit will help you think through ways you can capture students' interest, respond to their emotions, and emphasise the importance of learning, empowering them to take ownership of their learning.

3.7.1. Motivating students for effective learning

Expected learning outcomes

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

- Identify the advantages of motivation for effective learning.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Three periods of 50 minutes

Learning strategies: Dramatisation

Preparation needed: Cards with a scenario to act out (one per every group of 5 or 6); Powerpoint presentation responding to student questions or misunderstandings; poster paper for threats/challenges activity

Resources needed: As above

Period 1

Learning activity 1: Warm-up activity: Motivation outside the classroom (15 minutes)

1. Welcome student teachers. Ask student teachers to think about what they do every day. What *motivates* them to do these things? These can be somewhat silly: What motivates them to get up in the morning? What motivates them to eat? Or to exercise? They may also be more serious: What motivates them to volunteer for a charity? Or to spend time with their elderly grandparents?
2. Student teachers should make a list of all the things that motivate them to do what they do in life. Once they have finished writing, you can ask for volunteers to share some of their motivators.
3. Make the point that there is a connection between motivation and achievement. Teachers need to know how to motivate their students so that they will succeed. Motivation is also closely connected to student engagement, which they will think about in the next unit.

Assessment

Accept all answers which are a type of motivation, in other words, a reason to do something based on achieving the desired result.

Possible student teachers' responses

Student teachers should describe their reasons for wanting to achieve or attempt something; this may be an intrinsic or extrinsic motivation – definitions and examples of these two types of motivation follow in the next activity.

Learning activity 2: Pair work (35 minutes)

1. Ask student teachers to pair up with someone they do not usually work with. With their partner, they should review the definitions in the Student Teacher Textbook of intrinsic and extrinsic motivation. You may then wish to remind them that: Extrinsic motivation is when an individual is motivated to perform an activity to earn a reward or avoid a punishment. Intrinsic motivation, on the other hand, is when an individual is motivated to perform an activity for its own sake and personal rewards.
2. Ask the pairs to revisit their lists of what motivates them to do what they need to do each day. They should identify whether they are being motivated by intrinsic or extrinsic rewards. For example, perhaps they volunteer for a charity each month because it makes them feel good about themselves. This is an intrinsic reward.
3. Once pairs have identified whether each motivation is intrinsic or extrinsic, ask for a few volunteers to share examples with the whole class. You should stress that teaching involves both fostering intrinsic motivation and using extrinsic rewards to encourage achievement.
4. With the same partner, student teachers should answer the following questions:

    a. How do emotions impact motivation? What are strategies for inciting positive emotions in the classroom?
    b. How does interest impact motivation? What are strategies that incorporate student interest?
    c. How does perceived importance impact motivation? What are strategies for addressing this in the classroom?
    d. How do perceptions of efficacy impact motivation? What are strategies for addressing this in the classroom?

5. Student teachers should finish answering these questions as homework before the next class.

Assessment

Collect answers to the questions above and mark according to the information in the Student Teacher Textbook section 'Strategies for Motivating Students' (Lesson 3.7.1).

Possible student teachers' answers

Student teachers may use or adapt the information in the Student Teacher Textbook section 'Strategies for Motivating Students' (Lesson 3.7.1).

Period 2

Learning activity 3: Review of motivation strategies (15 minutes)

1. Check to see that all student teachers have completed their homework questions. Begin class by reviewing their answers as a whole class.
2. Ask one student to describe how each element impacts motivation. Ask if any other student teachers have points to add. Ask another student to give at least one strategy to address this element. You should try to call on as many different student teachers as possible during this activity. See the section on 'Strategies for Motivating Students' in the textbook as an Answer Key for these questions.
3. If student teachers have questions about what they have learned about motivation, you can take time to answer them here.

Assessment

This is largely peer-assessed, plus your confirmation.

Possible student teachers' responses

Should draw on the information in the Student Teacher Textbook.

Learning activity 4: Skit preparation (35 minutes)

1. Tell student teachers that they will be creating short skits to dramatise a number of scenarios related to motivation.
2. Organise student teachers in groups of 5 or 6 and give them a card with a scenario. The scenarios may include:

    a. Demonstration of a class without motivation;
    b. Demonstration of a student who is intrinsically motivated versus extrinsically motivated;
    c. Demonstration of a teacher implementing strategies to address emotion;
    d. Demonstration of a teacher implementing strategies to address student interest;
    e. Demonstration of a teacher implementing strategies to address perceived importance; and
    f. Demonstration of a teacher implementing strategies to address perceptions of efficacy.

3. Explain to the student teachers that they have 30 minutes to work in their groups to create 1-2 minute skit to depict the description in the card. They will present their skits in the next class period.

Assessment

This task will be assessed in the following lesson.

Possible student teachers' responses

Will vary but should tackle the issue of motivation from the perspective of one of the scenarios above.

Period 4

Learning activity 5: Dramatisation (40 minutes)

1. Each group will present their 1-2 minutes skit. As they present, the others should write down what they observe and what concept they believe is being presented.
2. After a group presents, ask for volunteers to share their observations and make connections to the reading in the textbook. You can intervene to clarify any misunderstandings or inaccuracies in the comments.

Assessment

Peer-assessed.

Possible student teachers' responses

Skits should tackle the issue of motivation from the perspective of one of the scenarios above. Feedback should refer to the information in the Student Teacher Textbook and incorporate elements of positive feedback as studied in previous lessons.

Check student teachers' understanding (10 minutes)

1. Thank students for their participation in the class. As they leave class, ask student teachers to write down one question they have about how to motivate students on a piece of paper and hand this into you.
2. For the next class, student teachers should read Sub-unit 3.8.

Extension and differentiation activities

Encourage groups to find roles in their skit for all personality types. For example, if there is someone who does not enjoy being the centre of attention, they can cast him or her in a supporting role.

Review Questions: Possible student teachers' responses

Question 1: What is the difference between motivation and engagement?

Answer: Motivation focuses on the end product or learning outcomes; engagement indicates a focus on the task at hand or process.

Question 2: How does Maslow's hierarchy of needs relate to motivation and engagement in the classroom?

Answer: The emotional state of the learner plays a critical role in engagement, as well as motivation. In order to learn, students must first feel safe, loved and accepted. Maslow's Hierarchy of Needs asserts that in order to work towards higher levels of needs such as learning, one must first have other basic needs met that include: physiological needs, safety and security needs, and loving and belonging needs (Martin & Joomis, 2007).

Question 3: Provide an example of intrinsic and extrinsic motivation.

Answer: Answers will vary. Extrinsic motivation is when an individual is motivated to perform an activity to earn a reward or avoid a punishment. Intrinsic motivation, on the other hand, is when an individual is motivated to perform an activity for its own sake and personal rewards.

3.8. The Importance of Student Engagement

While motivation is the desire to achieve a learning goal, student engagement involves a focus on the *process* of getting to that goal. Ensuring that both are present for learners in the classroom is critical for their academic achievement. This sub-unit will help you think about how you can engage your students, including ensuring that their basic needs are met so that they can focus on learning.

3.8.1. Engaging students in learning

Expected learning outcomes

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

- Explain the importance of student engagement.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Three periods of 50 minutes

Learning strategies: Brainstorming; 'Chalk Talk'; problem-solving; discussion; diagramming

Preparation needed: A4 paper; flipchart paper and markers; tape; Basic Education textbooks; Educational Studies Student Teacher Textbook

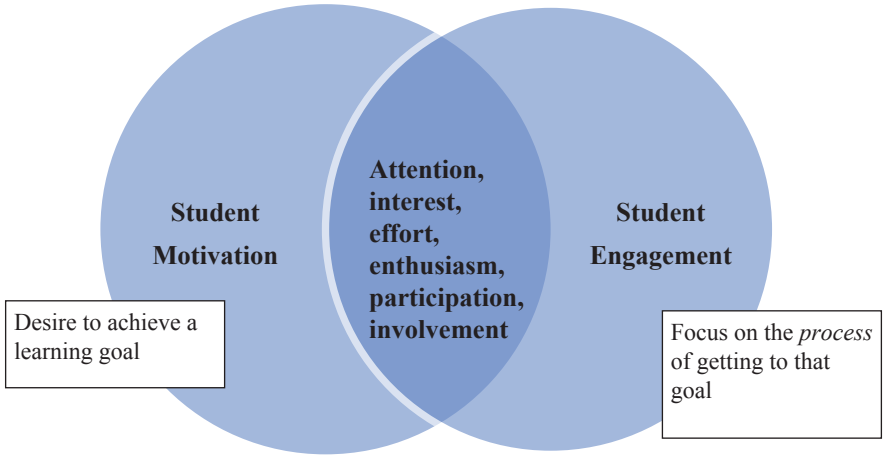
Resources needed: As above

Period 1

Learning activity 1: Warm-up activity: Illustrating engagement and motivation (10 minutes)

1. Draw a Venn diagram on the board with the words 'student engagement' and 'student motivation.' Ask students to think about what is the same and what is the difference in these two concepts. You should end up with something that looks like this:

Figure 3.4. Student engagement and motivations



Assessment

This task will give you an initial idea of student teachers' understanding of the difference between motivation and engagement. You may need to confirm or add answers, as given above.

Possible student teachers' responses

See example diagram, above.

Learning activity 2: Small group discussion (20 minutes)

1. Remind student teachers that the strategies used to motivate students can also work to engage them with what is happening in the classroom. Remind them of Silver and Perini (2010) eight 'C's' of engagement: competition, challenge, curiosity, controversy, choice, creativity, cooperation and connections
2. Divide student teachers into eight groups, and assign one 'C' to each group. Distribute a primary textbook (any grade level and any module to each group). Ask each group to choose a lesson topic and come up with a way that they could use their 'C' in teaching that lesson. They do not need to plan the activity in detail.
3. After groups have had a chance to discuss, go around and share one example of using each 'C' in a lesson to help engage students.

Assessment

Circulate to check and assess groups' understanding of the 'C' and their ability to apply it to a lesson. This activity is also peer-assessed.

Possible student teachers' responses

Student teachers should focus on the 'C' word and apply it to a lesson of their choice.

Learning activity 3: Partner diagrams (20 minutes)

1. Explain to student teachers that the emotional state of the learner plays a critical role in engagement, as well as motivation. In order to learn, students must first feel safe, loved and accepted. Maslow's Hierarchy of Needs helps to picture this idea.
2. Ask student teachers to choose a partner to work with. They should produce a visual of Maslow's Hierarchy of Needs, including each level of the pyramid. Their visual should also show how these levels can be applied in school settings.
3. You can collect the diagrams before the end of class. Inform student teachers that, in the next class, they will be looking at challenges to student engagement, including the ones suggested in Maslow's hierarchy, and how to overcome these challenges.

Assessment

Collect the diagrams to mark according to the diagram of Maslow's Hierarchy of Needs that can be found in the Student Teacher Textbook. You will also need to mark how appropriately student teachers have linked the elements of the pyramid to school settings.

Possible student teachers' responses

Student teacher should replicate the Maslow diagram and make some links to how these are seen in the school environment.

Period 2

Learning activity 4: Brainstorming (20 minutes)

1. Welcome student teachers. Explain to them that today they will be participating in an activity to consider the challenges or threats to engagement (and motivation) in the classroom and develop a list of possible solutions.
2. Ask student teachers to spend 5-10 minutes individually brainstorming and writing down a list of all the challenges or threats that might keep a student from being engaged or motivated. They should think about students at different ages and who live in different parts of the country.

3. Invite a volunteer up to the board or flipchart paper to record a master list of challenges and threats. Ask students to share items from their lists. Try to make the master list as comprehensive as possible and specific to different contexts in Myanmar.

Assessment

Whole-class peer-assessment. Formatively assess how aware your student teachers are of different challenges to motivation, and add your own ideas and experiences to the list if necessary. These might include hunger, fatigue, fear of failure, language difficulties, family backgrounds where education is not valued, conflict, child labour, lack of interest, and so on.

Possible student teachers' responses

A wide range of challenges should be suggested from the class.

Learning activity 5: Solution generation (30 minutes)

1. Organise the class into groups of three. Divide the challenges/threats from the list between the groups.
2. Explain that each group is going to create a poster for each threat or challenge that they have been assigned. The title of the poster should be the threat or challenge and then below they should provide their proposed solutions.
3. Groups may get started with their posters; they will need to finish them as homework for the next class.

Assessment

Circulate and formatively assess how adept the student teachers are at suggesting a solution to motivation challenges. Encourage them to use information and ideas from previous lessons. This activity is also peer-assessed in the following period.

Possible student teachers' responses

Will vary depending on the challenges suggested.

Period 3

Learning activity 6: 'Chalk talk' (25 minutes)

Stop and think

See description of 'Chalk talk' in Sub-unit 3.3 of the Student Teacher Textbook.

1. Give student teachers tape to hang their posters on the wall as they come in.
2. When everyone is seated, tell them that today they will be reviewing the challenges and threats and proposed solutions and then completing a final reflection on motivation and engagement.
3. Explain to student teachers that they are going to around the room. They should read all the solutions to each challenge or threat. With a pen or marker, they will share their reaction to the solution. A check communicates agreement that the solution is viable and/or effective. A triangle communicates that the solution needs some changes but that it has potential. An 'X' communicates disagreement with the proposed solution.
4. Students will move around the room and react to the solutions.
5. If possible, take pictures of the posters and share in the digital online folder.

Assessment

This is a peer-assessment activity using the material from the previous activity. It is also a good chance to check in on student teachers' thought processes and problem-solving skills.

Possible student teachers' responses

Student teachers' own opinions/reactions.

Check student teachers' understanding (25 minutes)

1. Quickly scan the posters. Identify solutions for which everyone seems to be in agreement that the solution is viable. Read out the challenge/threat and the proposed solution.
2. Next scan for solutions where there seems to be a great deal of disagreement. One at a time ask students to comment and work to arrive at a consensus or provide guidance that helps to clarify for the class.
3. Next scan for solutions that seem to require changes. Ask student teachers to share their ideas for changes and work to arrive at a consensus or provide guidance that helps to clarify for the class.
4. Finally, identify the solutions where the majorities were in disagreement. Ask student teachers to share their ideas for changes and work to arrive at a consensus or provide guidance that helps to clarify for the class.
5. Thank student teachers for their work, and remind them to complete the Sub-unit 4.1 reading for the next class.

Extension and differentiation activities

If you notice that some group members are not actively participating, you may wish to assign specific task to individuals within the group. If you notice some individuals do not work well together, you can avoid putting them in the same group. You may also choose to do some of the activities as individual assignments.

Review questions: Possible student teachers' responses

Question 1: How do emotions impact motivation and engagement? What are strategies for inciting positive emotions in the classroom?

Answer: How a student feels is connected to his or her energy level, the teacher's attitude or presentation, and the degree to which a student feels connected to his or her peers; these elements include his or her ability to be engaged and motivated in class. Some strategies for fostering positive emotions include employing movement, joy and humour, and connection in the classroom.

Question 2: How does student interest play a role in motivation and engagement in the classroom? What are strategies that incorporate student interest?

Answer: Teachers need to know their students to know what sparks their interest. Then teachers can build on their students' existing interests and generate new interest. Strategies to incorporate interest include using curiosity, controversy and competition in the classroom.

Unit Summary

Key messages

- Questions are a powerful tool for scaffolding the learning of students. Scaffolding is the processing of building up students' ability to complete a task independently. The process begins by the teacher providing examples and modeling a task, then little by little taking away supports until the students can all complete the task alone. Bloom's taxonomy is a powerful tool that provides a structure to scaffolding through the use of action verbs that gradually require a higher level of cognitive processing.

- Effective communication is essential in the classroom. A teacher must develop messaging that is clear and accurate. When communicating, it is important to balance talking with listening to confirm that the message was received. In communication, body language and tone of voice must also be monitored, as they can be more powerful than the words themselves. Additional supports, such as written and visual aids, can strengthen communication.

- Cooperative, active, and interactive learning allow students to develop important skills for the Twenty-first century such as a critical thinking, communication, collaboration, and creativity. Cooperative learning provides a structure for students to learn positive interdependence and accountability as they work together towards a clear goal that requires them to take responsibility for their own learning as well as the learning of others. Active learning requires students to engage with the lesson objective or skill, as opposed to passively receiving information. Interactive learning, sometimes used synonymously with active learning, refers to the use of technology to engage students in their learning. All three approaches strengthen a student's ability to make sense of their learning.

- Teacher-centred instruction and student-centred instruction are two approaches to teaching. Student-centred instruction is encouraged for developing autonomous learners prepared for lifelong learning however, there are also arguments to be made for teacher-centred instruction strategies such as direct instruction, at times. A teacher needs to have clear criteria for determining the approach that will be met with the needs of the students to master the proposed learning goal.

- Autonomy is developed in students by providing clear goals, structuring activities that promote metacognition, and giving students choices in the classroom.

- Every student brings to the classroom a unique set of interests, abilities, strengths and challenges. A teacher must take them time to get to know the makeup of each student, identify the barriers to learning that may present themselves and make adjustments to the curriculum and the physical environment in order to overcome these barriers and guarantee the success of each child. Differentiation is the conglomeration of decisions or adjustments, a teacher makes in the classroom to meet the needs of every student. There are many strategies for differentiation. Planning for the marginalised students in the classroom, will generate a learning environment that better serves the entire group.

- Positive feedback should celebrate effort over innate ability. A growth mindset develops the belief that with hard work one can achieve any goal and promotes learners for life. Teachers should consider their messaging carefully. Positive feedback should be timely, clear, accurate, goal-oriented and always provide steps for further improvement. If a student is mastering a concept, the teacher should extend his or her learning and celebrate risk-taking and the welcoming of new challenges. If a student is struggling with a concept, the teacher should scaffold the learning and celebrate persistence.

- Motivation is a focus or interest in the outcome, the desire to achieve a clear learning goal. Engagement is a focus on the process or the task. Ensuring that both are present for learners in the classroom is critical for their academic achievement.

Unit reflection

Make sure you fully understand what is meant by positive feedback that promotes growth. Be aware of the type of feedback you hear used in your classes. We do not only give feedback to individuals in the classroom – we also give our family and friends informal feedback all the time on something well done or something we are not happy about. How can using positive feedback make you become a better friend or family member?

What motivates you as Education College student teachers? Are you purely motivated by grades? Or do you work hard because you want to be a good teacher? How do the strategies for fostering motivation apply to your work as student teachers?

Think about some of the challenges you are likely to face in implementing the proposed solutions discussed in Lesson 3.8.1. This is one of the many reasons that teaching is a challenging job! How do you anticipate you will respond to these challenges?

Further reading

3.1.

Armstrong, P. (n.d.). Bloom's Taxonomy. Retrieved from Vanderbilt University Center for Teaching. website: https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/

Bruner, J. S. (1978). The role of dialogue in language acquisition. In A. Sinclair, R. J. Jarvelle, & W. J. M. Levelt (Eds.), *The Child's Concept of Language.* New York: Springer-Verlag.

McLeod, S. A. (2008). Simply Psychology. Retrieved from Bruner website: https://www.simplypsychology.org/bruner.html

Shabani, K., Khatib, M., & Ebadi, S. (2010). Vygotsky's zone of proximal development: Instructional implications and teachers' professional development. *Teaching English Language,* 3(4), 237–248.

Vygotsky, L. S. (1978). Mind in Society: the Development of Higher Psychological Processes. Retrieved from https://files.eric.ed.gov/fulltext/EJ1081990.pdf

3.2.

Fisher, D., & Frey, N. (2009). Feed up, back, forward. *Educational Leadership.,* 67(3), 20–25. Retrieved from http://www.ascd.org/publications/educational-leadership/nov09/vol67/num03/Feed-Up,-Back,-Forward.aspx

3.3.

Boaler, J. (2016). *Mathematical mindsets.* San Francisco, CA: John Wiley & Sons, Inc.

Dean, C. B., Hubbell, E. R., Pitler, H., & Stone, B. (2012). *Classroom instruction that works: research-based strategies for increasing student achievement.* (2nd ed.). Alexandria, VA: ASCD.

Gregory, G., & Kaufeldt, M. (2012). *Think big, start small: How to differentiate instruction in a brain-friendly classroom.* Bloomington, IN: Solution Tree Press.

Prince, M. (2004). Does Active Learning Work? A Review of the Research. *Journal of Engineering Education,* 93(3), 223–231. https://doi.org/10.1002/j.2168-9830.2004.tb00809.x

Slavin, R. (2010). "Co-Operative Learning: What Makes Group-Work Work?" *The Nature of Learning: Using Research to Inspire Practice.,* 161–178. https://doi.org/http://dx.doi.org/10.1787/9789264086487-9-en

University of Minnesota: Center for Educational Innovation. (n.d.). Active Learning. Retrieved from https://cei.umn.edu/active-learning.

3.4.

Hattie, J. (2009). *Visible Learning: A Synthesis of 800 Meta-Analyses Relating to Achievement.* Routledge.

Killian, S. (2014). The myths & facts about direct instruction. Retrieved from The Australian Society for Evidence Based Teaching. website: http://www.evidencebasedteaching.org.au/direct-instruction-facts-myths/

Nunan, D. (2003). Nine steps to learner autonomy. *Symposium A Quarterly Journal In Modern Foreign Literatures,* 193–204.

Schreurs, J., & Dumbraveanu, R. (2014). A Shift from Teacher Centered to Learner Centered Approach. *International Journal of Engineering Pedagogy,* 4(1). Retrieved from http://online-journals.org/index.php/i-jep/article/viewFile/3395/3192

Schug, M. C. (2003). Teacher-centered instruction. In J. Leming, L. Ellington, & K. PorterMagee (Eds.), *Where did social studies go wrong?* (pp. 94–110). Retrieved from http://lexiconic.net/pedagogy/TeacherCenteredSocialStudies.pdf

The Room 241 Team. (2012). Teacher-centered vs. student-centered education? Retrieved from A blog by Concordia University-Portland. website: https://education.cu-portland.edu/blog/classroom-resources/which-is-best-teacher-centered-or-student-centered-education/

3.5.

Cast Inc. (2018). Until learning has no limits.

Gregory, G., & Kaufeldt, M. (2012). T*hink big, start small: How to differentiate instruction in a brain-friendly classroom.* Bloomington, IN: Solution Tree Press.

Tomlinson, C. A. (2005). *How to differentiate instruction in mixed-ability classrooms.* Upper Saddle River, NJ.

3.6.

Dean, C. B., Hubbell, E. R., Pitler, H., & Stone, B. (2012). *Classroom instruction that works: research-based strategies for increasing student achievement.* (2nd ed.). Alexandria, VA: ASCD.

Dweck, C. S. (2008). *Mindset: the new psychology of success.* New York: Ballantine Books.

Pollack, J. E. (2007). *Improving student learning one teacher at a time.* Alexandria, VA: ASCD.

3.7.

Lai, E. R. (2011). *Motivation: A literature review.* Retrieved from https://images.pearsonassessments.com/images/tmrs/Motivation_Review_final.pdf

Marzano, R. ., & Pickering, D. (2011). *The Highly Engaged Classroom.* Bloomington, IN: Solution Tree Press.

Walkgrove Limited. (2015). *Engagement and Motivation, improving learning outcomes.* Retrieved from https://www.walkgrove.co.uk/assets/resources/Engagement-and-motivation.pdf

3.8.

Gregory, G., & Kaufeldt, M. (2012). *Think big, start small: How to differentiate instruction in a brain-friendly classroom.* Bloomington, IN: Solution Tree Press.

Marzano, R., & Pickering, D. (2011). *The Highly Engaged Classroom.* Bloomington, IN: Solution Tree Press.

Tomlinson, C. A. (2005). *How to differentiate instruction in mixed-ability classrooms.* Upper Saddle River, NJ.

Walkgrove Limited. (2015). *Engagement and Motivation, improving learning outcomes.* Retrieved from https://www.walkgrove.co.uk/assets/resources/Engagement-and-motivation.pdf

Unit 4

Planning and Preparation

This unit will introduce your Educational Studies student teachers to planning lessons and deciding what types of materials to look for or create.

Every teacher wants to have successful lessons. A key component of a successful lesson is the teacher's advance planning and preparation. At first, planning and preparing for lessons may take a long time. With experience, teachers will get better and faster at planning and preparing for their lessons.

In this unit, student teachers will learn and practice the following 10 steps to planning and preparing for lessons.

1. Teach themselves the main idea, related ideas and supporting details of the lesson content.
2. Anticipate what content students might already know, based on life experiences and previous learning. Anticipate what (on topic and off-topic) questions students may have, and how they will respond to both types of questions.
3. Determine one or more SMART learning outcomes for their lessons.
4. Determine success criteria.
5. Using their knowledge of activities and methods, and the importance of sequencing and variety, visualise what they will be doing and what students will be doing during the lesson which will lead them to the learning outcomes.
6. Decide how much time to allow for each activity.
7. Determine teaching and learning materials (TLM) required for each activity.

8. Adapt existing TLM from the internet or create new ones.
9. Anticipate obstacles which may interfere with their lessons going as planned (for example, electricity outage may happen at time a teacher is planning to show a video) and what they will do to keep the students moving forward toward the learning outcomes.
10. Document their plans on lesson plan templates and keep. Copy and keep it for future use.

Expected learning outcomes

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

- Identify the main concept and related idea of a reading;
- Explain the importance of learning objectives, outcomes and success criteria;
- Compare the differences between learning objectives, outcomes and success criteria;
- Construct SMART learning outcomes;
- Select teaching strategies based on nature of the module;
- Describe the importance of teaching aids and how to use them effectively in different circumstances;
- Describe what a learning activity is and explain the characteristics of a good learning activity by using a sample activity;
- Explain various types of teaching activities;
- Demonstrate knowledge of resources;
- Explain what should be considered to prepare a good lesson plan; and
- Draw a draft lesson plan and assess with criteria of good lesson planning.

4.1. How to Identify the Main Ideas, Related Ideas and Details of a Reading

Student textbooks are being developed to support the new Basic Education Curriculum. When student teachers become teachers, they will be using textbooks that are different than the ones that were used in primary school when they were young. In order to teach effectively, they must understand the textbook content and be able to distinguish the main idea, related ideas and supporting details. This is Step 1 of the 10 Step preparation and planning process. This sub-unit presents some strategies student teachers can use to teach themselves the content. These include looking in key places in the text (introduction, conclusion, headings and subheadings) for the main idea, identifying the type of text – process text, cycle text, story text, and so on., and drawing a diagram which represents how the ideas are related. Step 2 of the 10 Step process is anticipating the questions students may have. They will never be able to anticipate all of the questions that naturally curious children will have, but as they teach new content and encounter their questions, they will become better at imagining what types of questions may come up in the classroom about a text. The specific questions are not as important as the types of questions. There are on-topic questions and off-topic questions. Once they understand the main idea and related ideas of the text, they will be able to distinguish on-topic questions form off-topic questions and respond accordingly.

For the purposes of this textbook, ‘reading’ is the term used to refer to pieces of writing which may appear in student textbooks or in other student resources such as handouts, books or websites.

4.1.1. Identifying the main ideas, related ideas and details in readings

Expected learning outcomes

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

- Identify the main concept and related ideas of a reading.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods of 50 minutes

Learning strategies: Listening, reading, diagramming, sharing ideas with partners and small group members, finding information in textbook, note-taking, and consulting dictionaries

Preparation needed: Read this lesson and make sure you understand the Student Teacher Textbook content for this lesson before you teach it. Create Powerpoint slides, overheads or flipchart posters of diagrams in the text. Create a one-page handout of *How Bees Make Honey* (text only, no diagram) and one-page handout of *The Water Cycle* – text only, no diagram). Make enough copies for all student teachers in the class.

Resources needed: As above

Period 1

Learning activity 1: Warm-up: 'I Need to Prepare' game. (15 minutes)

1. Explain the game: This is a memory, speaking, and creative ideas game.
2. Tell the student teachers that in this game we pretend that the class has been invited to a fancy party, hosted by a Myanmar celebrity. Everyone stands in a circle and should think of something they must do to prepare for the fancy party. Each person must add a new idea to the statement, so if one person says 'get a haircut,' no one else can say 'get a haircut.'
3. Begin the game by saying, *'I am going to a fancy party soon. I need to prepare. I need to get a haircut.'*
4. The student teachers next to you repeat what you just said and add his or her own idea. For example, I am going to a fancy party soon. I need to get a haircut and buy a new longyi. This continues all the way around the circle. If someone forgets a previous classmates' statement or can't think of an original idea, start again with a different event. This could be anything from going to Mandalay to getting married. You can use your imagination.
5. To modify this warm-up activity for large classes, you can divide student teachers into two or three groups.

Assessment

After everyone is warmed up, do one more round to assess student teachers' current understanding of how to prepare for a lesson. Instead of going to a fancy party or getting married or going to Mandalay, use the statement: *'I am going to teach a lesson soon. I need to prepare. I need to…'*

Possible student teachers' responses

For the final, assessed round, student teachers should be able to say many of the steps they would take to prepare a lesson.

Learning activity 2: What is a lesson? (10 minutes)

1. Elicit ideas from student teachers about what a lesson is. Write their ideas on the whiteboard or chalkboard.
2. Individually, student teachers read the 'What is a lesson' section of Unit 4.
3. Ask them whether the explanation in the text is different or the same as their ideas.
4. Ask them: What the main idea of the 'What is a lesson' text? Write the main idea on the board: *A lesson is a purposeful, planned organised approach to teaching a main concept and developing your students' behaviours, attitudes and skills (including their thinking skills) that occurs within a specified time.*

Assessment

Can student teachers extract the main idea of the text?

Stop and think

Assess not only the main idea itself but also the student teachers' *ability to extract the main idea* from a text – a key skill called 'reading for gist' which they will be aiming to teach their students.

Possible student teachers' responses

As described in step 4.

Learning activity 3: 10 steps to planning and preparing for a lesson (10 minutes)

1. Individually, student teachers read the 10 steps to planning and preparing for a lesson in their textbook.
2. In pairs, student teachers compare these steps to the ideas that were raised in the last stage of the warm-up game.

Assessment

Student teachers can self-assess: Which steps did they raise in the warm-up game? Which did they not raise?

Possible student teachers' responses

Will depend on the steps mentioned during the warm-up game.

Learning activity 4: Diagramming lesson planning steps (15 minutes)

1. Individually, student teachers read the sections in Sub-unit 4.1 on diagramming a text describing a process and diagramming a text describing a cycle.
2. Student teachers draw a process diagram to represent the 10 steps of planning in their notebooks.

Assessment

Check that the process diagrams show the 10 steps in a logical order.

Possible student teachers' responses

May vary but should do as stated above.

Extension and differentiation activities

Learning activities 1 & 3: Student teachers replay 'I need to prepare' game after learning the 10 steps. The object of the game is to name all 10 steps in order.

Learning activity 4: Student teachers could debate whether lesson planning is a process or a cycle.

Period 2

Learning activity 5: Review of the 10 steps (5 minutes)

1. Draw the following diagram on the board:

2. Elicit from student teachers what the 10 steps are.

Assessment

This task will give you a good idea of student teachers' knowledge of the 10 steps to planning and preparing for a lesson.

Possible student teachers' responses

See previous period for the 10 steps.

Learning activity 6: Practice identifying the main idea and supporting ideas in readings (20 minutes)

1. Individually student teachers read 'How do I Teach Myself the Content?' Section to the end of What Do you Say?
2. In small groups, student teachers try to identify the main idea and supporting ideas.
3. Individually, student teachers read from the end of *What Do You Say?* to the second diagram representing the main ideas and supporting ideas of *What Do You Say?* Here, they find the main idea and related ideas of *What Do You Say?* identified.
4. Facilitate a class discussion on the main idea of *What Do You Say?* Is the main idea the same or different than they thought it was before they read this section?

Assessment

Ask student teachers to identify the main idea and supporting ideas of the text. Remind them that this is a key reading skill – being able to summarise the main ideas of a text gives the reader a deeper understanding of the topic, and the is the basis upon which they will be able to analyse and investigate the topic independently.

Possible student teachers' responses

Main idea: Animals communicate/Different animals use different ways to communicate with each other. Supporting ideas: some use sound, some light up, some use movement, some use colour to communicate.

Learning activity 7: Questions students may ask (20 minutes)

1. Student teachers work in pairs to anticipate and write down several questions that primary students might ask, and how the teacher should answer them.
2. Individually, student teachers read the section beginning after the second diagram of *What Do You Say?* and ending at: You would respond differently to these types of questions than to questions that are not related to the pattern – such as what an animal eats or where it lives.
3. In small groups, student teachers consider the following list of questions that students might ask. Decide if the question is a question about the meaning of the text (M), an off-topic question (O) or a relevant question (R). Determine what the teacher's response should be.

    - What does 'predator' mean? (M)
    - How do monkeys communicate? (R)
    - What does 'attract a mate' mean? (M)
    - What makes an octopus angry? (R)
    - What is a fiddler? (M)
    - How do fish communicate? (R)
    - Can penguins fly? (O)
    - How do jellyfish light up? (R)

4. Different groups can share with the whole class their conclusions about one or two of the questions above. Each group presents about different questions.

Assessment

Formatively assess student teachers' ability to recognise the three types of questions and initially how they might deal with them in the classroom, especially if they do not know the answer or if the question is off-topic.

Possible student teachers' responses

Basic answer shown above in brackets. Student teachers should say that they would encourage students to suggest ways of finding answers; they should also say that they would encourage students to refocus on the topic of the text if their question is off-topic. See Student Teacher Textbook for more detailed instructions.

Check student teachers' understanding (5 minutes)

Ask student teachers to question and answer each other using the three types of question and an appropriate answer. They can use the same *What Do You Say?* text.

Extension activities and differentiation activities

Challenge student teachers to expand on their learning from these two periods by doing one or more of the following:

- Identify another reading from the library or an on-line article and practice identifying the main idea and supporting (related) ideas.
- Read the articles identified in further reading.
- Create a process diagram poster of the 10 steps for planning and preparing for a lesson which will be displayed in the classroom for the remainder of the semester.

4.1.2. Seven steps to teaching yourself content

Expected learning outcomes

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

- Identify the main concept and related idea of a reading.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods of 50 minutes

Learning strategies: Note-taking, reading and following instructions

Preparation needed: Prepare one-page handout of *How Bees Make Honey* and one-page handout of T*he Water Cycle*. Create Powerpoint slide or overhead of the seven steps to teaching yourself the content

Resources needed: As above

Period 1

Learning activity 1: Review (10 minutes)

1. Review the previous lesson, including the three types of questions.
2. How might the teacher respond to each type of question?

Assessment

Formative assessment: Nominate three student teachers to address each type of question and how it could be answered. You may need to ask other student teachers to help or provide further information.

Possible student teachers' responses

The three types of question are 'meaning', 'relevant' and 'off-topic'. See previous period and Student Teacher Textbook for advice on answering the three types of question.

Learning activity 2: Seven steps for teaching yourself the content
(15 minutes)

1. Write the following on the whiteboard (or use a Powerpoint slide or overhead):

   Teach yourself the content: Seven steps

   1. Read the text;
   2. Identify the main idea;
   3. Identify the supporting ideas;
   4. Draw a diagram to represent the main and supporting ideas;
   5. Understand the meaning of every sentence;
   6. Anticipate meaning, off-topic, and relevant questions primary students will have. Generate a minimum of two questions in each category; and
   7. Plan how you will answer the questions.

2. Student teachers write these steps in their notebooks and draw a process diagram which includes all steps in the order they are presented here.

Assessment

Formatively assess student teachers' ability to draw a process diagram. This is a simple example as all the steps are given.

Possible student teachers' responses

Examples of process diagrams are shown in the Student Teacher Textbook.

Learning activity 3: Practice teaching yourself the content (20 minutes)

1. Distribute *'How Bees Make Honey'* reading to half of the student teachers. Distribute *'The Water Cycle'* reading to the other half.
2. Student teachers work individually to follow all of the seven steps above for their assigned reading without looking in their Student Teacher Textbook.
3. Student teachers compare their work with the work of those who are working with the same reading.
4. Student teachers compare with what is shown in the Student Teacher Textbook.

Assessment

This task is peer assessed.

Possible student teachers' responses

See Student Teacher Textbook.

Check student teachers' understanding (5 minutes)

1. Review the seven steps for teaching yourself content.
2. Homework assignment: Ask student teachers to choose a short reading and bring it to the next class

Extension and differentiation activities

Learning activity 2: Student teachers should place handouts they received during this period in their planning and preparation portfolio.

Learning activity 3: Student teachers who finish early can proceed to one or both of the other readings.

Period 2

Learning activity 4: Review (5 minutes)

1. Student teachers write the seven steps without looking back in their textbooks.
2. Student teachers check their seven steps by comparing to the textbook.

Learning activity 5: Practice following the seven steps (30 minutes)

1. Student teachers follow the seven steps for the reading that they brought to class.
2. If a student teacher did not bring a reading, assign Guided Discovery reading in Sub-unit 4.3.
3. Student teachers who finish all seven steps for their reading exchange readings with another student teacher, and proceed with seven steps for that reading.

Check student teachers' understanding (15 minutes)

1. Everyone stands in a circle.
2. Each student teacher comments on something specific that they have learned in this unit.
3. 'I learned a lot' is not an acceptable answer. 'I learned about main idea' is not an acceptable answer.
4. What specifically did they learn about the main idea? How to diagram it? To look in introduction, headings, and conclusion to find the main idea in a text? To test what they think the main idea is by reading the rest of the text and checking if it relates to that idea?

Extension and differentiation activities

Student teachers who struggle with teaching themselves the content can read the three texts in the textbook: *What Do You Say?, How Bees Make Honey,* and *The Water Cycle*. They will need to know and understand these for future lessons.

Challenge student teachers to find readings suitable for different primary school grades and practise the seven steps.

Student teachers can create a process poster diagram for the seven steps which can be displayed in the classroom for the remainder of the semester.

Review questions: Possible student teachers' responses

Question 1: What are some strategies that you can use to identify the main idea in a text?

Answer: Read the first paragraph carefully, read the conclusion, notice the headings, and/or draw a diagram.

4.2. Setting Learning Objectives, Outcomes and Success Criteria

Once you understand the reading, can distinguish main idea, related ideas and supporting details, and have anticipated the questions that the students may have, you can proceed to setting learning outcomes, objectives and success criteria. From the 10 Steps process for lesson planning and preparation, these are Steps 3 and 4. These are the steps in which the teacher asks herself, 'What specifically do I want my students to be able to do at the end of the lesson?' and 'How will I decide if they can do it to a satisfactory level?' This sub-unit equips you with the skills you need to ask and answer these questions for yourself as you plan your lessons.

4.2.1. Objectives, outcomes and success criteria

Expected learning outcomes

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

- Explain the importance of learning objectives, outcomes, and success criteria.

Competencies gained: A2.1 Demonstrate understanding of a variety of teaching and learning strategies and resources

Time: Two periods of 50 minutes

Learning strategies: Individual reading; questioning; pair work; small group work; note-taking; case study.

Preparation needed: Read this lesson in the Student Teacher Textbook and using the strategies presented in Sub-unit 4.1, teach yourself the content. Prepare case study handout; prepare a Powerpoint slide or overhead of the definition of a learning outcome. If no access to Powerpoint projector or overhead projector, be prepared to write the definition of a learning outcome on the board or flipchart paper

Resources needed: Project (optional); handouts as above

Period 1

Learning activity 1: Warm-up: English language compound word race (15 minutes)

1. Divide the student teachers into four teams.
2. Draw a line on the whiteboard or chalkboard to divide it into two columns. In the left column, write the following words in a list: *under, down, top, up, big, over, tooth, hair, in, out.*
3. In the right column, write the following words in a list: *coat, town, mouth, dog, man, wear, side, take, pour, hat, write, shot, come, brush.*
4. Student teachers should understand that a compound word is two words joined together to make a single word. For example, handbag is made up of two words which each have their own meanings: *hand* and *bag.*
5. All teams have three minutes to form as many real compound words as they can from the two lists on the board. The compound word must begin with a word in the left column and end with a word in the right column. Teams can use dictionaries.
6. At the end of three minutes, teams read their words to the opposing teams.

Assessment

Peer-assessment. Other teams are the judges. If a team reads a word that one or more of the other teams does not believe is a real word, the other team(s) can challenge. If a team is challenged and their word cannot be found in a dictionary, they must remove the word from their list. The team with the most unchallenged compound words wins.

Possible student teachers' responses

Undercoat, underdog, underwear, underside, undertake, underwrite, downtown, downside, downpour, topcoat, topside, top hat, uptown, upside, uptake, upshot, bigmouth, overcoat, overtake, overwrite, overcome, toothbrush, hairbrush, inside, income, outside, outtake, outcome

Learning activity 2: Reading learning outcomes (15 minutes)

1. 'Outcome' may or may not have been one of the words the student teachers identified in the warm-up game. If it was not, introduce it now.
2. Explain that every lesson has a learning outcome. Direct student teachers to the Student Teacher Textbook to notice the learning outcome for this lesson.
3. Student teachers write what they think the learning outcomes are for these lessons which they have already completed in Educational Studies:

    - How children learn: Natural ways of learning;
    - IPO process in education; and
    - Providing positive feedback.

Assessment

Self-assessment: Student teachers turn to the lessons mentioned above in their textbooks to check their answers. As you circulate, assess their ideas – they do not have to write the same learning outcome as in their textbook but can they use the correct structure (based on this lesson's learning outcome as an example) and can they express a relevant aim?

Possible student teacher answers

Student teachers' answers will vary. The real answers can, of course, be found as part of each lesson mentioned above.

Learning activity 3: Noticing the structure of learning outcome statements (10 minutes)

1. Ask one or more student teacher to come to the front and write the learning outcomes from Learning activity 2 on the board
2. Ask student teachers: *'What similarities do you see in these learning outcomes?'* There are many correct answers to this question, which may include:

    - They are short complete sentences, not long paragraphs.
    - They state specifically what the students will be able to do.
    - They all begin with the same phrase followed by a verb which describes an action.
    - They do NOT use the verbs 'know' or 'understand' or 'learn' or 'be aware of'

Check student teachers' understanding (10 minutes)

1. Ask student teachers to look at the examples on the whiteboard, and use their thinking skills to create a definition of the term 'learning outcome' by completing the statement: A learning outcome is_____. Student teachers can work in pairs with the person sitting next to them.
2. Individually student teachers read the first paragraph of Sub-unit 4.2 to identify the information they need to complete their definition. While there is not a statement in this paragraph that begins with the words *'A learning outcome is,'* there is information which will help us to create this type of statement.
3. Definition: ***A learning outcome is a short, simple statement about specifically what students will be able to do at the end of a lesson.***
4. All student teachers should write this in their notebooks.

Extension and differentiation activities

Learning activity 1: You may need to model an answer from the columns on the board.

Learning activities 2 & 3: Student teachers review all learning outcomes for all lessons in the Student Teacher Textbook. Student teachers review learning outcomes for lessons in Student Teacher Textbooks from other modules.

Period 2

Learning activity 4: Review (5 minutes)

1. Elicit main points covered in previous class from student teachers

Learning activity 5: Writing a learning outcome (15 minutes)

1. Individually, student teachers read the section of text immediately following the 'Activity' up to the heading Learning Objectives, and write a learning outcome for a lesson related to the text 'What Do You Say?' The learning outcome answers the question: What specifically will my students be able to do after the lesson I will teach?
2. After everyone has written a sample learning outcomes, student teachers stand up and walk around, comparing their learning outcome statements with others. Student teachers can give each other peer feedback on their learning outcome statements.

Learning activity 6: Learning objectives and success criteria (10 minutes)

1. Individually student teachers read the Sub-unit 4.2 sections on learning objectives and success criteria.

Assessment

Ask questions to check student teachers' comprehension of the concepts.

Possible student teachers' responses

Will depend on your questions. Ensure you are prepared by reading the text and preparing some questions in advance (this task will also support your own knowledge).

Learning activity 7: Case study (20 minutes)

1. Divide student teachers into groups of four or five.
2. Distribute the case study handout to all student teachers.
3. Student teachers read and discuss the question with their group.

Figure 4.1. A case study of bees

Case study

At the end of the lesson about how bees make honey, the teacher asks students to work by themselves to draw and label a diagram to show the process. (During the lesson the teacher had demonstrated two types of process diagrams while the students took notes).

Some students draw and label both types of diagrams with all seven steps (the bees collect nectar from flowers, bees fly back to the hive when they are full of nectar, bees pass to other bees in the hive, other bees chew the nectar until it becomes honey. Bees deposit honey into honeycomb cells. Bees fan with their wings so the honey will dry. Bees seal combs with wax.)

One of the students is quite artistically talented. He draws a series of pictures rather than either of the two process diagrams that were taught. The pictures are: a flower with a bee with a long extension sticking into a flower, a beehive surrounded by bees, one bee passing something to another bee, bees chewing, several bees at different cells of a honeycomb, bees fanning their wings near a honeycomb, and a jar of honey.

Several students draw a process diagram with only four steps: the bees collecting nectar, flying back to the hive, passing to other bees, other bees chew it until it becomes honey. They do not mention depositing the honey into the honeycomb cell or sealing it with wax.

Some student's diagrams show five steps: Three steps for collecting the nectar – the bees flying to the flower, sucking it with a straw, storing it in their stomachs. The other two steps are out of order (Fly back to the hive and put the nectar in the cells).

Some students draw a process diagram that includes three steps: Bees collecting honey (not nectar) from flowers, flying back to the hive and depositing honey into cells, and sealing the cells with wax.

You noticed some students copying other students' diagrams.

Discussion question

The first group of students has achieved the learning outcomes. What about the others?

Assessment

Can student teachers identify which scenarios in the case study meet the success criteria? Which do not? Ask student teachers to discuss in pairs, and then take a show of hands for whether each scenario meets the success criteria.

Possible student teachers' responses

Success criteria: Students' drawings must be process diagrams as taught in class. Diagrams must include a minimum of three correct steps in the correct order – bees getting nectar from flowers, bees passing nectar to other bees in the hive, other bees chewing the nectar until it becomes honey.

Check student teachers' understanding (10 minutes)

Summarise the key points regarding learning outcomes, objectives and success criteria.

Extension and differentiation activities

Student teachers can expand the case study with other possible scenarios of what students might produce when asked to draw a process diagram for *How Bees Make Honey.*

4.2.2. Comparing learning outcomes, objectives and success criteria

Expected learning outcomes

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

- Compare the differences between learning objectives, outcomes and success criteria.

Competencies gained: A2.1 Demonstrate understanding of a variety of teaching and learning strategies and resources

Time: One period of 50 minutes

Learning strategies: Individual reading, questioning, pair work, small group work, note-taking, completing a table, comparing own answers and ideas with others.

Preparation needed: Read this lesson in the textbook and using the strategies presented in Sub-unit 4.1, teach yourself the content. Prepare handout of comparison table

Resources needed: Comparison table, as described above

Learning activity 1: Review (5 minutes)

1. Ask the class why we need success criteria for our lessons.

Assessment

According to the answer below. Write the answer on the board to ensure all student teachers have access to the information.

Possible student teachers' responses

So at the end of the lesson, we can easily determine which students have achieved the learning outcomes and which have not.

Learning activity 2: Pair work: Comparison table (40 minutes)

1. Student teachers complete the following table in pairs.

Table 4.1. Comparison table

	Outcome	Objective	Success criterion
What is it? (definition)			
Example			
Is it general or specific?			
When does the teacher write it? Before deciding which activities she will use in the lesson? During the lesson? At the end of the lesson?			

2. Each pair joins another pair and compares their answers for the table.
3. Lead the class in a discussion of the table to make sure all student teachers have correct information entered.

Assessment

Self-assessment: Student teachers can check their own responses on chart and make corrections during the class discussion. They should also submit completed charts at the end of the lesson for you to review.

Possible student teachers' responses

Prepare your own responses using the information in the Student Teacher Textbook to help. This will ensure your own knowledge on the topic is sufficient.

Check student teachers' understanding (5 minutes)

Ask student teachers to discuss the following questions:
In order to achieve the learning outcomes of this and previous lessons, what teaching and learning materials did the teacher educator use, besides the textbook?

What activities did the student teachers do? Individual reading? Pair discussion? Small group discussion? Other?

Extension and differentiation activities

Student teachers could locate information on the internet about learning outcomes and learning objectives and compare it to what is presented in this unit. Is it the same or different?

4.2.3. SMART learning outcomes

Expected learning outcomes

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

- Construct Specific, Measurable, Achievable, Relevant and Time bound (SMART) learning outcomes; and
- Compare the differences between learning objectives, outcomes and success criteria.

Competencies gained: A2.1 Demonstrate understanding of a variety of teaching and learning strategies and resources

Time: One period 50 minutes

Learning strategies: Individual reading; questioning; pair work; small group work; note-taking

Preparation needed: Read this lesson in the textbook and using the strategies presented in Sub-unit 4.1, teach yourself the content. Prepare handout of comparison table

Learning activity 1: Warm-up: Guessing game (5 minutes)

1. Write SMART on the whiteboard. Ask student teachers if they have heard of SMART before. If they have not, play a guessing game. Give them clues as to what each letter stands for.

Assessment

The success of this warm-up will inform how much detail you need to give to subsequent steps – depending on whether student teachers have studied SMART objectives previously or not.

Possible student teachers' responses

Specific; measurable; achievable; relevant; time-bound.

Learning activity 2: Jigsaw peer teaching (30 minutes)

1. Make five groups of student teachers.

    - All number 1 student teachers read the information in the textbook about S – Specific;
    - All number 2 student teachers read about M – Measurable;
    - All number 3 student teachers read about A – Achievable;
    - All number 4 student teachers read about R – Relevant; and
    - All number 5 student teachers read about T – Time-bound.

2. After reading and teaching themselves the content, number the student teachers in each group from 1 to 5.
3. Reform groups so that each new group contains at least one person from each of the original groups.
4. They teach each other about their letter.

Check student teachers' understanding (15 minutes)

1. Together the group of five should assess the learning outcomes they wrote previously in Lesson 4.2.1 period 2). If the learning outcome previously written is not a SMART outcome, student teachers should change it to a SMART learning outcome.
2. Hand out slips of paper. Ask student teachers to write a sample SMART learning outcome and hand it in to you to formatively assess understanding.

Extension and differentiation activities

Learning activity 2: Student teachers could review all of the learning outcomes in their textbook to determine if they are or are not SMART learning outcomes.

Review questions: Possible student teachers' responses

Question 1: Explain what a SMART learning outcome is.

Answer: A learning outcome which is: Specific, Measurable, Achievable, Relevant, Time-bound.

Question 2: Write a SMART learning outcome for a lesson about teaching the days of the week in English class.

Answer: Answers will vary but should be specific, be one sentence, contain a standard learning outcome opening, and a standard learning outcome verb.

Question 3: Explain what success criteria are and why it is important.

Answer: It is the part of the planning process which asks: 'How will I know if my students have achieved the learning outcomes of this lesson?' Teaching something, and defining what you are teaching, is the ultimate aim of the lesson.

4.3. Selecting Teaching Strategies for Each Module

After you have taught yourself the content; anticipated students' questions; developed SMART learning outcomes, objectives and success criteria for your lesson; next you will consider and decide on teaching strategies for your lesson. Particular teaching strategies may be a better fit with some module areas than with others. This sub-unit helps you to develop some knowledge and skills related to selecting teaching strategies that you will need to complete Step 5 of the preparation and planning process outlined at the beginning of this unit. Step 5 is: Using your knowledge of activities and methods and the importance of sequencing and variety, visualise what you will be doing and what students will be doing during the lesson which will lead them to the learning outcomes.

4.3.1. Teaching strategies for subjects

Expected learning outcomes

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

- Select teaching strategies based on the nature of the subject.

Competencies gained: A2.1 Demonstrate understanding of a variety of teaching and learning strategies and resources

Time: One period of 50 minutes

Learning strategies: Prediction; reading to check prediction; reading to understand main idea; pairs discussion; small group brainstorming; individual presentations; role plays.

Preparation needed: Read the sub-unit and teach yourself the content using the strategies presented in Sub-unit 4.1

Resources needed: A ball

Learning activity 1: Warm-up: Categories game (15 minutes)

1. Everyone stands in a circle.
2. Hold a ball and explain that you will announce two categories (for example, in Round 1 'food' and 'red.') Each student teacher has to think of a word that fits in both categories. Student teachers cannot repeat a word that has already been said.
3. Announce the category and give student teachers 10 seconds to think of their ideas. They should then say one word that fits in both categories and pass the ball to player on their left. That student teacher says a word and passes the ball to the left. There is a 10 second limit to say a word. If a student teacher repeats a word that has already been said or cannot think of a word within 10 seconds, the round is over. The student teacher who could not answer or who made a mistake is the first one to answer in the second round.

    - Round 1: Food that is red. You can begin with 'chili.'
    - Round 2: Countries that end with letters l-a-n-d. You can begin with 'Switzerland.'
    - Round 3: Ask a student teacher to suggest the categories.

Assessment

There is no assessment in this activity although you could point out to student teachers that the ability to think and act quickly and spontaneously is one of the many qualities required in teaching.

Possible student teachers' responses

The responses will vary.

Learning activity 2: Naming the subjects (15 minutes)

1. Elicit from student teachers what subjects are taught at primary school level. Fill in any gaps in their knowledge.
2. Elicit what types of topics are included in the different subjects.
3. In pairs, student teachers suggest which of the methods and strategies from Unit 2 can be used to teach which subjects.

Assessment

Formatively assess whether student teachers can suggest relevant teaching methods or strategies for different modules.

Possible student teachers' responses

The modules are: Art, Life Skills, English, Morality and Civics, Myanmar, Science, Social Studies, Maths, and Physical Education. There is not only one possible answer to the suggestion of methods. The aim here is for student teachers to think logically and be able to justify their suggestion.

Learning activity 3: Devising learning activities (10 minutes)

1. Ask student teachers to think about the game they played at the start of the lesson. Would the topic foods that are red fit with any of the subjects? (Maybe Science or Life Skills). What about countries which end in land? (Maybe Social Studies).
2. Divide student teachers into small groups. Each group should brainstorm ideas for categories they could use if they want to play the 'Categories' game for one or more of the following subjects: Science, Social Studies, Myanmar, Life Skills or Maths. To decide if it is a good category, imagine possible answers. For example, animals that are blue are not a good category because there are not many blue animals!

3. Each group decides which is their best idea for one module and presents that to the rest of the class.
4. The class votes for the ideas presented to determine the three best ideas.

Assessment

Peer-assessment: Facilitate a class vote for the best three ideas.

Possible student teachers' responses

The responses will vary.

Check student teachers' understanding (10 minutes)

1. Ask the class: Is the game played at the beginning of class an example of a teacher-centred learning? Or student-centred learning? Why?
2. You will be able to assess here whether student teachers understand and recognise the differences between teacher-centred and student-centred activities.
3. There are various interpretations. Possible answers include:

    - Teacher-centred because the teacher explains and demonstrates how to play and decides on the categories.
    - More student-centred than memorising a list of foods that are red because students use their own knowledge of food to participate in the activity.
    - It starts teacher-centred but when students begin to generate categories, then it becomes more student-centred.

Extension activities and differentiation activities

Student teachers write the instructions to the warm-up game and submit to teacher educator for checking. When instructions are checked and returned, student teachers place the instructions in their planning and preparation portfolio (activities section). Check the instructions for warm-up game that have been written by student teachers. Are they accurate?

4.3.2. Guided discovery

Expected learning outcomes

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

- Select teaching strategies based on the nature of the module.

Competencies gained: B1.1 Demonstrate capacity to teach subject-related concepts and content clearly and engagingly

Time: Two periods of 50 minutes

Learning strategies: Individual reading; pair discussion; role play; small group discussion

Preparation needed: Read the lesson and teach yourself the content using the strategies presented in Sub-unit 4.1. Prepare cards for charades warm-up game – each card contains a teaching method or strategy from Unit 2 or a name of a module that is taught in primary school – English, Maths, Morality and Civics, and so on.

Resources needed: Cards as described above

Period 1

Learning activity 1: Warm-up: Charades game (10 minutes)

1. Student teachers take turn acting out subjects and teaching methods and teaching strategies for the class. Classmates guess the word or phrase being acted out.

Learning activity 2: Reading for main idea, supporting ideas, new information (15 minutes)

1. Individually, student teachers read the first few paragraphs of the sub-unit in their textbook, stopping when they reach the heading 'Guided Discovery in Action'. While they are reading, write the following questions on the board:

    - What is the main idea of this text?
    - What are the supporting ideas?
    - How do the messages in these paragraphs make you feel? Concerned? Relieved? Surprised? Why?

2. In pairs, student teachers discuss the questions on the board. Encourage them to refer back to the paragraphs they just read. Circulate while pairs are discussing.
3. Invite one of the pairs to share their answer to the first question with the group. Invite a different pair to share their answer to the second question and so on. For the last question, you can invite pairs who experienced different feelings to talk about them.

Assessment

Circulate and formatively assess student teachers' understanding. Nominate one student teacher to answer each question with support from others if necessary.

Possible student teachers' responses

The main idea is that guided discovery is a useful learning strategy. Supporting ideas include what guided discovery is, where it comes from, and why it is a useful strategy.

Learning activity 3: Role play pre-reading and preparation (25 minutes)

1. Divide the class into five groups. Student teachers in all groups should read the introduction and conclusion of the article in the Student Teacher Textbook on guided discovery in action.

- Group 1 also reads Example 1
- Group 2 also reads Example 2
- Group 3 also reads Example 3
- Group 4 also reads Example 4
- Group 5 also reads Example 5.

2. Each group practises role playing their assigned scenario.
3. Circulate among groups to make sure they understand the scenario and are preparing an accurate role play of it.

Assessment

This task will be assessed in the next period.

Possible student teachers' responses

Will vary depending on their creativity but should be focused on demonstrating the guided discovery examples.

Extension and differentiation activities

Learning activity 2: If student teachers are confused about the main idea and related ideas, encourage them to use the strategies of looking at the first paragraph, and experimenting with the different diagrams they have learned to see which the best fit is.

Period 2

Learning activity 4: Role play (30 minutes)

1. Student teachers divide into same groups as previous class.
2. Groups take turns role playing the scenarios, for all five guided discovery examples.

Assessment

Watch the role plays. Do they accurately portray the example or examples from the textbook? Assign scores (1-5, with 5 being 100% accurate) to each role play team.

Possible student teachers' responses

Will vary depending on their creativity, but should demonstrate the guided discovery examples.

Stop and think

Role plays have a habit of over-running, mainly in the rehearsal stage rather than the performance stage, which can often be over very quickly. Manage the time strictly: Think SMART objective! You may need to adjust the timings of the lesson. The plenary questions (below) may develop into a longer discussion if the role-plays finish quickly or they may need to be assigned as a homework task if the role plays take longer.

Check student teachers' understanding (20 minutes)

1. After role plays, all groups should read the entire article.
2. Write the following questions on the board while student teachers are reading:

    - What is the main idea of the guided discovery article?
    - Is guided discovery a teacher-centred method or a learner-centred method? Explain your answer.
    - Was guided discovery mentioned in Unit 2? If not, is it similar to another teaching strategy that was mentioned?
    - Do you think guided discovery is a teaching strategy you might us when you are a teacher? Why or why not?

3. In their same role-play groups, student teachers discuss the questions on the board.

Extension and differentiation activities

Guided discovery learning activities: Student teachers can watch a YouTube video of a guided discovery lesson such as this: https://www.youtube.com/watch?v=FRccB08cQMs

Learning activity 4: Student teachers role play scenarios from more than 1 example.

4.3.3. Dramatisation and other methods

Expected learning outcomes

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

- Select teaching strategies based on the nature of the module.

Competencies gained: B1.1 Demonstrate capacity to teach subject-related concepts and content clearly and engagingly

Time: One period of 50 minutes

Learning strategies: Reading; discussion; individual analysis; peer-assessment

Preparation needed: Review the teaching strategies taught in Unit 2

Resources needed: None

Learning activity 1: Review (5 minutes)

1. Ask the class what teaching strategy was used to teach the concept of guided discovery.
2. Student teachers should be able to tell you that it was 'role play' or 'dramatisation.'
3. Ask: In your opinion, was this an effective method? Why or why not?

Learning activity 2: Discussion (10 minutes)

1. Ask student teachers to discuss in pairs the following: *In which subject, do you think role play is a suitable teaching strategy? Why? In which modules are role play not a suitable teaching strategy? Why?*
2. Ask several student teachers for feedback and their reasoning.

Learning activity 3: Individual reading (5 minutes)

1. Individually, student teachers read the remainder of the unit.

Learning activity 4: Choosing methods or strategies (30 minutes)

1. Student teachers choose one of the following topics and decide which teaching strategy (ies) they would prefer to use to teach it, and why. They can choose from the teaching strategies presented in this unit and those presented in Unit 2. They should not choose lecture or choral repetition:

    - How to make a paper airplane;
    - Reasons why we should be kind to animals;
    - Single digit number subtraction;
    - English language vocabulary related to the beach (river, sand, swim, fish, splash, sunburn); and
    - Martyrs' Day.

2. Call on several student teachers to present their answers. Other student teachers should be encouraged to ask questions and provide feedback.

Extension and differentiation activities

Learning activity 2: Develop a quiz with questions about which types of topics are well suited to role play.

Learning activity 4: Student teachers identify teaching strategies they would use to teach several of the topics listed rather than just one.

Review questions: Possible student teachers' responses

Question 1: True or False: There is only one suitable teaching strategy for each primary level module.

Answer: False.

4.4. Teaching and Learning Materials

In the 10 Steps to Planning and Preparing for Successful Lessons, Step 7 is determining teaching and learning materials (TLM) needed for each activity. In this textbook, the terms TLM and teaching aids are used interchangeably. The TLM needed will depend on the learning methods and activities that they choose, and on the students in their class. This sub-unit presents six types of TLM - TLM on classroom walls, worksheets, real-world objects, videos, picture card system, and assistive and augmentative communication. There are other types of teaching and learning materials too. There are too many to discuss in one unit. As the student teachers proceed through this program, they will experience other types of TLM first-hand. That is, other types will be used by you as you teach them. They will also learn more about other types of TLM – including technology-based TLM in future courses.

4.4.1. Common teaching and learning materials

Expected learning outcomes

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

- Describe the importance of teaching aids and how to use them effectively in different circumstances.

Competencies gained: A2.1 Demonstrate understanding of a variety of teaching and learning strategies and resources

Time: Two Periods of 50 minutes

Learning strategies: Reading; small group discussion; assigning ratings to TLM; watching video

Preparation needed: Read this sub-unit and teach yourself the content using the strategies presented in Sub-unit 4.1. Choose an item to bring in for the 'What is in this Box' game as well as something to cover the item so student teachers cannot see it (for example, a box, bag or a backpack). Prepare some Powerpoint slides showing worksheets and some slides showing handouts which are not worksheets (for example, the handouts you used in previous classes on *'What Do You Say?', 'How Bees Make Honey,'* and *'The Water Cycle').*

Resources needed: A mystery object and a box or bag, as above. Flipchart papers and markers for period 2

Period 1

Learning activity 1: 'What is in this Box?' game (15 minutes)

1. Bring out a box or a bag that has a mystery item inside. Student teachers should ask you 'yes' and 'no' questions to try to identify the mystery item.
2. They can ask questions about the item's shape, size, weight, texture, colour and function. For example, is it a toy? Is it something to eat? Is it usually found outside? Inside?
3. After a student teacher asks a question and you answer, anyone can guess what is in the container if they think they know.
4. Be sure to manage the activity so it is not dominated by a small number of talkative student teachers.

Stop and think

It is important to choose a mystery item that student teachers will be unlikely to guess at the very start of the game. Do not choose a common item. Make sure student teachers only ask closed (yes or no) questions.

5. For the second round, ask for a volunteer to draw a mystery item. The volunteer must not show the drawing to anyone! The item should be something that would fit inside the box or bag that you used for your item. As in the first round, the other student teachers can ask yes or no questions to try and guess the mystery item.
6. At the end of the warm-up activity, ask student teachers if they can identify the teaching strategy used in this activity.

Assessment

This task is not assessed, except for the question in the final step, which is an objective question.

Possible student teachers' responses

The teaching strategy is guided discovery.

Learning activity 2: Brainstorming (10 minutes)

1. Brainstorm types of teaching and learning materials. NOTE: School supplies and classroom supplies – pens, pencils, markers, are not teaching and learning materials.
2. If student teachers do not mention real world items, elicit that from them by asking what teaching and learning materials used in the warm-up activity.

Assessment

Assess your student teachers' understanding of the term 'teaching and learning materials' and ensure they understand the term by giving examples if necessary.

Possible student teachers' responses

These may include: worksheets, puzzles, posters, videos, audio recordings or podcasts, flashcards, overheads, 3D items such as models or building blocks. Teachers often develop many of their own teaching aids.

Learning activity 3: Reading and discussion (10 minutes)

1. Student teachers read the paragraph on *'What are Teaching Aids?'*
2. In groups of three, student teachers discuss:

- Are the teaching aids mentioned in the paragraph the same or different from the ones you remember from your experience as a primary school student?
- Are they the same or different from the ones we are using in this module?
- Which of the teaching and learning materials mentioned appeal to you as a learner?

Assessment

Formatively assess your student teachers' ability to recognise and analyse teaching aids as they have been described so far.

Possible student teachers' responses

Will vary depending on the student teachers' experiences and opinions.

Check student teachers' understanding (15 minutes)

1. Ask student teachers to call out a list of teaching and learning materials.
2. Nominate a few student teachers to present one of the main ideas in this lesson from the textbook about teaching aids.

Period 2

Learning activity 4: Classification (15 minutes)

1. Individually, each student teacher rates the importance of using teaching and learning materials other than textbooks when teaching lessons. One (1) is not important at all and five (5) is extremely important.
2. Ask student teachers to compare their answers and reasons in pairs or small groups.
3. Student teachers read the *'Why are teaching aids important?'* section of Sub-unit 4.4.
4. Are the reasons given here the same or different than the reasons they mentioned?

Assessment

Circulate and pay an active interest in student teachers' opinions. Encourage them to justify their opinions. Again the assessment here is focused on student teachers' ability to recognise and analyse teaching aids as they have been described so far.

Possible student teachers' responses

Will vary based on student teachers' opinions.

Learning activity 5: Teaching aids (25 minutes)

1. Ask student teachers to read the 'Teaching Aids on Classroom Walls' section of Sub-unit 4.4 and note what they can see on the walls.
2. In small groups, ask student teachers to decide on four to six teaching aids in their Education College courses that they could create a poster to represent.
3. Ask each group to share their ideas. A volunteer can write these on the board as they are mentioned. If an idea is shared by more than one group, do not write it down a second time.
4. Each group will create a teaching aid poster for one of the concepts mentioned. No two posters can be about the same teaching aid.
5. Provide flipchart papers and markers to each group.
6. Student teachers have time remaining in the class period to create and present their posters.

Assessment

Assess the extent to which student teachers' recognise the value of various teaching aids. They may choose a worksheet they have used in another module, for example. In that case, they need to communicate how this worksheet was used. How effective was it as a teaching aid? How did it help them to learn about the topic? How did they use it the lesson? How was it assessed? How could they use the worksheet to apply the learning? How could they consolidate and follow-up the learning in the worksheet? Would they do anything to improve it?

Possible student teachers' responses

Will vary depending on teaching aid selected, but should approach the elements mentioned above, plus many possible other angles.

Check student teachers' understanding

1. Give student teachers' some time to review all the posters to consolidate their understanding of various teaching aids.
2. Ask them to read Lesson 4.4.2 'Worksheets'.

Extension and differentiation activities

Learning activity 4: Various groupings and feedback strategies could be employed in this activity. Consider what works best for your students and the classroom space.

Learning activity 5: Student teachers could search the internet for photos of classrooms and find teaching aids they like. Alternatively, there are several websites offering teaching aids to download – student teachers could also use one of these for their poster.

4.4.2. Worksheets as teaching aids

Expected learning outcomes

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

- Describe the importance of teaching aids and how to use them effectively in different circumstances.

Competencies gained: A2.1 Demonstrate understanding of a variety of teaching and learning strategies and resources

Time: One period of 50 minutes

Learning strategies: Reading; small group discussion; task-based learning

Preparation needed: Read this lesson and teach yourself the content using the strategies presented in Sub-unit 4.1. Prepare Powerpoint slides or overheads of worksheets and handouts.

Learning activity 1: Introduction (15 minutes)

1. Student teachers read the section on worksheets.
2. Show some Powerpoint slides or overheads depicting worksheets and some depicting other types of one-page handouts that are not worksheets (these are handouts that do not have questions or cues for students to write or draw something).
3. Student teachers vote whether they think the example is a worksheet or not a worksheet.

Learning activity 2: Find and create worksheets (30 minutes)

1. Student teachers browse the internet or look through teaching resource books for worksheets for primary level students (any module). One useful site is https://www.kidzone.ws/. Another is Pinterest.
2. In small groups, student teachers work together to create a worksheet (not a diagram) to help students understand the meaning of *'What Do You Say?' 'How Bees Make Honey,'* or *'The Water Cycle.'*

Assessment

Assess student teachers' worksheets based on the criteria below.

Possible student teachers' responses

Worksheets should contain tasks for students to complete such as filling in a gap or circling correct response to a question. Make sure they contain easy to read and easy to understand instructions. Make sure they are appropriate to primary school level.

Check student teachers' understanding (5 minutes)

Ensure that all student teachers are clear on the difference between worksheets and other handouts. A worksheet is a handout that a student interacts with; that is, a student draws, writes or circles some words. A worksheet has instructions as to what the students need to do. Other handouts, such as diagrams or sheets of information, are one-way communication to the students: students are not required to do anything on the page.

Extension and differentiation activities

Learning activity 2: Based on their knowledge of primary module contents, student teachers can create worksheets for one or more primary school module.

4.4.3. Videos as teaching aids

Expected learning outcomes

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

- Describe the importance of teaching aids and how to use them effectively in different circumstances.

Competencies gained: A2.1 Demonstrate understanding of a variety of teaching and learning strategies and resources

Time: One period of 50 minutes

Learning strategies: Discussion; video; comparison chart

Preparation needed: Select an appropriate video of a lesson from the JICA/ CREATE Project YouTube channel: https://www.youtube.com/channel/ UC0pW4hIlFEAbZiN_4ez9hRA/videos. The lesson you choose should show a variety of teaching and learning materials

Resources needed: Equipment to watch YouTube video

Learning activity 1: Warm-up (5 minutes)

1. Ask the class: 'What are the two types of teaching and learning materials that have been discussed so far?' Ask the class what these teaching and learning materials have in common.

2. Ask the class: 'Can you think of teaching and learning materials that are not paper-based, which you can use in the classroom to supplement the textbook?' There will be many correct answers to this question. Let your class brainstorm a few. If they do not brainstorm videos, then suggest it. If they do brainstorm videos, then ask a few questions about that idea: 'Can you think of any examples from you Education College courses so far where videos have been used as teaching aids? What are some advantages to using videos?'

Assessment

The answers to these questions will give you a summary of student teachers' understanding of the difference between the teaching and learning materials studied in this unit.

Possible student teachers' responses

The teaching and learning materials discussed so far are teaching aids on classroom walls and worksheets. Student teachers should identify that they are paper-based aids.
Student teachers may suggest various non-paper teaching and learning materials. Among them, we are looking for the word 'video'.

Learning activity 2: Video analysis (15 minutes)

1. Tell student teachers that you are going to watch an instructional video about a teaching and learning activity in a Myanmar primary school.
2. Ask them to note down all the teaching and learning materials they see.
3. Generate a big list on the board or flipchart paper of the all of the items they noted down.
4. Watch the video a second time to check the list.
5. Some videos are intended for teachers, some videos are intended for students, some videos are intended for both. Who do student teachers think the intended audience for this video is? Why?

Learning activity 3: Comparison chart (20 minutes)

1. Ask student teachers to work in small groups and make a list of advantages and disadvantages of each of the four types of teaching and learning materials discussed.

Table 4.2. Comparison chart

TLM	Advantages	Disadvantages
Posters		
Worksheets		
Videos		
Real world objects		

Assessment

Make sure that student teachers understand that teaching and learning materials need to be used to support students in achieving the learning outcomes; they should not be used just because they are interesting – they need to be directly related to the learning outcome of the lesson. There are advantages and disadvantages to different teaching and learning materials, but just because a teaching aid has some disadvantages, it does not mean teachers should not use it. It is important to have some variety in the types of teaching aids used. Even the most interesting teaching aids will fail to engage students if they are used all the time.

Possible student teachers' responses

Will vary according to student teachers' opinions. Be prepared to talk about your own experiences of using different teaching and learning materials.

Extension and differentiation activities

Learning activity 2: Student teachers could select a lesson from a Primary Textbook or Teacher Educator Guide (any module) and make a video teaching aid – this may be a demonstration of a song, an exercise routine, a science experiment or how to solve a mathematics problem. There are countless examples on YouTube and other video websites.

Review questions: Possible student teachers' responses

Question 1: Write a short paragraph to describe a type of teaching aid and how it could be used in a lesson.

Answer: Worksheets could be used for practice or review, videos could be used to present concepts, wall posters could be used as visual reminders of main concepts and teachers could direct students' attention to the posters when those concepts come up during a lesson.

4.5. Characteristics of good learning activities

Some learning activities require TLM, and others do not. Knowing how to recognise good learning activities and how to create them is necessary for student teachers to complete Step 5 of the 10 Step planning and preparation process. Step 5 is: Using their knowledge of activities and methods, and the importance of sequencing and variety, visualise what they will be doing and what students will be doing during the lesson which will lead them to the learning outcomes.

4.5.1. Learning activities

Expected learning outcomes

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

- Describe what a learning activity is and explain the characteristics of a good learning activity.

Competencies gained: A2.1 Demonstrate understanding of a variety of teaching and learning strategies and resources

Time: Two periods of 50 minutes

Learning strategies: Pair discussion; group project

Preparation needed: Read and understand Sub-unit 4.5. Prepare slips of paper with one learning activity written on each slip[5]

Resources needed: Paper slips, as above; a container for the paper slips; laptop with wifi connection; projector; marker pens

Period 1

Learning activity 1: 'Do what I say, not what I do' game (15 minutes)

Stop and think

You may have to practise a bit at home before you play this game but it is a fun warm-up activity. The key to making it fun and challenging for your student teachers is that you will say a word at the same time you do an action. Sometimes the word and the action will correspond. Sometimes they will not! The challenge is for student teachers to do what you say every time – when it matches the action that you do, and when it does not match the action that you do.

1. Demonstrate the vocabulary and associated actions. Students should do what you do:

    - Jump and say the word 'jump' at the same time.
    - Reach (hands up high in the air) and say the word 'reach' at the same time.
    - Spin around and say the word 'spin' at the same time.
    - Bend and say the word 'bend' at the same time.
    - Scratch and say the word 'scratch' at the same time.

2. You can use more words and actions if you like: kick, dance, and fly (arms out to your sides) are some other possibilities.

[5] May include: playing games, active reading, making presentations, singing songs, writing, conducting simple experiments, completing worksheets, drawing, researching, watching videos, painting/colouring, debating/discussing, role playing, solving puzzles, individual or team problem-solving

3. Now you are ready to play. Tell the student teachers: *'I want you to watch and listen. I want you to do what I say, and not what I do!'*
4. The first two times do the same action that you say.
5. On the third time, do a different action than what you say. (Do not tell the student teachers it will be different.) If you say 'bend' then do not bend, but instead spin, jump or scratch at the same time as you say the word 'bend.' Some student teachers will do what you say, but others will do what you do.
6. Play a few more times where you sometimes say what you do and sometimes say something different than what you do.
7. Ask if one of your student teachers if he or she would like to be the leader.

Assessment

Encourage student teachers to self-assess their ability to follow and give clear instructions, even when there are distractions.

Possible student teachers' responses

This is a fun activity but should illustrate to student teachers the importance of giving clear instructions, demonstrating instructions, and listening. It also illustrates some of the challenges faced by primary school students who need clear instruction and demonstration in order to have the best chance of achieving a learning outcome.

Learning activity 2: Brainstorming (20 minutes)

1. Ask student teachers to brainstorm a list of learning activities they have experienced while studying at the Education College. Write student teachers' responses on the board.
2. Individually, student teachers compare the list on the board with the list in the textbook. Did their list include some activities not mentioned in the textbook? Did the textbook list include some activities they did not mention?

3. Note that some activities are learning activities, and some are not. For example, games like 'tag' or 'rock, paper scissors' are almost never learning activities. They do not move students toward the learning outcomes of the lesson unless the outcomes are related to increasing coordination or understanding probabilities/odds, respectively.
4. Individually, ask student teachers to identify which learning activities they prefer and which ones they do not prefer. Why?
5. Student teachers mingle around the room, comparing their preferred learning activities and reasons to their classmates' responses.

Assessment

Formatively assess your student teachers' knowledge of the range of learning activities available to them. You will also be able to assess which learning activities your student teachers are less comfortable teaching, so you will be able to help them develop in areas in which they feel less confident.

Possible student teachers' responses

Some student teachers may suggest activities that do not promote learning, as described above. Involve yourself in the discussion stage; listen and contribute to student teachers' discussions as your experiences will give them a deeper understanding of the advantages and disadvantages of various learning activities.

Learning activity 3: Discussion (15 minutes)

1. Individually, student teachers read the list about characteristics of a good learning activity from their textbooks.
2. In pairs or small groups, they discuss whether they agree or disagree with these points. Can they think of any other characteristics of a good learning activity?
3. After the discussion, ask each student teacher to draw a slip of paper from the lucky draw bowl. Each slip of paper should have a type of learning activity written on it (some will be included more than once). Student teachers can keep their lucky draw slip or trade it with someone else who wants to trade.

4. In the next period, student teachers will share information about their learning activity with the class.
5. For homework, they should prepare a brief presentation. Their presentation should include a brief description of the activity, situations in which the activity may be useful, and advantages and disadvantages of the activity.

Assessment

Formatively assess and help your student teachers to understand the most important characteristics of a learning activity so that they are prepared to give a presentation.

Possible student teachers' responses

Student teachers should be able to say if they agree or disagree with what makes a good learning activity. Some student teachers may be able to offer further characteristics of a good learning activity.

Extension and differentiation activities

Learning activity 1: You may need to demonstrate the activity more than once. It may even be helpful to ask a student teacher to demonstrate to check understanding. Be aware of neurological diversities which may make this game challenging, confusing or frustrating for some student teachers.

Learning activity 2: Invite personal opinions and encourage justification of those opinions.

Learning activity 3: If you are feeling generous, allow student teachers to choose or swap their random learning activity for one with which they feel more comfortable. Conversely, challenge confident student teachers to present on a learning activity that is completely new to them.

Period 2

Learning activity 4: Warm-up (5 minutes)

1. Ask student teachers what should be included in their presentation about a learning activity.

Assessment

A successful answer to this question will enable you to assess if your student teachers are ready to give their presentations.

Possible student teachers' responses

Responses should be: Description of the activity, situations in which the activity would be useful, and advantages and disadvantages of the activity.

Learning activity 5: Presentations (35 minutes)

1. Split the class into presentation groups of around six to eight student teachers.
2. Student teachers take turns presenting their type of learning activity.

Assessment

It will be impossible for you to grade every presentation. Consider instead a form of peer-assessment – devise a rubric with which the student teachers may assess each other.

Possible student teachers' responses

Will vary depending on learning activity and preferred style of presentation but should include the elements stated above and communicate the information clearly.

Check student teachers' understanding (10 minutes)

In pairs, ask student teacher to tell their partner how they now feel about various learning activities. Do they have different preferences now compared with the start of this two-period lesson? What are the advantages and disadvantages of their preferred learning activities?

Extension activities and differentiation activities

Learning activity 5: Presentations could include any number of possibilities according to the creativity and wishes of each student teacher. They may present an example of the learning activity for the class to do; they may use technology resources; they may present in the form of a poem, poster, video…. The possibilities are endless.

Review questions: Possible student teachers' responses

Question 1: Describe the characteristics of a good learning activity.

Answer: A good learning activity:

- *effectively moves children toward the learning outcomes of the lesson;*
- *gives all students the chance to participate;*
- *is easily explained;*
- *is not too long;*
- *is one which after receiving initial instructions, students can perform relatively independently;*
- *is interesting; and*
- *develops more thinking skills than just remembering.*

4.6. Designing Teaching Activities

Teaching activities and learning activities go hand in hand. The teaching activities are what the teacher will do and the learning activities are what the students will do. Like Sub-unit 4.3 and Sub-unit 4.5, this sub-unit helps you to develop the knowledge and skills that you need to be able to visualise what you will be doing and what students will be doing during the lesson which will lead them to the learning outcomes.

4.6.1. Teaching activities for introducing a lesson and teaching main idea and related ideas of a reading

Expected learning outcomes

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

- Explain various types of teaching activities.

Competencies gained: A2.1 Demonstrate understanding of a variety of teaching and learning strategies and resources

Time: Two periods of 50 minutes

Learning strategies: Reading; pair discussion; group projects; practice; reflection

Preparation needed: Read this lesson and teach yourself the content using the strategies discussed in Sub-unit 4.1

Resources needed: Flipcharts and marker pens

Period 1

Learning activity 1: Warm-up: 'Pink toe' game (10 minutes)

1. Call out a colour and a body part. Student teachers must find an object in the room that has that colour and then touch the object with the selected body part.
2. For example, if the teacher calls out 'red nose,' student teachers need to find an object that is red and touch it with their nose.
3. Continue calling out different combinations of colours and body parts.
4. Ask a student teacher to volunteer to lead the game.

Assessment

The game itself is not assessed but you could assess student teachers' ability to recognise the teaching and learning opportunities that the game presents.

Possible student teachers' responses

Student teachers may recognise that the game could be used to improve coordination or recognise colours, body parts or objects.

Learning activity 2: Class discussion (10 minutes)

1. Lead a discussion about the warm-up activity. Did student teachers enjoy it? Do they think students would enjoy it? Do they think it has learning value for primary school students? Could it be modified to have more learning value?

2. For example, if teachers are teaching a lesson about our body joints - knees, ankles, elbow and knuckles, could they add a rule that if the body part is a joint, the students should touch it to the colour but if it is not a joint, they should stand in place?
3. Could it also have some learning value in a lesson about secondary colours?
4. Ask student teachers to generate other ways the game could be adapted to different modules.

Stop and think

Remind the class that the ability to adapt activities, resources and even entire lessons is a great teaching skill. It takes a lot of practice, patience, self-assessment and reflective thinking. The best teachers are those who do not just follow every word in the book but those who can adapt material to suit their students and their own teaching style.

Assessment

Formatively assess your student teachers' ability to recognise the potential for adaptation: any game or any activity can be adapted to various lessons and topics.

Possible student teachers' responses

Student teachers may be able to suggest further uses for this game.

Learning activity 3: Reading and brainstorming (15 minutes)

1. Tell student teachers that in the next six-class periods they will have the chance to plan and create teaching activities and to test those activities. Until we test our plans, we do not know if they are good plans or not.
2. Ask student teachers to read the first two paragraphs of this sub-unit in their textbook, and the two examples of activities for introducing a lesson about how to use dictionaries.
3. In pairs, student teachers compare the two examples and brainstorm other ideas for ways to introduce the lesson.
4. Elicit brainstormed ideas from pairs and list these ideas on a flipchart.

Assessment

Formatively assess the extent to which your student teachers can create introductory ideas. If pairs do not think of games or songs related to the lesson, give hints until the class identifies some interactive and creative ways to introduce the lesson.

Possible student teachers' responses

Student teachers may suggest games used in previous lessons in this unit or lesson ideas they have picked up from other modules in this course.

Learning activity 4: Group work (15 minutes)

1. Divide the class into three groups.

    a. Group 1 creates a teaching activity for introducing a lesson about 'How Bees Make Honey.'
    b. Group 2 creates a teaching activity for introducing a lesson about 'Ways that Animals Communicate.'
    c. Group 3 creates a teaching activity introducing a lesson about 'The Water Cycle.'

2. In the next period, group members will take turns practising being a teacher, walking into a primary classroom and introducing the lesson using the activity that has been planned.

Assessment

Circulate and assess groups' ideas as you move around the class. Encourage student teachers to self-assess their ideas: Does the activity introduce the topic? Is it a student-centred, active introduction? What elements of the lesson does it introduce?

Possible student teachers' responses

This may be a challenging task but remind student teachers that they may adapt the introductory activities used during lessons in this unit.

Period 2

Learning activity 5: Review (20 minutes)

1. Student teachers return to same groups as the previous class. They decide if they want to make any changes to the activity that they prepared in the previous class.
2. Form new groups of three, including one person from each of the three groups from the previous class.
3. Each student teacher takes a turn as the teacher introducing a lesson using the activity that was planned in the previous class. The other two group members pretend to be primary school students. Do three rounds of this exercise with each of the lessons. After all three rounds, student teachers should give feedback to each other on the activity.

Assessment

This activity is peer assessed.

Possible student teachers' responses

Groups should repeat and, preferably, improve their presentation of the introduction activities that they developed in the last period.

Learning activity 6: Reading and brainstorming (15 minutes)

1. Individually student teachers read the sections in Sub-unit 4.6 on presenting a concept and presenting the main idea and related ideas of a reading.
2. As a whole class, student teachers brainstorm some activities for introducing the main idea and related ideas of a reading.

Assessment

Formatively assess understanding of the reading and record the summary ideas on the board.

Possible student teachers' responses

Will be a summary of the reading.

Learning activity 7: Group work (15 minutes)

1. Divide the class into three groups that are different to the groups used in the last period.

    a. Group 1 creates a teaching activity for introducing the main idea in 'How Bees Make Honey.'
    b. Group 2 creates a teaching activity for introducing the main idea in 'What Do You Say?'.
    c. Group 3 creates a teaching activity for introducing the main idea in 'The Water Cycle.'

2. Groups could create their own ideas or use the internet to search for suitable teaching aids.

Extension and differentiation activities

Learning activities 1 & 2: Groups could play the game in the style of one of the suggested adaptations.

Learning activity 3: Student teachers may need support from the Student Teacher Textbook or Primary Textbooks.

Learning activities 4 & 5: Allow student teachers to be creative if they can – or they can adapt activities they have seen in this module. Give them freedom to experiment at this stage.

4.6.2. Activities for teaching vocabulary

Expected learning outcomes

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

- Explain various types of teaching activities.

Competencies gained: A2.1 Demonstrate understanding of a variety of teaching and learning strategies and resources

Time: One period of 50 minutes

Learning strategies: Reading; pair discussion; group project; practice; reflection

Preparation needed: Read this lesson and teach yourself the content using the strategies discussed in Sub-unit 4.1

Resources needed: None

Learning activity 1: Review (15 minutes)

1. Student teachers return to same groups as previous class. They decide if they want to make any changes to the activity for teaching the main idea that they prepared in previous class.

2. Form groups of three, including one person from each of the three groups which created activities in the last class period.
3. Each student teacher tests the activity that his or her group planned by role-playing a teacher introducing the main idea of a reading. The other two group members pretend to be primary school students. Do three rounds of this exercise with each of the lessons. After all three rounds, student teachers should give feedback to each other on the activity.

Assessment

This activity is peer assessed.

Possible student teachers' responses

Groups should repeat and, preferably, improve their presentation of the activities that they developed in the last period.

Learning activity 2: Group work (35 minutes)

1. Individually, student teachers read the section on teaching new vocabulary in Sub-unit 4.6.
2. Divide class into three groups, not the same groups as in the last class period.

    a. Group 1 creates a teaching activity for teaching difficult vocabulary in 'How Bees Make Honey.'
    b. Group 2 creates a teaching activity for teaching difficult vocabulary in 'What Do You Say?'
    c. Group 3 creates a teaching activity for teaching difficult vocabulary in 'The Water Cycle.'

3. Groups are encouraged to use the internet to search for teaching ideas that can be used or adapted. Groups will probably need to create some teaching aids for their activities.
4. Group members take turns practicing being a teacher, using their planned activities to teach the difficult vocabulary from the assigned reading.

Assessment

This activity is peer assessed.

Possible student teachers' responses

Groups should practise and improve their presentation of the vocabulary activities. Again, they may use or adapt activities that they have experienced in this or other EC modules.

Extension and differentiation activities

Learning activity 1: Groups may need support in developing their ideas or in the dynamics of group work.

Learning activity 2: It may be necessary to provide further examples of activities that teach new vocabulary. Groups may benefit from choosing a lesson in a primary level textbook upon which to base their activity.

4.6.3. Putting it all together

Expected learning outcomes

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

- Explain various types of teaching activities.

Competencies gained: B1.1 Demonstrate capacity to teach subject-related concepts and content clearly and engagingly

Time: Three periods of 50 minutes

Learning strategies: Group work; discussion; planning; creating; presentation
Preparation needed: Read this lesson and teach yourself the content using the strategies discussed in Sub-unit 4.1. Create marking criteria with which to assess the presentations.

Resources needed: Examples of teaching and learning materials (optional)

Period 1

Learning activity 1: Group work (40 minutes)

1. Divide student teachers into groups of five.
2. Each group is to prepare activities and TLM they need to introduce a lesson, teach the main idea and related ideas of the topic, and teach vocabulary. Each group chooses one of the three topics: how bees make honey, ways that animals communicate or the water cycle.

3. Drawing from their work in previous lessons, groups decide on the activities and the teaching aids that they need to introduce lesson, teach main idea and related ideas, and to teach vocabulary.
4. Groups practise teaching using the planned activities and supporting TLM.

Assessment

You will assess the presentations in the following two periods. At this time, it would be useful to formatively assess the student teachers' ability to manage and facilitate group work.

Possible student teachers' responses

Student teachers should be working towards giving presentations that include activities practised in the previous lessons, presenting and creating activities for the introduction, main idea, related ideas and new vocabulary.

Check student teachers' understanding (10 minutes)

Ask a representative from each group or a selection of groups, to summarise their content and progress.

Period 2

Learning activity 2: Presentations (40 minutes)

1. Taking turns, half the groups give teaching presentations using the activities and TLM they have prepared and practised for introducing the lesson, teaching the main idea and related ideas and teaching new vocabulary.
2. The other student teachers take the role of primary school children during the teaching presentations. They should behave and respond as though they expect primary school children would behave and respond.

Assessment

Grade the teaching activities and TLM each group used to introduce the lesson, teach the main idea and related ideas and teach new vocabulary according to your own marking criteria.

Possible student teachers' responses

The presentations should include activities practised in the previous lessons, in which the student teachers prepared and practised presenting and creating activities for the introduction, main idea, related ideas and new vocabulary.

Check student teachers' understanding (10 minutes)

Following the presentations, lead a class discussion about the activities and TLM which were particularly effective. Ask student teachers to explain how and why specific materials were effective.

Period 3

Learning activity 3: Presentations (40 minutes)

1. Taking turns, the remaining half of the groups give teaching presentations using the activities and TLM they have prepared and practiced for introducing the lesson, teaching the main idea and related ideas of the reading and teaching new vocabulary.

Assessment

Grade the teaching activities and TLM each group used to introduce the lesson, teach the main idea and related ideas and teach new vocabulary according to your own marking criteria.

Possible student teachers' responses

The presentations should include activities practised in the previous lessons, in which the student teachers prepared and practised presenting and creating activities for the introduction, main idea, related ideas and new vocabulary.

Check student teachers' understanding (10 minutes)

Following the presentations, lead a class discussion about the activities and TLM which were particularly effective. Ask student teachers to explain how and why specific materials were effective.

Extension and differentiation activities

Learning activities 1-3: Groups could create a video demonstration of themselves teaching the lesson with the activities and TLM they have prepared.

Review questions: Possible student teachers' responses

Question 1: What are the five principles of designing teaching activities?

Answer:

1. *Children already have knowledge about the world.*
2. *Do not present too many new concepts or details at one time.*
3. *When presenting new concepts, stop often to ask questions to check that the students understand what you are saying. Do not simply ask 'do you understand?'*
4. *Teach strategies that will help students to remember new information.*
5. *Teaching thinking skills is interwoven with teaching concepts. Whenever you teach a concept, you are also teaching or drawing on students' existing skills related to understanding and critical thinking.*

4.7. Lesson Planning

Lesson planning is not just one step in the 10 Step process. Lesson planning is Steps 3-10. This sub-unit will better equip you for Steps 5, 6, and 10 which are:

5. Using your knowledge of activities and methods, and the importance of sequencing and variety, visualise what you will be doing and what students will be doing during the lesson which will lead them to the learning outcomes;

6. Decide how much time to allow for each activity; and

10. Document your plan on a lesson plan template.

4.7.1. Sequencing, chunking, estimating time, documenting the plan

Expected learning outcomes

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

- Explain what needs to be considered in order to prepare a good lesson plan.

Competencies gained: B1.1 Demonstrate capacity to teach subject-related concepts and content clearly and engagingly

Time: One period of 50 minutes

Learning strategies: Reading; peer teaching; group discussions

Preparation needed: Read this lesson and teach yourself the content using the strategies discussed in Sub-unit 4.1.

Resources needed: Children's puzzles – ideally 10 puzzle pieces per puzzle. They do not all have to be the same puzzle, but all puzzles need to have to have the same number of pieces.

Learning activity 1: Introduction/Review (10 minutes)

1. In small groups, students complete simple jigsaw puzzles which have each had 3 pieces removed by the teacher educator. Explain that students will have a chance to finish the puzzles later.
2. Elicit from the student teachers all the things they are now able to do regarding planning and preparing for a lesson. To do this, refer to the 10 steps to planning and preparing *(see Unit 4 Introduction)*. The puzzle pieces the groups have to represent these skills.
3. Ask the class to identify the steps (or parts of steps) that they have not learned yet. These are represented by the missing puzzle pieces.

Assessment

This is a good opportunity to formatively assess how confident your student teachers are with the 10 steps to planning and preparing. It will reveal which of the steps they think the need to practise or study more. Remind them that this is the first experience of these skills, which will be practised extensively over the coming months and years in this module and in Practicum.

Possible student teachers' responses

The steps that have not been addressed at all yet are steps 5, 6 and 10.

Learning activity 2: Reading and peer teaching (15 minutes)

1. Divide the class into two groups, Group A and Group B. This can be a simple 'down the middle' split.
2. All students read Sub-unit 4.7 in their textbook beginning at the section entitled 'Variation' up to the section entitled 'Who will see the completed lesson plan?'

    a. Group A students pay close attention to the content about variation and sequencing.
    b. Group B students pay close attention to the content about chunking and estimating time.

3. When they are finished reading, A's find partners who are B's. Using the textbook as a resource, A's explain variation and sequencing to B's. B's explain chunking and estimating time to A's.

Assessment

This task is peer-assessed.

Possible student teachers' responses

Will come from the information in the Student Teacher Textbook.

Learning activity 3: Class discussion (15 minutes)

1. Lead a class discussion about the concepts of variation, sequencing and chunking.
2. Can student teachers give examples from their own experiences as students in this program of teacher educators using variation, chunking and sequencing?
3. If they cannot give examples, ask them to think about their experiences in recent classes. Did they experience only one type of activity – groups discussions, role plays, case studies, small group presentations, individual reading? There are 10 steps to planning and preparing for a lesson. How have the steps been 'chunked' for learners?

4. Student teachers reflect on the activities that they developed in the previous classes. Did the teaching activities they used in their teaching presentations take more time than they had anticipated? Less time? Ask teachers what some possible reasons could be.

Stop and think

The most important thing for time management is to be able to be flexible with the plan. Do not drag out an activity if it finishes early. Do not cut an activity off if students are very involved and learning a lot, just because 'time is up'.

5. Issue two of the three missing puzzle pieces to each group and allow time for them to finish the puzzle except for the one missing piece.

Assessment

This will give you a summary assessment of student teachers' understanding of these concepts.

Possible student teachers' responses

Sequencing means deciding which activities should happen in which order. Chunking refers to breaking information down into manageable pieces. Encourage student teachers to find examples of these concepts from previous lessons in this module.

Time management problems could arise from different numbers of students in the two classes, different levels of interest/ engagement among students, different emotional 'states'. For example, if one class had just come from a PE lesson and another class had just come from a very difficult Maths test, would the students' feelings be the same?

Check student teachers' understanding (10 minutes)

1. Student teachers individually read from 'What is a lesson plan' to 'Variation' in their textbooks.
2. Ask whether they can imagine themselves approaching steps 5 - 10 in this way. Are there any other questions they would like to add? Where would they add them?
3. Ask student teachers…what piece of the puzzle is still missing? The answer should be something about writing the plan down.
4. Briefly review the blank lesson template at the end of Sub-unit 4.7. Lead a class discussion about the template. Do student teachers think this is a useful template? Can they imagine themselves using it to document a lesson? Why or why not?
5. Point out that this template is just one of many formats for documenting a lesson plan. Teachers may be provided with different ones by their school or they may have the option to develop their own. They will also have considerable practice in making lesson plans over the duration of this course.
6. Issue the final puzzle piece to each group.

Extension and differentiation activities

Discussion activities: Before class discussions, give student teachers the opportunity to discuss in pairs or small groups.

Learning activity 3: Develop a quiz with questions about chunking, sequencing, estimating time and documenting the lesson plan.

4.7.2. Teaching the seasons

Expected learning outcomes

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

- Explain what needs to be considered in order to prepare a good lesson plan; and
- Prepare a draft lesson plan and assess it using criteria for good lesson planning.

Competencies gained: B1.1 Demonstrate capacity to teach subject-related concepts and content clearly and engagingly

Time: One period of 50 minutes

Learning strategies: Reading, peer teaching, large group discussions

Preparation needed: Read this lesson and teach yourself the content using the strategies discussed in Sub-unit 4.1.

Learning activity 1: Warm-up: 'Buzz' game[6] (5 minutes)

1. All student teachers stand in a circle. Everyone takes turns saying a number starting with 1, 2, 3 and so on. Of course, there is a catch. At every number with a 4 in it or a multiple of 4, (i.e. is divisible by 4) that person needs to say BUZZ instead of the number. The next person just continues the series as normal.
2. *For example: 1 - 2 - 3 - buzz - 5 - 6 - 7 - buzz - 9 - 10 - 11 - buzz - 13 - buzz - 15 - buzz - 17 - ...*
3. You can choose any number that might be relevant and replace the buzz with another word.

[6] Source: https://www.bookwidgets.com/blog/2016/10/15-fun-classroom-energizers-for-students

Learning activity 2: Reading and discussion (20 minutes)

1. Student teachers individually to read the 'Teaching the seasons' lesson plan. While they are reading, write the following questions on the whiteboard:

    a. What are your thoughts about this lesson?
    b. Will students be likely or unlikely to achieve the learning outcomes?
    c. Why do you think so?

2. Divide the class into small discussion groups. Groups discuss the questions you have written on the board. Tell student teachers that it is not important to reach consensus, at this point they are just exchanging opinions and the reasons for those opinions.

Assessment

Ask the class whether they think that this is a good lesson plan or not. What are the reasons for their thinking?

Possible student teachers' responses

Student teachers will have developed their opinions from the discussion. There is no single correct answer, rather it is an opportunity for student teachers to be autonomous and justify their opinions.

Learning activity 3: Lesson plan for teaching the seasons (20 minutes)

1. Divide student teachers into pairs.
2. Referring to the 10 steps for planning and preparation, and the questions related to visualising at the beginning of this unit, each pair completes the lesson plan template. They can include the same activities or, if they would have a different plan, they can include different activities.
3. When finished, each pair joins with another pair. They compare their lesson plans for teaching the seasons.

Assessment

Circulate while pairs are working on their lesson plans, notice who is having difficulties and who is not. It may be necessary to present examples of each element of the plan from selected pairs – this way the rest of the class can self-assess to make sure they are on the right track.

Possible student teachers' responses

Student teachers should focus on completing as many sections as they can. It is more important that they complete some sections well rather than all sections badly.

Check student teachers' understanding (5 minutes)

1. Lead a group discussion. Ask student teachers: *'Did using the lesson template help you to plan a lesson for teaching the seasons?'*
2. What was easy or difficult about it?

Extension and differentiation activities

Learning activity 1: Multiple sounds can replace multiple numbers, for example, 'fizz'=3, 'buzz'=5. Note that in this case numbers divisible by both 3 and 5 (for example, 15) need to be replaced with 'fizz-buzz!'

Learning activity 2: Give a brief lecture summarising the key points of the text in place of individual reading.

Learning activity 3: Direct student teachers to the example lesson plans in this unit. Student teachers may not be able to complete the entire lesson plan in the time. Aim for success in parts rather than a mediocre whole.

4.7.3. Comparing and creating lesson plans

Expected learning outcomes

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

- Explain what needs to be considered in order to prepare a good lesson plan; and
- Prepare a draft lesson plan and assess it using criteria for good lesson planning.

Competencies gained: B1.1 Demonstrate capacity to teach subject-related concepts and content clearly and engagingly

Time: One period of 50 minutes

Learning strategies: Comparison analysis; group work

Preparation needed: Read this lesson and teach yourself the content using the strategies discussed in Sub-unit 4.1

Resources needed: One-page lesson plan template from Student Teacher Textbook

Learning activity 1: Comparison analysis (20 minutes)

1. Divide the class into small groups. Groups review the Student Teacher Textbook lesson plan for teaching the seasons.
2. Individually, student teachers read the lesson plan for first grade Maths. Encourage them to read it at least twice so that they understand it well before they proceed to the discussion.

3. In their groups, student teachers compare the Maths lesson plan with the seasons lesson plan, considering the following questions:

    a. The topics are different. What other differences do you notice between the two lesson plans?
    b. What similarities are there?
    c. Is one better than the other? Why?

Assessment

This task is partially peer-assessed as student teachers respond to each other's opinions and ideas. You will also be able to formatively assess their understanding of what makes an effective lesson plan.

Possible student teachers' responses

It is not important to reach consensus. It is important to share opinions and reasons for opinions. Two or more student teachers may have the same opinion about which one is better but different reasons for those opinions.

Learning activity 2: Small group work (15 minutes)

1. Student teachers try to transpose the Maths lesson plan into the blank template.
2. Is all the information needed to complete the blank template available in the Maths lesson plan?
3. If not, what is missing?

Assessment

Collect the completed templates to mark.

Possible student teachers' responses

It should be possible to complete most sections. Materials will need to be drawn out of the main text. Student teachers will need to create their own success criteria.

Learning activity 3: Creating a lesson plan (15 minutes)

1. Groups start to plan and prepare for a lesson related to the water cycle.
2. They should refer to the information on the water cycle in Lesson 4.1.2, the 10 steps to planning and preparing, the questions related to visualising at the beginning of this unit, and the lesson plan template.
3. They should complete the plan first and then, if time permits they can create or find TLM to use in this lesson.

Assessment

This task will be continued in the next lesson. Briefly assess and check that the student teachers have started the task successfully.

Possible student teachers' responses

Student teachers should start by mentally preparing themselves with the information about the topic and the steps to planning and preparation. They should discuss the possibilities at this stage. They are unlikely to start writing a plan in this lesson.

Extension and differentiation activities

Learning activity 1: Record the student teachers' ideas on the board in the form of a whole class brainstorm.

Learning activity 2: Some student teachers may prefer to do this task individually.

Learning activity 3: Student teachers could be given a freer choice of lesson topic.

4.7.4. Creating lesson plans

Expected learning outcomes

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

- Prepare a draft lesson plan and assess it using criteria for good lesson planning.

Competencies gained: B1.1 Demonstrate capacity to teach subject-related concepts and content clearly and engagingly

Time: Two periods of 50 minutes

Learning strategies: Small group project; presentation

Preparation needed: Read this lesson and teach yourself the content using the strategies discussed in Sub-unit 4.1

Resources needed: Flipchart paper and markers

Period 1

Learning activity 1: Lesson planning (20 minutes)

1. Review criteria for a good lesson plan from the textbook.
2. Groups continue working on their water cycle lesson plans from the previous lesson.

Learning activity 2: Presentations (20 minutes)

1. Each group presents their lesson plan using a flipchart or board so the whole class can see the lesson plan.
2. Classmates ask questions and provide feedback.

Check student teachers' understanding (10 minutes)

1. Summarise the key points about lesson planning – learning outcomes, success criteria, the 10 steps to planning and preparation, visualising, and so on.
2. Point out some of the successes from the presentations.
3. Remind student teachers of the importance of lesson planning and that they will have plenty of practice over the duration of the course.

Period 2

Learning activity 3: Lesson planning (45 minutes)

1. Divide the class into pairs. Each pair should be called Pair A or Pair B.
2. Pair A student teachers will create a 20-minute lesson plan for the reading *'What Do You Say?'* in Lesson 4.1.1.
3. Pair B student teachers will create a 20-minute lesson plan for the reading *'How Bees Make Honey'* in Lesson 4.1.2.
4. This task consolidates all the learning about lesson planning.

Check student teachers' understanding (5 minutes)

1. Remind student teachers what they have achieved over this series of lessons on lesson planning, and that now they are able to devise a short lesson plan.
2. Remind them that planning and preparation are the 'foundation stones' of successful teaching and learning. Failing to prepare is preparing to fail.

Extension and differentiation activities

Learning activity 1: A freer choice of topic may be given.

Learning activity 2: It may be necessary to split the class into smaller presentation groups if whole class presentation is not practical.

Learning activity 3: A freer choice of topic may be given.

4.7.5. Presenting lesson plans

Expected learning outcomes

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

- Assess a lesson plan using criteria for good lesson planning.

Competencies gained: B1.1 Demonstrate capacity to teach subject-related concepts and content clearly and engagingly

Time: One period of 50 minutes

Learning strategies: Small group presentations

Preparation needed: None

Resources needed: None

Learning activity 1: Group work (10 minutes)

1. Form groups of four by joining two pairs from the previous lesson (Pair A + Pair A and Pair B + Pair B).
2. They have 10 minutes to compare their lesson plans from the previous lesson and give constructive feedback.

Learning activity 2: Presentations (30 minutes)

1. Form presentation groups consisting of two or three Pair As and two or three Pair Bs.
2. Each pair should present (not demonstrate) their lesson plan to the group.
3. The rest of the group can assess the lesson plan based on the criteria for good lesson planning from Lesson 4.7.5 in the Student Teacher Textbook.

Assessment

This task is self-assessed at this stage.
Homework assignment: Maximum two-page essay on how to plan a lesson. Remind student teachers not to copy directly from the textbook or other sources.

Possible student teachers' responses

Student teachers should use the criteria in Lesson 4.7.5 to assess each other's lesson plans. Essays should show an understanding of the lesson planning process according to the learning in his unit.

Check student teachers' understanding (10 minutes)

1. Invite comments from groups on the strengths of each pair's lesson plan.
2. Alternatively, ask pairs to make self-assessment comments on their own lesson plans.

Review questions: Possible student teachers' responses

Question 1: Explain the 10 steps involved in the process of lesson planning.

Answer:

1. *Teach yourself the main idea, related ideas and supporting details of the lesson content.*
2. *Anticipate what content students might already know, based on life experiences and previous learning. Anticipate what (on topic and off-topic) questions students may have, and how they will respond to both types of questions.*
3. *Determine one or more SMART learning outcomes for your lessons.*
4. *Determine success criteria.*
5. *Using your knowledge of activities and methods, and the importance of sequencing and variety, visualise what you will be doing and what students will be doing during the lesson which will lead them to the learning outcomes.*
6. *Decide how much time to allow for each activity.*
7. *Determine teaching and learning materials (TLM) required for each activity.*
8. *Adapt existing TLM from the internet or create new ones.*
9. *Anticipate obstacles which may interfere with your lessons going as planned (for example, electricity outage may happen at time a teacher is are planning to show a video) and what you will do to keep the students moving forward toward the learning outcomes.*
10. *Document your plans on lesson plan templates and keep copies and keep it for future use.*

Unit Summary

Key messages

- The skill of planning and preparation is a skill you can learn and practice.
- There are 10 steps to planning and preparing for lessons.
- Teach yourself the main idea, related ideas and supporting details of the lesson content.
- Anticipate what content students might already know, based on life experiences and previous learning. Anticipate what (on topic and off-topic) questions students may have, and how they will respond to both types of questions.
- Determine one or more SMART learning outcomes for the lesson.
- Determine success criteria.
- Using their knowledge of activities and methods, and the importance of sequencing and variety, visualise what you will be doing and what students will be doing during the lesson which will lead them to the learning outcomes.
- Decide how much time to allow for each activity.
- Determine teaching and learning materials (TLM) required for each activity.
- Adapt existing TLM from the internet or create new ones.

- Anticipate obstacles which may interfere with your lessons going as planned (for example electricity outage may happen at time a teacher is planning to show a video) and what you will do to keep the students moving forward toward the learning outcomes.

- Document the plans on lesson plan templates and keep it for future use.

- Planning starts with teaching ourselves first.

- Good teachers make a plan.

- The plan includes a variety of activities and teaching aids which will help your students reach the learning outcomes.

- The plan includes activities which create opportunities for your students to discover things themselves and learn from each other as well as ones which involve learning from the teacher.

- There is not one single ‘right’ way to plan a lesson. There are many right ways.

- Even the very best teachers had a tough time with planning and preparation at the start of their teaching careers. It is difficult but, like most things it gets easier with practice.

Unit reflection

In your first year or so of teaching, be prepared for lesson planning to take up much of your free time. It is quite normal for the planning to take considerably longer than the lesson itself. Remember in this time of hardship that it will be worth it in the end because it will make you a better teacher – in the short-term because you will have well-planned lessons, and in the long-term because you will have had lots of practice of teaching well-planned lessons! As you become more experienced, you will find that your lesson planning becomes quicker, and that you are more confident when it comes to improvising in the classroom. Still, there is no substitute for good planning and preparation.

Included in your planning is the matter of resources. There is currently a trend for 'resource-light teaching', that is lessons which require few or zero resources, reducing energy from printing and waste from the amount of paper that is used. Again, this is probably an ambitious aim in your first years, as the experienced teacher can replicate the effects of a resource by seemingly conjuring up student-led tasks, rather than relying on paper-based materials. This does, however, lead us to the highly important matter of the student-centred classroom. Remember that although you are the teacher, you are a facilitator of learning, not simply a purveyor of knowledge. This means your job is to encourage active learning – curiosity, problem-solving skills, critical thinking – not just to transfer facts. So do not be afraid to give your students the job of finding solutions for themselves, rather than giving them everything on a plate.

Finally, one of the most important aspects of lesson planning comes after the lesson. It is at this time that you must reflect on your teaching and plan to rectify or improve those elements of the lesson that you believe you could do better or would like to do differently next time. A lesson rarely goes perfectly to plan. You have a whole class of students who will be sure to mess up your plans! But if you can plan for learning in the beginning and see learning at the end, you are on the right track.

Further reading

4.1.

Roell, K. (2019). Study tips for better grades: how to find the main idea. Retrieved from ThoughtCo. website: https://www.thoughtco.com/how-to-find-the-main-idea-3212047

Meador, D. (2019). Strategies for Teachers: The Power of Preparation and Planning.

4.2.

Oregon Diploma. (2007). High School Graduation Requirements. Retrieved from https://www.oregon.gov/ode/students-and-family/OregonDiploma/Pages/default.aspx

UNCW. (n.d.). *Writing SMART Learning Objectives.* Retrieved from https://uncw.edu/career/documents/writingsmartlearningobjectives.pdf

4.3.

The Room 241 Team. (2012). Teacher-centered vs. student-centered education? Retrieved from A blog by Concordia University-Portland. website: https://education.cu-portland.edu/blog/classroom-resources/which-is-best-teacher-centered-or-student-centered-education/

Bridge TEFL. (2017). Teaching English Grammar with the Guided Discovery Approach. Retrieved from https://bridge.edu/tefl/blog/teaching-english-grammar-guided-discovery-approach/

Strategies for the Social Studies Classroom: Role Play/Simulation. (n.d.). Retrieved from https://otis.coe.uky.edu/ccsso/cssapmodules/sbp/sbp/Role PlaySimulation.html

Fizzics Education. (n.d.). How to Teach Science Using Role Plays. Retrieved from https://www.fizzicseducation.com.au/articles/how-to-teach-science-using-role-plays/

4.4.

The School House. (2017). Decoration or distraction: the aesthetics of classrooms matter, but learning matters more. Retrieved from The Conversation website: http://theconversation.com/decoration-or-distraction-the-aesthetics-of-classrooms-matter-but-learning-matters-more-83418

Kidzone Worksheets for Children. (n.d.). Retrieved from https://www.kidzone.ws/

How to Make Teacher Worksheets in 5 Easy Steps. (n.d.). Retrieved from http://www.worksheetlibrary.com/teachingtips/5stepstoworksheets.html

4.5.

Mathseeds. (n.d.). Classroom Math Activities. Retrieved from https://mathseeds.com/articles/2018/02/26/classroom-math-activities/

Frost, S. (n.d.). *How to Teach Science to Primary School Children.* Retrieved from https://www.theclassroom.com/teach-science-primary-school-children-5993089.html

Brophy, J., & Alleman, J. (2009). Meaningful social studies for elementary students. *Teachers and Teaching, 15*(3), 357–376. https://doi.org/10.1080/13540600903056700

4.6.

Smekens Education Solutions Inc. (2014). Scaffold Mini-Lesson Concepts to Teach Main Idea. Retrieved from https://www.smekenseducation.com/Scaffold-MiniLesson-Concepts-to.html

Cox, J. (2017). Teaching Strategies: 5 Ideas for Instructing Vocabulary. Retrieved from http://www.teachhub.com/teaching-strategies-5-ideas-instructing-vocabulary

4.7.

TeacherVision. (n.d.). Sequencing Lesson. Retrieved from https://www.teachervision.com/reading-comprehension/sequencing-lesson

Murray, B. P. (n.d.). The New Teacher's Guide to Creating Lesson Plans. Retrieved from Scholastic website: https://www.scholastic.com/teachers/articles/teaching-content/new-teachers-guide-creating-lesson-plans/

Unit 5

Assessment

Assessment of learning serves many different purposes, and can be carried out in a multitude of ways. Assessment can be used by both teachers and students to understand their level of knowledge and understanding, and can be used to improve and develop teaching methodologies to better meet the needs of students. Assessment can be made before, during and after teaching and learning, and the tools for each type of assessment can be applied in a number of different ways depending on the expected outcomes of the assessment and the numerous variables that influence learning. Data and information collected during assessment can be used formatively, as a tool to support learning or summatively, as a tool to define or sum up the learning of students.

Expected learning outcomes

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

- Describe the meaning of assessment and the types of assessment;
- Identify the guiding principles about assessment for learning;
- Explain why feedback is important for learning;
- Be aware of and understand why we need to assess and when we have to do assessment;
- Explore when to use which types of assessment appropriately;
- Use feedback strategies effectively;
- Describe different types of assessment;
- Explain at least two types of assessment;

- Demonstrate the reason behind using different types of assessment;
- Apply appropriate techniques of assessment for learning in the teaching and learning situation;
- Describe self-assessment and peer-assessment;
- Evaluate their teaching ability by using self-assessment and peer-assessment;
- Apply the understanding of differences between nature and definition of test and measurement;
- Organise effectively the understanding of major functions and purposes of educational tests;
- Classify the types of achievement tests according to nature of content and various function, types of methods applied;
- Understand and use planning the test;
- Explain various types of assessment tools;
- Discuss the importance of keeping accurate records for both formative and summative purposes;
- Discuss the importance of keeping accurate records for both formative and summative purposes;
- Discuss ways of collecting data;
- Understand and verify the quality of classroom test;
- Understand nature of statistical analysis in education; and
- Understand how to evaluate data using graphical analysis.

5.1. What is Assessment for Learning?

Assessment for learning is one of three distinct viewpoints or outputs, by which assessment is considered, and these are dependent on how the assessment will be used. Assessment for learning considers the formative element of assessment that is used throughout a period of learning to contribute towards the understanding of how successful teaching has been and to highlight what action needs to be taken to address the shortfall in learning. In order to understand assessment for learning, it is important to first unpack the different meanings and methods of assessment.

5.1.1. Introduction to assessment and feedback

Expected learning outcomes

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

- Describe the meaning of assessment and the types of assessment;
- Identify the guiding principles about assessment for learning; and
- Explain why feedback is important for learning.

Competencies gained: A2.1 Demonstrate understanding of a variety of teaching and learning strategies and resources
B1.2 Demonstrate capacity to apply different strategies for teaching and learning
B2.1 Demonstrate capacity to monitor and assess student learning

Time: Two periods of 50 minutes

Learning strategies: Brainstorming; group discussion; peer and self-assessment; pair work

Preparation needed: Student teachers should read Student Teacher Textbook Sub-unit 5.1 before the lesson

Resources needed: Student teachers will need their lesson plans from the previous unit

Period 1

Learning activity 1: Warm-up: Brainstorming (10 minutes)

1. Ask student teachers to think about the different types of assessment they have experienced in school.
2. Create a list on the board that covers all the different types.

Assessment

This will provide a summary of what student teachers understand by the word 'assessment'. It will also inform your teaching of this sub-unit – if student teachers have no experience of some types of assessment, they will need clear instruction and practise in facilitating them.

Possible student teachers' responses

The answers will vary depending on personal experiences.

Learning activity 2: Flipped classroom (30 minutes)

1. The students will have been instructed to read the first sub-unit of Unit 5 prior to coming to class. Ask the students to discuss their findings and understanding of the unit, sharing questions and concerns. How does this learning relate to their own experiences?

2. Write the following questions on the board:

    a. What is assessment?
    b. What is AoL?
    c. What is AfL?
    d. What is AaL?
    e. What is formative assessment?
    f. What is summative assessment?
    g. What is self-assessment?
    h. What is feedback?

3. Split the class into eight groups of students and allocate each group one of these questions to answer in their group.
4. Instruct the students to create a poster that demonstrates the answer to their question using words and images, for example, as a mind map.
5. Give each group 15 minutes to answer the question and prepare the poster. The poster should also include a definition if the assessment type that they have been allocated and also examples of that particular type of assessment.

Assessment

Assess as you circulate, responding to any misunderstandings or difficulties. The task will be peer-assessed in the next activity.

Possible student teachers' responses

The poster should also include a definition if the assessment type that they have been allocated and also examples of that particular type of assessment.

Learning activity 3: Gallery walk (10 minutes)

1. Ask each group to attach their poster to the wall and encourage the student teachers to walk around the room and view the different posters, making note of any comments or questions that they may have on the posters.

2. Encourage the student teachers to ask each other questions about their understanding of the different assessment types.

Assessment

Student teachers can peer-assess by asking each other questions about the different assessment types. Encourage the student teachers to self-assess their own knowledge and check that they have a good understanding of the different definitions depicted on the posters.

Possible student teachers' responses

Student teachers should be encouraged to self-assess and peer-assess with the aim of building their knowledge about assessment methods.

Period 2

Learning activity 4: Think-pair-share (15 minutes)

1. Based on the learning from Period 1, ask the student teachers to re-assess their knowledge of assessment based on the posters that were created during the previous lesson for a few minutes on their own.
2. Questions that they had thought of during the gallery walk can be written down, and issues they may have can be recorded.
3. Ask the student teachers to work in pairs and to think about where the different types of assessment would occur during a lesson. Ask the pairs to indicate at what point in the lesson they would carry out the different types of assessment and why.
4. Encourage the student teachers to think about all the different types of assessment they have experienced, and include assessment types mentioned in Student Teacher Textbook Sub-unit 5.1.
5. Explain that the detail of the lesson is not important, and that they should concentrate on the assessments used, not the teaching activities that could be used. The important thing to consider is when and how and to assess, and why the assessment is being used at different parts of the lesson.

Assessment

Nominate a selection of student teachers to explain one of their ideas.

Homework assignment: the student teachers to develop a simple diagnostic assessment that can be used at the beginning of the next class (Unit 5.2).

Possible student teachers' responses

Diagnostic assessment: Before a lesson or series of lessons.

Formative assessment: During or after a lesson; can include peer-assessment and self-assessment.

Self-assessment/Peer-assessment: During or after a lesson; during work on a task or following completion of a task.

Summative assessment: At the end of a series of lessons, for example, at the end of a term or year.

Evaluative assessment: At the end of a school year or following a set of examinations.

Authentic assessment: During modules such as Practicum or other real-life applications of learning.

Learning activity 5: Lecture (10 minutes)

1. Give a brief introduction and explanation of the concept of feedback to the class, explaining how feedback can be given and how to positively use feedback to support learning.

Learning activity 6: Peer-assessment and feedback (15 minutes)

1. Ask each pair of students to join with another pair of students to discuss the assessment methods they have used in one of their lesson plans from Sub-unit 4. Ask the students to give each other at least two pieces of feedback on the plan.
2. Encourage the students to incorporate any new ideas into their work based on the feedback.

Assessment

This is a diagnostic assessment, as formal instruction on the use of feedback is yet to be given. However, it will give you an overall impression of student teachers' ability to give and receive feedback appropriately.

Possible student teachers' responses

Student teachers may not be comfortable giving feedback to their peers at this early stage. This is to be expected but is something that must be encouraged. While facilitating this lesson, try to make sure that the students are using positive words, and are encouraging their peers.

Check student teachers' understanding (10 minutes)

1. Ask the students to discuss their feelings after the feedback.
2. How did it make them feel? Did it help? How did they feel giving feedback to others? How could it have been improved?

Extension and differentiation activities

Learning activity 2 & 3: This could be facilitated as a discussion rather than a poster.

Learning activity 4: Ask the student teachers to think about times when they have received feedback – either from teachers or from their parents or friends. Ask them to think about how feedback makes them feel, and how that feedback could have been delivered differently.

Learning activity 6: Student teachers could give each other positive feedback on any aspect of life if you would prefer not to use lesson plans.

Review questions: Possible student teacher answers

Question 1: What is diagnostic assessment and why is it important?

Answer: Diagnostic assessment of the learning needs of students is important, and this assessment is carried out by a teacher to measure the prior knowledge of students before the commencement of teaching. This is also essential in establishing any disabilities or other factors that could negatively influence a students' ability to have equal access to learning. Diagnostic assessment is essential to ensure inclusivity in the classroom.

5.2. Why and When to Assess

The different types of assessment introduced in Sub-unit 5.1 are all used throughout the teaching cycle. It is important to use the right method of assessment at the right time and in the right way. Feedback is the driving force behind successful assessment, and when used correctly can support students' learning and motivation.

5.2.1. How to use assessment and feedback effectively

Expected learning outcomes

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

- Be aware of and understand why we need to assess and when we have to do assessment;
- Explore when to use which types of assessment appropriately; and
- Use feedback strategies effectively.

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 module matter to teach the appointed module/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods of 50 minutes

Learning strategies: Brainstorming; group discussion; lecture; pair work

Preparation needed: Prepare to give lectures on assessment and feedback

Resources needed: Handout 1

Period 1

Learning activity 1: Brainstorming (15 minutes)

1. Display the teaching cycle (Handout 1) in the classroom and ask the students to consider the different types of assessment that can be used through the cycle. This can be taken from Lesson 5.2.1 in the Student Teacher Textbook, and will relate to the work they carried out in Lesson 5.1.1.
2. Explain to the class about balanced assessment and why it is important, make special mention of the need to consider inclusive approaches to assessment that can test different students at different levels.

Assessment

This is a brief formative assessment of how well the student teachers can remember the different assessment methods studied in the previous lesson.

Possible student teachers' responses

Responses may include formative assessment, summative assessment, evaluative assessment, diagnostic assessment, self-assessment, peer-assessment, plus many other possibilities.

Learning activity 2: Lecture/Pair work (30 minutes)

1. Introduce the concept of objective and subjective assessment to the student teachers and explain the reasons why different types of question can be used to test different levels of thinking.

2. Give some examples of objective and subjective questions, and encourage the students to shout out whether the assessment questions are objective or subjective. (Follow the rules and words indicated in Sub-unit 5.2 of the Student Teacher Textbook.)

Assessment

Ask the students to create two objective and two subjective assessment questions and then share them with the person sitting next to them. Ask them to discuss the questions and highlight the similarities between their assessment questions in the way that they are worded.

Possible student teachers' responses

The answers will vary.

Check student teachers' understanding (5 minutes)

Ask the student teachers to start to look at how they are being assessed in the other modules on this learning area. They should be trying to understand how and why they are being assessed in various ways.

Period 2

Learning activity 3: Lecture (15 minutes)

1. Following on from the introduction to feedback given in Lesson 5.1.1, explain in more detail about how feedback can be both a motivator and a de-motivator depending on how it is used.
2. Explain the concept of ego-based feedback and the limitations of this kind of feedback. Give some examples to support the student teachers understanding.

Learning activity 4: Think-pair-share (25 minutes)

1. Ask the students to think for a moment on their own of times when they have received feedback and to question whether it was good or bad. In this instance, we would assume that good feedback is motivating feedback and bad feedback is demotivating regardless of the reason for giving feedback.
2. Ask the students to work in pairs and draw up examples of good and bad feedback they have received or invent some new examples. Ask them to record these on post-it notes. Make sure that the students understand the difference between good and bad feedback.
3. Ask the students to read out their examples of good and bad feedback and ask the rest of the class to determine whether they are examples of good or bad feedback.
4. Attach the post it notes to a flipchart paper depending on whether it is good or bad feedback.

Assessment

Assess with the class what they believe constitutes good and bad feedback.

Possible student teachers' responses

The students may be quite surprised at their learning on feedback and perhaps will have lots of examples to share of times when they have received bad feedback. This is a great opportunity for the students to practise the giving of good constructive feedback. This will be vital for their roles as teachers.

Check student teachers' understanding (10 minutes)

1. Ask the class to collectively create a check list of 'do's and don'ts' of giving feedback, making sure that the class is in agreement of what has been decided upon.
2. Record their answers on a flipchart and ask the students to copy the list into their notebooks.

Extension and differentiation activities

Learning activity 2: There is no need to be strict on the quantity of questions generated. The key point is to understand the difference between subjective and objective questions. It may be useful to give simpler names, such as 'opinion questions' and 'fact questions'.

Learning activity 4: It is not necessary for student to recall genuine feedback. They can invent examples of good and bad feedback. Ask the students to study the do's and don'ts checklist after the class and make an effort to practice giving feedback to each other.

Review questions: Possible student teacher answers

Question 1: What is the difference between formative and summative assessment?

Answer: Formative assessment is used throughout, and in conjunction with the learning process, it is classified as Assessment for Learning (AfL).

Summative Assessment is carried out at the end of a period of learning, it is classified as an Assessment of learning (AoL).

Question 2: What is the difference between objective and subjective assessment?

Answer: Objective assessment seeks to establish the level of learning by requiring a student to provide a single correct answer however this is limited to a certain extent in that it is assessing knowledge at its lowest order, that is, the remembering of facts.

Subjective assessment allows students to demonstrate not only their knowledge and understanding of a module at a higher order but also allows them to creatively and reflectively answer the question.

5.3. Different Types of Assessment

There are many ways to carry out the types of assessment introduced in this unit so far. Selecting the correct method of assessment depends on the stage of learning in which students are being assessed.

5.3.1. Describing different types of assessment

Expected learning outcomes

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

- Describe different types of assessment; and
- Explain at least two types of assessment.

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 module matter to teach the appointed module/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods of 50 minutes

Learning strategies: Presentation; group discussion; peer review

Preparation needed: Read Student Teacher Textbook Sub-unit 5.3

Resources needed: Annex 2

Period 1

Learning activity 1: Discussion (15 minutes)

1. The student teachers should be acquainted with inclusive assessment based on the information in Sub-unit 5.3 in the Student Teacher Textbook.
2. In pairs, ask the student teachers to discuss their understanding of inclusive assessment.
3. As a whole class support the student teachers in developing a definition of inclusive assessment and a brief explanation of why it is important.
4. Record the information on the board.

Assessment

You will be able to assess your student teachers' overall understanding of the concept of inclusive assessment by recording their suggestions on the board.

Possible student teachers' responses

Suggestions should come from the information in Sub-unit 5.3 of the Student Teacher Textbook.

Learning activity 2: Reflection (15 minutes)

1. Ask the student teachers to think about their own experiences at school as young children and to think about the different types of children they went to school with.

2. Ask them to consider some of the issues which students may have that affect how they learn at school.
3. On the board, develop a list of some of the issues that will influence or affect the way that students can learn.

Learning activity 3: Analysis (20 minutes)

1. Ask the student teachers to study the different assessment tasks listed in Annex 2 and consider how inclusive the different types of tasks might be.
2. Take feedback and summarise the student teachers' ideas.
3. Explain to the student teachers about the difference between open and closed assessment and how the different types of assessment can be used in assessing students with different levels of learning and understanding. Emphasise the relevance of inclusivity in this.

Assessment

Again, you will be able to assess your student teachers' overall understanding of the various learning needs by recording their suggestions on the board.

Possible student teachers' responses

Inclusive needs do not have to be limited to disabilities or special learning needs – many children have issues that affect their ability to attend school regularly or issues that affect their concentration or understanding, such as language difficulties.

Period 2

Learning activity 4: Group work (40 minutes)

1. Split the class into nine groups and assign a different type of assessment task as highlighted in Lesson 5.3.1 to each group. Using the examples given in the Student Teacher Textbook ask the groups to develop two assessment tasks of their own.

2. Ask each group to present the assessment tasks that they have developed and encourage the class to discuss whether they consider that task to be open or closed assessment.
3. Get the groups to swap assessment tasks so that each group has different types of task to work with.
4. Ask the group to look at the two assessment task questions that they have now got and discuss in their group how they could make one of the tasks more open, and one of the tasks more closed.
5. Get the groups to pass the revised assessment tasks back to the original group and ask them to read and discuss the differences they see between the original tasks and how they have been revised to become more open or more closed.

Assessment

This task is mostly peer-assessed. However, you should circulate and monitor progress throughout the task to assess and assist with student teachers' understanding.

Possible student teachers' responses

Will vary depending on the tasks they develop. The activity should show an understanding of the difference between open and closed assessments.

Check student teachers' understanding (10 minutes)

1. Ask student teachers to look at their assessment tasks for inclusivity.
2. How inclusive are the tasks? How could they be differentiated to take matters of inclusivity into account?
3. Remind students that each assessment type has its strengths and weaknesses and each is not always suitable for all situations. They should be mindful in the future that they make the right decisions when selecting assessment methods based on the multiple circumstances of learning.

Extension and differentiation activities

Learning activity 1: Student teachers may need to use the Student Teacher Textbook to help them remember the information. It may also be useful for them to make notes if they wish.

Learning activity 3: This activity can be quantified in various ways: the assessment tasks could be ordered from 'most inclusive' to 'least inclusive' or they could be given a score out of 10 for their inclusivity or their levels of inclusivity could be described in words.

Learning activity 4: Simplify this task by only asking groups to develop one assessment. It may be necessary to make more groups, depending on the number of student teachers in the class.

5.3.2. The reasons for using different types of assessment

Expected learning outcomes

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

- Demonstrate the reason behind using different types of assessment.

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 module matter to teach the appointed module/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods of 50 minutes

Learning strategies: Reflection; group discussion; group work; teacher test

Preparation needed: Read Student Teacher Textbook Units 5.2 and 5.3

Resources needed: None

Period 1

Learning activity 1: Group work (30 minutes)

1. Ask the student teachers to reflect on the learning that took place in the last lesson and have a selection of student teachers present one piece of information or example of learning that they took from the last lesson.
2. Split the class into nine groups and allocate one of the different learning tasks covered in Lesson 5.3.1 to each group. These should be different groups to the groups that worked on this exercise in the previous lesson.
3. Ask each group to develop four assessment questions that meet the requirements of the type that they have been allocated that are based on learning that has already been covered in the Educational Studies module. They can choose any Basic Education module.
4. Ensure that the student teachers provide some range to the questions to enable them cover the open and closed spectrum.

Assessment

Collect the work at the end of the lesson to mark.

Possible student teachers' responses

The work from this activity should show understanding of the type of assessment that the group has been allocated and include a range of open and closed assessment tasks.

Check student teacher understanding (20 minutes)

1. Teacher test! Have each group of student teachers test you on your knowledge of Educational Studies. Each group can ask one question.
2. Write the questions on the board. Provide verbal answers. The principal aim of this task is to show understanding of assessment questions.
3. After each question has been asked and answered discuss with the class how open or closed the question was and record the level on a chart similar to the open or closed range in Lesson 5.3.1.
4. Keep a record of the questions for use in the next period.

Period 2

Learning activity 2: Analysis (25 minutes)

1. Ask the students to acquaint themselves with Bloom's revised taxonomy of learning from Sub-unit 2.5 of the Student Teacher Textbook.
2. Explain the theory behind the higher and lower cognitive domains of learning. The diagram used in Lesson 2.5.1 should be displayed in the class.
3. Explain to the students how the different cognitive domains can be tested using different types of assessment question.
4. Ask the students to think about the different assessment tasks introduced in the previous lesson and where they relate to the different cognitive domains.
5. Using the questions created for the teacher test in the previous lesson, go through each question and discuss where it would fit on the taxonomy.
6. Discuss the different levels and different types of assessment with the students and ask them to consider when and why they would use each type of test, basing their thoughts on the type of student to be assessed and at what stage of the module the assessment would occur.

Assessment

Formatively assess whether student teachers can accurately place each question into the revised taxonomy diagram.

Possible student teachers' responses

Student teachers should be able to place each question into the appropriate section of the revised taxonomy and explain their reasoning.

Learning activity 3: Reflection (20 minutes)

1. Ask the student teachers to look at the two statements listed at the bottom of Lesson 5.3.1. in the Student Teacher Textbook.

2. Ask the student teachers to write a short paragraph that explains the difference between the two similar, yet distinctly different statements. The statements are:

Stop and Think

Assessment **must** discriminate **between** students based on their ability or disability and their potential to demonstrate the attainment of learning outcomes.

Assessment **must not** discriminate **against** students based on their ability or disability and their potential to demonstrate the attainment of learning outcomes.

Assessment

Collect the student teachers' writing.

Possible student teachers' responses

Answers should address the ideas that:

- All students should be given the potential to demonstrate their knowledge, abilities and achievements; and
- Adjustments to assessment tasks may be required so that students are not put at a disadvantage in demonstrating their achievements.

Check student teachers' understanding (5 minutes)

1. Ask the student teachers to take some time to view the Education College through the eyes of someone who may have a disability or leaning difficulty (that may be different to their own if they have some form of disability or learning difficulty).
2. What different challenges do they see that a person with a disability or learning difficulty may experience? This could be physical such as limited access or relate more to teaching and learning and assessment.

3. It is important that the student teachers get into the habit of being aware of inclusivity, and to address and confront situations that they consider to discriminatory or situations that promote unequal opportunity. This mindset will be invaluable throughout their lives and will make them better and more effective teachers.

Extension and differentiation activities

Learning activity 1: The number of assessment questions developed could be reduced or increased.

Learning activity 2: This task could be done in groups or as a whole class. If possible, create a large model of the taxonomy pyramid or engage your student teachers in creating one.

Learning activity 3: Thoughts about the quotes may be discussed instead of written.

Review questions: Possible student teachers' responses

Question 1: Why is ensuring inclusivity such an important element of the learning and assessment process?

Answer: Inclusivity is an increasing important consideration in teaching however it is an often-misinterpreted consideration. Inclusivity in education does not necessarily refer to only students with disabilities, but takes a broader approach to consider diversity. An inclusive learning environment aims to 'eliminate social exclusion that is a consequence of attitudes and responses to diversity in race, social class, ethnicity, religion, gender and ability. As such, it starts from the belief that education is a basic human right and the foundation for a more just society.' (IBE-UNESCO, 2017)

5.4. Guiding Principles of Assessment for Learning

5.4.1. Applying assessment methodologies

Expected learning outcomes

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

- Apply appropriate techniques of assessment for learning in the teaching and learning situation.

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 module matter to teach the appointed module/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods of 50 minutes

Learning strategies: Video; group discussion; lecture; flipped classroom

Preparation needed: None

Resources needed: Student Teacher Textbook; Practicum Student Teacher Textbook and Teacher Educator Guide

Period 1

Learning activity 1: Flipped classroom (30 minutes)

1. Have the students work in groups and discuss the process of the teaching and learning element of the programme based on their understanding from the Practicum module.
2. Ask the student teachers to develop a series of questions about the process of the teaching practice at the practice school.

Assessment

You will be able to gauge the student teachers' understanding of the process by the questions they ask. This could be facilitated as a peer-assessed activity.

Possible student teachers' responses (20 minutes)

Student teachers will have explored the theory of the Practicum during their lessons in this module but may not have focused on aspects of teaching and learning. Try to focus them on their concerns about how they will apply the process of teaching and learning.

Check student teachers' understanding

1. Discuss and develop a series of do's and don'ts regarding their approach to the process of teaching and learning during the teaching practice at the practice schools.

Period 2

Learning activity 2: Analysis (30 minutes)

1. Show a video or series of videos demonstrating good teaching practice. An example of the type of video that could be used is this Maths lesson from Cambridge Schools (in English): https://www.youtube.com/watch?v=FG2yyDYrI5M

2. Student teachers observe the videos, making notes on the positive and inspiring elements that they witness in the videos.

Assessment

Draw up a list of positive teaching points on the board.

Possible student teachers' responses

Student teachers have performed similar tasks in other modules. At this stage, any recognition of good teaching practice is worthy of praise.

Check student teachers' understanding (20 minutes)

1. Student teachers work in groups to develop a simple checklist of attributes they consider important in the delivery of teaching. These will be used in the next lesson as simple assessment tools.
2. Student teachers work in groups to plan a micro-teaching session for the next lesson, each group covering a different element of the assessment unit as assigned by the teacher educator.

Extension and differentiation activities

Learning activity 1: There are countless ways of facilitating this activity. A jigsaw format generates a lot of peer-assessment: in this format, pairs (or small groups) prepare questions, then join another pair or group to start to find the answers.

Learning activity 2: Myanmar language videos are available on the JICA/CREATE Project YouTube channel: https://www.youtube.com/channel/UC0pW4hIlFEAbZiN_4ez9hRA/videos

5.4.2. Self-assessment and peer-assessment techniques

Expected learning outcomes

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

- Describe self-assessment and peer-assessment; and
- Evaluate their teaching ability by using self-assessment and peer-assessment.

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 module matter to teach the appointed module/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods of 50 minutes

Learning strategies: Micro-teaching; peer and self-assessment

Preparation needed: None

Resources needed: Student Teacher Textbook; assessment checklist that was created in Lesson 5.4.1

Periods 1 and 2

Learning activity 1: Micro-teaching (50 minutes in Period 1 + 40 minutes in Period 2)

1. Each group has the opportunity to present their own micro-teaching lesson, with each member of the group taking part. The entire two periods of this lesson are dedicated to this practice.
2. Encourage the student teachers to record assessment of the micro-teaching based on the checklist developed in the previous lesson.
3. After each group has presented, they will be given the opportunity to self-assess their performance and will present their self-assessment to their peers.
4. Each group will also be peer assessed and opportunity will be given for them to receive some peer feedback.
5. Remind the student teachers of the rules regarding feedback to ensure that it is positive and constructive.
6. If time allows, each group will have the opportunity to respond to the peer feedback and self-assessment.
7. Give feedback.

Assessment

This task is self-assessed, peer-assessed and formatively assessed by the teacher educator as described above. Self-assessment requires student teachers to answer a small number of simple questions, for example:

- What went well?
- What did the students learn?
- How do you know?
- What will you do differently next time?

Possible student teachers' responses

Teaching styles will vary; this is to be encouraged as it is very important that they develop their own teaching style according to their own personality. Student teachers may find it difficult to self-assess with minimal experience of teaching but remind them that self-assessment encourages them to recognise what they did well and where they can improve.

Check student teachers' understanding (10 minutes)

1. Based on the learning during this lesson, and the experience of giving and receiving feedback, ask the student teachers to develop a checklist that could be used to evaluate peer feedback.
2. The checklist should be listed under two headings: Do's and Don'ts.
3. The recommended reading section below lists some interesting websites that also include videos to watch to support this activity.

Extension and differentiation activities

The micro-teaching task should be facilitated to take into account the various levels of confidence within the class. Offer student teachers the choice of teaching varying amounts – a whole lesson; one activity; or observation if they feel they are not ready to teach yet.

Ask the student teachers to take note of the feedback they receive in other modules and recognise the different types introduced during this lesson.

Review questions: Possible student teachers' responses

Question 1: Why are self-assessment and peer-assessment so important in the learning process?

Answer: Peer-assessment supports a deeper learning and understanding of the module, transparency and cohesion, and effective assessment. Self-assessment supports increased self-awareness, knowledge attainment, knowledge gap analysis, and greater engagement in the learning process.

5.5. Appropriate Techniques of Assessment

5.5.1. Understanding educational tests

Expected learning outcomes

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

- Apply the understanding of differences between nature and definition of test and measurement; and
- Organise effectively the understanding of major functions and purposes of educational tests.

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 module matter to teach the appointed module/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods of 50 minutes

Learning strategies: Group work; lecture

Preparation needed: Collect various examples of tests used at Basic Education level

Resources needed: Student Teacher Textbook; examples of tests as described above

Period 1

Learning activity 1: Lecture (20 minutes)

1. Give student teachers a quick test of any kind. It could be an oral test, true or false, multiple choices or a mixture of many different methods.
2. Explain the different functions of tests. This can be based on the information given in the Student Teacher Textbook.

Assessment

There is no need to assess the test – this is simply a short demonstration of a test as part of the lecture.

Possible student teachers' responses

Will depend on the test – student teachers may comment on the type of test you give them.

Learning activity 2: Group work (30 minutes)

1. Give student teachers a range of example tests. There should be a good range and variety of tests provided.
2. In small groups, ask student teachers to develop a test and scoring system, covering a topic from this unit of the textbook.
3. They can use the example tests to help with ideas but will not be expected to create something so thorough.

4. Depending on the time available, it should be possible to create a test of around 10 questions.

Assessment

Circulate and formatively assess the groups understanding of the test type. Collect the final tests to assess for sense and test validity before the next period.

Possible student teachers' responses

Will depend on the test type chosen, but should aim to create a valid and fair test.

Period 2

Learning activity 3: Group work (40 minutes)

1. Each student teacher group swaps the test that they have created with another group.
2. Each group attempts to answer the questions on the test that they have been given as a group.
3. Once the tests have been completed, each group is allowed to mark their own test, based on the answers given by the other group.
4. The two groups give each other feedback on their tests.

Assessment

This task is peer-assessed. Student teachers should comment on the fairness of the test, the difficulty of the questions, how easy the instructions were to understand or any other element of testing.

Possible student teachers' responses

Student teachers should be encouraged to be open and honest. Even if they do not use official terminology, their instinctive feelings about the reliability or validity of the tests are likely to address many points concerned with the successful development of tests.

The students may feel compelled to concentrate on the answers that they gave to the test, but the actual activity is less about being tested on the theory of educational studies, and more on their ability to understand and demonstrate accurate assessment techniques.

Check student teachers' understanding (10 minutes)

1. Explain the concepts of the measurement scales in testing, relating this to one or more of the example tests used.
2. Encourage the student teachers to consider where the test they developed fit into this theory.

Extension and differentiation activities

Learning activity 1: The task can be differentiated by the type of test selected.

Learning activity 2: You could ask student teachers to develop a test based on a Basic Education lesson or any module of their choosing.

Learning activity 3: Groups could quiz each other on a more competitive, interactive basis instead of simply swapping papers.

5.5.2. Types of Achievement Tests

Expected learning outcomes

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

- Classify the types of achievement tests according to nature of content and various function, types of methods applied; and
- Understand and use planning the test.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods of 50 minutes

Learning strategies: Brainstorming; group work; peer-assessment

Preparation needed: None

Resources needed: Student Teacher Textbook

Period 1

Learning activity 1: Brainstorming (10 minutes)

1. Brainstorm together what the components of a good test include, based on their learning so far and their experiences in Lesson 5.5.1.
2. Write the suggestions on the board.

Assessment

Formatively assess overall understanding of what makes a good test by writing the ideas on the board.

Possible student teachers' responses

Student teachers should be able to recall some of the information from the previous lessons.

Learning activity 2: Analysis (35 minutes)

1. Introduce the student teachers to the concepts of validity and reliability in testing. It is likely that some elements of this will have been discussed in Learning activity 1 although there may be some confusion regarding the use of the labels.
2. Give examples of a valid test and examples of a test that is less valid using the three measures of validity.
3. Split the class into groups and give them each an example test based on this unit of assessment. Each group must discuss and work together to decide ways in which they could improve upon the validity of the test.

Stop and think

Test validity refers to how well a test measures what it claims to measure. A valid test does not inadvertently test students on other, irrelevant, matters. For example, a test of addition in Maths should not require the students to read unknown words in a question, because this would be testing their vocabulary rather than their ability to do addition.

Assessment

Ask groups to make notes on how they would improve the validity of the test and collect these in.

Possible student teachers' responses

Student teachers should refer to the information in the Student Teacher Textbook to help with their analysis of validity in the test.

Check student teachers' understanding (5 minutes)

Period 2

Learning activity 3: Analysis

1. Give examples of a reliable test and examples of a test that is less reliable using the concepts of test and scorer reliability.
2. Split the class into groups and give them each an example test based on this unit of assessment. Each group must discuss and work together to decide upon ways that they could improve upon the reliability of the test. This can involve completely rewriting the test or using a different testing method.
3. The student teacher groups will present their recommendations to the rest of the class, based on their activities in periods 1 and 2. Each group will justify how they have improved the validity and reliability of the test they were working on.
4. Student teachers will provide peer feedback to each other.

Stop and think

Test reliability can be measured by how consistently the scores in that test are attained, regardless of who will be scoring the test. For example, if two teachers were to score the same test completed by one student, they should give the same score. A multiple-choice test should have a high degree of reliability, as ultimately there is only one correct answer. However, an 'open-question' essay test might be scored differently by different teachers, and students may get different scores if they repeat the test (scorer reliability and test reliability).

Assessment

This task is peer-assessed. You may also take in the groups' notes to assess them yourself.

Possible student teachers' responses

Student teachers should refer to the information in the Student Teacher Textbook to help with their analysis of reliability in the test.

Check student teachers' understanding (5 minutes)

1. Ask student teachers to give a summary of test validity and test reliability (see 'Stop and think' boxes for a summary of these concepts).
2. Support their understanding and use of language by giving examples and encourage them to research additional information online.
3. Validity and reliability are not just used to refer to educational testing but any form of testing. For example, when a medical professional is testing the recovery of a patient in hospital after an operation, the validity and reliability of the test are important.

Extension and differentiation activities

Learning activity 1: You may need to simplify the criteria of this task. If student teachers are struggling to make recommendations, they could start by deciding whether the test is reliable or not based on the information in the Student Teacher Textbook. Offer a selection of different tests so student teachers do not get confined to one type of test.

Review questions: Possible student teachers' responses

Question 1: Describe the four different types of measurement scales.

Answer:
Nominal scale: This is the simplest level of measurement and can be used to classify data into a minimum of two named categories. Nominal scales are used to 'label' data or variables without a quantitative value or specific order.

Ordinal scale: The ordinal scale retains the labels of the nominal scale but adds a degree of rank or a value of importance or significance to the measure. Ordinal scales are generally used to demonstrate measurements of frequency.

Interval scale: The interval scale allows us to see the exact difference between the variables. Interval scales are the first opportunity to utilise statistical analysis, and mean median, mode and central tendency can be calculated from the data in this scale. Most of the tests used in educational measurements such as achievement tests, and aptitude tests, are recorded using an interval scale.

Ratio scale: The ratio scale introduces the concept of 'true-zero' and is the most precise measurement scale that allows for a wide range of descriptive and inferential statistics to be calculated.

Question 2: How is the validity of a test measured?

Answer:
Content validity refers to how well a test measures the learning outcomes or behaviours it was intended to test.

Criterion validity relates to the extent that the test results agree with external criteria such as national averages.

Construct validity refers to whether the measured test results actually relate to or match the theorised results that were anticipated.

5.6. Appropriate Techniques of Assessment

5.6.1. Types of assessment tools

Expected learning outcomes

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

- Explain various types of assessment tools.

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 module matter to teach the appointed module/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods of 50 minutes

Learning strategies: Practical test; group work; lecture

Preparation needed: Read Student Teacher Textbook Sub-unit 5.6

Resources needed: None

Period 1

Learning activity 1: Warm-up (10 minutes)

1. Ask the students to line up against a wall. This might have to be done in a corridor!
2. Once all the students are lined up against the wall, explain to them that they are not allowed to speak to each other, and they must silently arrange themselves from tallest to shortest. The tallest student will be at one end, the shortest will be at the other end.
3. Once the students have completed the task, ask the tallest and shortest students what their height is or measure them or roughly estimate their height, recording this information for later.
4. Now assign a number to each student based on their position, ask each one to shout out their numbered position in turn, starting from the tallest, who will be number 1.
5. Ask the students to remember their number and return to their seats.

Assessment

This task is assessed in the analysis activity but is principally intended to act as a demonstration of norm-referenced testing.

Possible student teachers' responses

The activity is based on student teachers' heights.

Learning activity 2: Lecture (20 minutes)

1. Introduce the concept of norm-referenced testing, explain how it is used and why it is used in education assessment. Give examples of norm-referenced testing.
2. Ask the students to consider some of the positives and negatives of norm-referenced testing and record their thoughts, encourage students to think of their own experiences of testing as well.

Assessment

Record suggestions on the board, giving an overall assessment of the student teachers' understanding of criterion-referenced testing.

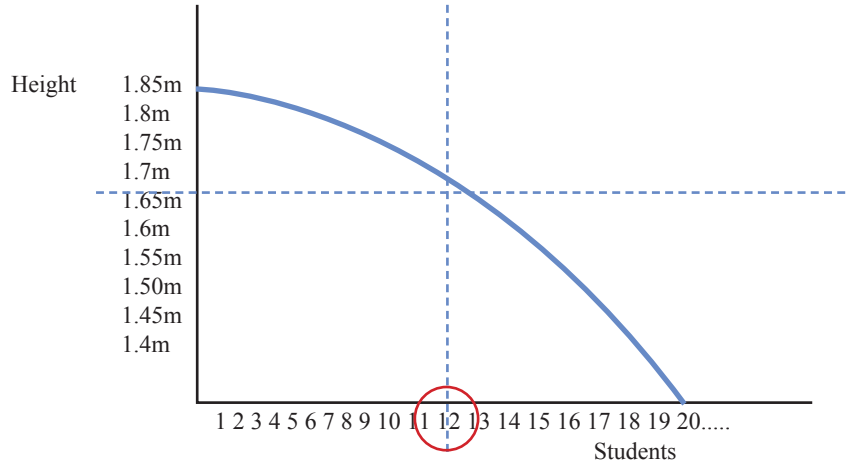
Possible student teachers' responses

Responses will come mainly from the Student Teacher Textbook or may include personal examples.

Learning activity 3: Analysis (15 minutes)

1. Draw a graph on the board, the x axis will be labeled 'students' and numbered from 1 to however many students there are, the y axis will be labeled 'height'.
2. Draw a line graph that roughly represents the range of heights of the students and then select a point on the line that will be the 'pass mark', at approximately the middle of the line. Draw a dotted line from this point down to the x axis and circle the number that it correlates to (see example below).
3. Explain to the students that the results of the height test are in, the test is being assessed using normative-referenced assessment and the students that passed are student number 1 to student number (whatever number you have circled) – all the other students have failed.

Figure 4.2. Line graph



4. Congratulate the students that have 'passed the test'! Commiserate with the students that have 'failed the test'!
5. Ask the students to reflect on the process of assessment, asking them whether they think the assessment was fair. Ask the students to think about a situation where this type of test would be fair.

Assessment

Invite student teachers' responses to assess their understanding of where this kind of test is fair and why it is not fair in this example.

Possible student teachers' responses

Student teachers' responses should recognise that norm-referenced testing grades students from best to worst and is useful if you wish to rank the achievements of students against each other or establish the highest performing students on a test.

NRT does not ensure that learning has occurred or that learning outcomes have been achieved. Under the rules of NRT there will always be a 'top of the class' and a 'bottom of the class' regardless of how good or bad the actual scores are.

Check student teachers' understanding (5 minutes)

Ask student teachers to give a summary of norm-referenced testing and write a summary on the board. This can be taken from the paragraph of 'Possible student teacher responses' above.

Extension and differentiation activities

Learning activity 1: You may wish to eliminate the practical element of this task and simply ask a group of student teachers to call out their height – record the information they give you and use this to form the graph in the analysis activity.

Learning activity 2: Allow the student teachers to refer to the Student Teacher Textbook.

Learning activity 3: You will have to make a judgment as to whether your student teachers will be sensitive to this activity. If you feel any members of the class may be embarrassed at being 'too short', you could choose a 'pass mark' at which all student teachers would pass, but ask them to consider whether a primary school student would pass.

Period 2

Learning activity 4: Warm-up (5 minutes)

1. Ask the student teachers to complete a quick test.
2. In small groups, ask them write the letters A-Z down a page in their notebook.
3. Tell them that they have three minutes to complete the test.
4. Explain that they must record one word that begins with each letter, A-Z. Each word must be something that they have studied so far in Educational Studies. For example, next to A they could write Assessment, B could be Bloom's taxonomy, and so on.
5. Start the test, and remind the students when they have two minutes remaining, one minute remaining and 30 seconds remaining.
6. When the time has finished, ask the student teachers to count the number of words they had time to record and mark this number on their paper.

Assessment

This task is assessed in the analysis activity but is principally intended to act as a demonstration of criterion-referenced testing.

Possible student teachers' responses

Student teachers are free to make any reasonable response.

Learning activity 5: Lecture (20 minutes)

1. Introduce the concept of criterion-referenced testing, explain how it is used and why it is used in education assessment. Give examples of criterion-referenced testing.
2. Ask the students to consider some of the positives and negatives of criterion-referenced testing and record their thoughts, encourage students to think of their own experiences of testing as well.

Assessment

Record suggestions on the board, giving an overall assessment of the student teachers' understanding of criterion-referenced testing.

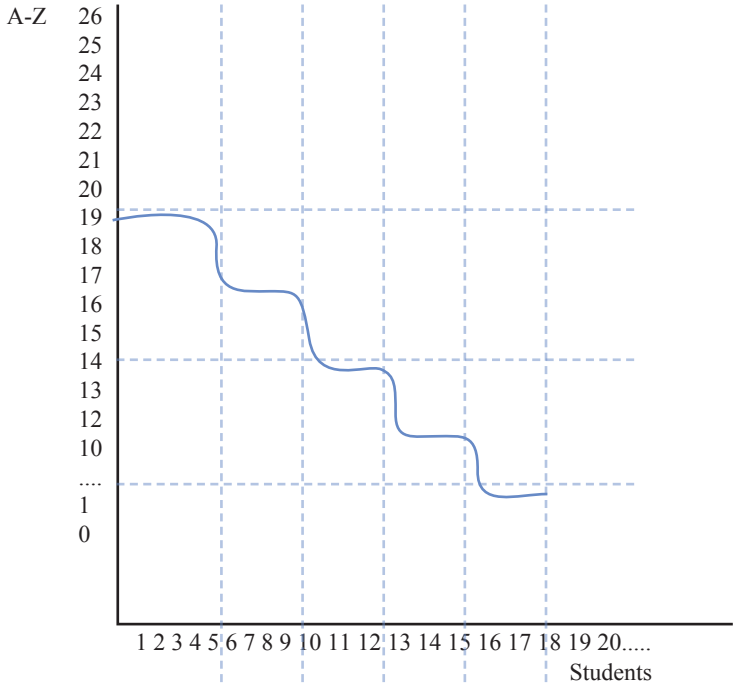
Possible student teachers' responses

Responses will come mainly from the Student Teacher Textbook or may include personal examples.

Learning activity 6: Analysis (20 minutes)

1. Draw a graph on the board, the x axis will be labeled 'students' or 'groups' and numbered according to however many groups there are, the y axis will be labeled 'A-Z' and will be numbered from 0 to 26.
2. Starting at 26, ask the students to put their hand up when you shout out the number of answers they gave: 26, 25, 24, 23, and so on.
3. At each number mark on the graph the number of groups who achieved that number, carry on until you reach 0 and then draw a line graph roughly through the range of numbers given.
4. Explain to the student teachers that a range of grades will be given for the test. Twenty answers and above is an A, 15 to 19 is a B, 10 to 14 is a C, 5 to 9 is a D, and 0 to 4 is an E. You can draw these cut-off points on the graph as well (see example below).

Figure 4.3. Line graph 2



5. Ask the groups to mark their grade on their paper from A to E.
6. Congratulate the groups as they have all 'passed the test'!

Assessment

Ask the student teachers to reflect on the process of assessment, ask them whether they think the assessment was fair.

Possible student teachers' responses

Student teachers should recognise that CRT measures the knowledge, skills and understanding of students and their attainment of learning outcomes after a period of learning against a pre-determined set of criteria. Each student is assessed in exactly the same way and is graded using the same method.

Check student teachers' understanding (5 minutes)

Ask student teachers to give a summary of criterion-referenced testing and write this summary on the board. This can be taken from the paragraph of 'Possible student teachers' responses' above.

Extension and differentiation activities

Learning activity 4: This could be done using the Myanmar alphabet.

Learning activity 5: Allow student teachers to refer to the Student Teacher Textbook.

Learning activity 6: It may not be necessary to take the real scores of every group, but to invent a graph based on some possible scores.

5.6.2. Keeping accurate records

Expected learning outcomes

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

- Discuss importance of keeping accurate records for both formative and summative purposes.

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 module matter to teach the appointed module/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods of 50 minutes

Learning strategies: Brainstorming; group discussion; test

Preparation needed: Student Teacher Textbook

Period 1

Learning activity 1: Brainstorming (50 minutes)

1. Ask the student teachers to develop a list of all the different types of data and information that can be collected by a teacher on their student teachers.
2. Support the student teachers in coming up with a wide range of answers and contribute your own thoughts if there are some areas lacking.
3. Record the list of types of data on the board and ask the student teachers to collectively decide upon, through discussion, whether the data type is considered formative, summative or 'something else'
4. Explain to the student teachers the reasons why formative data can be useful, and how formative data can support assessment for learning.
5. Support the student teachers to come up with a number of reasons why and how they think summative data can be useful.
6. Refer back to the section on the board recorded as 'something else', this could be a number of things that can be collated under the title 'Qualitative data' explain to the students some of the uses of this kind of data as it tends to consider the 'what', 'how' and 'why' of assessment of students, rather than quantitative data such as 'how many' or 'how much'.

Assessment

This task will give you an overall understanding of how much your student teachers can remember about all the assessment methodologies they have studied in this unit.

Possible student teachers' responses

Student teachers should be able to talk about various forms of assessment. Ask the student teachers to consider the different types of data that could be kept and to highlight who would be able to use that information. Teachers? Exam boards? Students? Parents? Government?

Period 2

Learning activity 2: Warm-up (10 minutes)

1. Ask the student teachers to complete a quick test.
2. In small groups ask them write the letters A-Z down a page in their notebook.
3. Tell them that they have three minutes to complete the test.
4. Explain that they must record one word that begins with each letter, A-Z. Each word must be something that they have studied so far in Educational Studies. For example, next to A they could write Assessment, B could be Bloom's taxonomy, and so on.
5. Start the test, and remind the students when they have two minutes remaining, one minute remaining and 30 seconds remaining.
6. When the time has finished, ask the student teachers to count the number of words they had time to record and give themselves a grade based on the grading system from the previous lesson.
7. Ask the student teachers to work out if they have performed better in this test the second time around.

Assessment

This task is self-assessed.

Possible student teachers' responses

Responses may be the same as the first time they did this task. It may be worth pointing out that this is permissible although they should not look at their previous attempt.

Learning activity 3: Lecture/Group discussion (30 minutes)

1. Explain to the student teachers the theory behind Ipsative assessment and explain the importance and relevance of this method as a way of improving performance.
2. Ask student teachers to discuss their views on this form of assessment and take feedback.

Assessment

Listen to student teachers' view and record their ideas on the board as a formative assessment and to encourage peer-assessment.

Possible student teachers' responses

Student teachers may consider it unfair to be able to re-sit a test to achieve a better score, perhaps suggesting that the same test could be taken over and over again until a pass is acquired. Well, this is the case, and it does happen. Taking the driving test for example. But ipsative testing is more about measuring improvement over time than passing tests, and it is important to remind student teachers that all testing methods and types are valid and useful under the right circumstances.

Check student teachers' understanding (10 minutes)

1. Ask the student teachers to think about norm-referenced, criterion-referenced and ipsative assessment and consider situations where they are the best type of assessment to be used and situations where they are not suitable.

Extension and differentiation activities

Learning activity 1: This task should be done using the same alphabet as in the previous lesson.

Learning activity 2: Allow student teachers to refer to the Student Teacher Textbook to consolidate the information you give them in the short lecture.

Review questions: Possible student teachers' responses

Question 1: Why and when is norm-referenced testing used?

Answer: Norm-referenced tests (NRT) is used if you wish to rank the achievements of students against each other, to establish higher or lower performing students in a 'league table'. Situations where testing is required to establish the highest performing students on a test such as university entrance exams.

Question 2: Why and when is criterion-referenced testing used?

Criterion-referenced tests (CRT): are assessments that measure the knowledge, skills and understanding of students and their attainment of learning outcomes after a period of learning against a pre-determined set of criteria. Each student is assessed in exactly the same way, under that same circumstances and is graded using the same method, and most importantly they are assessed on their own individual merit, they are not assessed against the achievements of other students.

5.7. Types of Test Questions

5.7.1. Different test questions that can be used in assessment

Expected learning outcomes

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

- Identify different type of written tests.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods of 50 minutes

Learning strategies: Brainstorming; pair work

Preparation needed: Collect some examples of long and short answer questions

Resources needed: Student Teacher Textbook; examples of long and short answer questions

Period 1

Learning activity 1: Brainstorming (25 minutes)

1. Ask the student teachers to think of which types of questions are the most important to be used in tests and why.
2. Introduce the different types of questions that are usually used in tests. This includes structured questions such as multiple-choice and open-ended questions.
3. Introduce short answer questions to the class, and explain how they are different to long answer questions. Give some examples to the student teachers.
4. Ask the student teachers to work in small groups to discuss the advantages and disadvantages of using short answer questions in tests.

Assessment

Discuss the findings of this exercise as a group to briefly assess your student teachers' understanding of the advantages and disadvantages of short answer questions.

Possible student teachers' responses

Student teachers may raise points such as:

- Short answer questions are easy for teachers to compile, and are easier to mark more objectively.
- Multiple questions can be used in one test to cover a wide range of knowledge in the time allocated.
- The questions are short enough for students to understand the information, to answer the question without ambiguity, and to provide a structure to their answer.
- It is more difficult to guess the answer to a short answer test question than a multiple-choice question or gap-fill question.

Learning activity 2: Pair work (25 minutes)

1. As a class develop a check list of things that should be considered when developing short answer questions to ensure that they are effectively used.
2. Ask the student teachers to work in pairs to develop their own short answer question on an area of Educational Studies that they have studied.

Assessment

Collect the student teachers' example questions.

Possible student teachers' responses

Student teachers should be able to form a short answer question.

Period 2

Learning activity 3: Pair work (40 minutes)

1. Ask the student teachers to work in pairs and consider the circumstances where long answer questions or short answer questions may be preferable. Ask each pair to come up with some positive and negative differences and decide which the better type of question is to use in a test.
2. As is indicated in the Student Teacher Textbook neither long or short answer questions are better, both are valid and useful in a test. Explain this to the student teachers and ask them to provide to the rest of the class the reasons why they would use one test or the other.
3. As a class develop a check list of things that should be considered when developing long answer questions to ensure that they are effectively used.
4. Ask the student teachers to work in their pairs to develop a long answer question that could be included in a test on Educational Studies.
5. Ask the student teachers to check their questions against the information in the Student Teacher Textbook that indicates the features of different types of questions to ensure that they meet the criteria of long answer questions.

Assessment

From the initial ideas and the check list, you will be able to assess your student teachers' understanding of short and long answer questions based on their individual reading and previous lessons.

Possible student teachers' responses

Student teachers should be able to give their own ideas about when short and long answer questions are appropriate and they should be able to form a long answer question as directed.

Stop and think

Student teachers will probably have their own preferred type of question, it is useful to allow them to discuss the reasons why they like that type of questions (often because it is perceived to be easier) but encourage the student teachers to understand that no one type is any better than another and that all types of questions are useful and valid in the right situation.

Check student teachers' understanding (10 minutes)

Ensure that student teachers can understand that although a short answer question may take less time to answer, it could in theory be more difficult to answer well, as there is less time and fewer words to fulfill the expectations of the question. Short answers need to be concise and to the point, fitting all the required information into the short answer. Answering the question accurately can be difficult.

Extension and differentiation activities

Learning activity 1: Student teachers will probably have their own preferred type of question, it is useful to allow them to discuss the reasons why they like that type of questions (often because it is perceived to be easier) but encourage the student teachers to understand that no one type is any better than another, and that all types of questions are useful and valid in the right situation.

Learning activity 2: Give the student teachers some example papers that include both short and long answer questions. Ask the student teachers to take the papers home and take some time to check that the questions meet the rules explained in the Student Teacher Textbook.

Learning activity 3: Extend the student teachers by asking them to consider how the validity and reliability of a question can be different depending on whether it is long or short answer and how that validity and reliability can be improved upon.

5.7.2. Developing written tests

Expected learning outcomes

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

- Develop a good question item.

Competencies gained: C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods of 50 minutes

Learning strategies: Brainstorming; quick test; group discussion; teacher instruction; pair work

Preparation needed: Collect past exam papers

Resources needed: Student Teacher Textbook Sub-unit 5.7; Handout 3; Handout 4; past exam papers

Period 1

Learning activity 1: Warm-up (25 minutes)

1. Explain to the student teachers that they will be taking a short test to prepare them for this lesson.
2. Explain that the test is very important and that they must complete the test in the allotted time of three minutes, and that they must follow the instructions on the test paper.
3. Direct the student teachers to Handout 3 and begin the test.
4. Inform them when they have two minutes remaining, one minute remaining and 30 seconds remaining. After three minutes, ask the class to put their pens down and stop writing.
5. Hopefully, some of the student teachers will have followed the instructions on the test as requested, but some of the student teachers will not have, some may have even got to instruction 19 and will have called out!
6. Ask the student teachers to put their hand up if they finished the test. Congratulate those that followed the instructions. Ask the student teachers that did not finish shouting out how many instructions they managed to complete in three minutes.
7. Read out instruction 1 on the test sheet, and then explain to the student teachers that it is important to follow the instructions in a test. Now read out instruction 22.

Assessment

This test is not assessed, but the task can be assessed based on student teachers' ability to comment on the test.

Possible student teachers' responses

Student teachers may highlight how unfair, and confusing the test was. Encourage the student teachers to explain why they felt the test was unfair, as this is a good opportunity for them to consider how important the test instructions and format are in providing fair assessment.

Learning activity 2: Brainstorming (25 minutes)

1. Apologise for 'tricking' the student teachers and ask them to think about the learning they have acquired from this quick exercise.
2. Ask the student teachers to think about why it is important to follow the instructions on a test and why it is important to read all the instructions and questions in a test.
3. Explain to the students that when they sit a test or exam it is vitally important to prepare their time effectively for the test. This means that they should take a few minutes at the beginning of a test to plan how much time they need to allocate to each section of the test to ensure that they leave enough time to complete all the sections.
4. Explain to the student teachers about how they should consider the amount of time allocated to a test when they are writing and creating questions for a test.
5. Give the student teachers an example exam paper and ask them to allocate an amount of time that would be required to complete the questions.

Period 2

Learning activity 3: Pair work (40 minutes)

1. Provide the student teachers with examples of long and short answer questions on the board.
2. Explain to the student teachers the rules as shown in Handout 4 that must be followed when writing questions and use the examples on the board to explain how the rules have been applied.
3. Ask the student teachers to work in their pairs to come up with four of their own questions (two of each kind) on any module. Ensure that the student teachers are following the rules as highlighted on Handout 4.
4. Encourage the student teachers to review their long answer question in their pairs, and consider improvements that could be made to their questions to ensure that they fit the rules explained.
5. Ask the student teachers to allocate a length of time to the questions.
6. Encourage the student teachers to give each other feedback on their questions.

Stop and think

The initial test carried out in this lesson is one that is used every year at schools all over the world. It is an important reminder that when writing tests, you cannot assume that the students will either understand the test or follow the instructions. The more complicated you make the instructions, the more difficult and unfair it may be for the student. It is important to remember that tests and examinations are not an opportunity to trick the students, they are a chance for the student to demonstrate their knowledge and learning fairly.

Assessment

In addition to the peer-assessment suggested, collect the student teachers' example questions and mark according to the rules on Handout 4.

Possible student teachers' responses

Will vary but should consist of long answer questions complying with the rules on Handout 4.

Check student teachers' understanding (10 minutes)

1. Give the student teachers some example papers that include both short and long answer questions.
2. Ask the student teachers to develop a plan of how they would complete the exam in the allotted time by allocating time to each section or question of the exam.

Extension and differentiation activities

Learning activity 2: Ask the student teachers to check the questions that they have written for validity and reliability. Ask them to make improvements and comments on how the questions could be made more valid and reliable.

Learning activity 3: Student teachers could use their own example of long and short answer questions or those of a classmate.

Review questions: Possible student teachers' responses

Question 1: Complete the following sentence: Short answer test questions can be more difficult to answer than long answer test questions because…

Answer: Answers will vary but should make the points that there is less time and fewer words to fulfill the expectations of the question. Short answers need to be concise and to the point, fitting all the required information into the short answer.

Question 2: When developing a written test, what five considerations must you make?

Answer: The test should:

Relate to a module that has been covered during the teaching and learning components of the class.

Be written in a clear, unambiguous way so that students can understand exactly what they are expected to do.

Be written at a level suitable to the grade of the students being tested and with the expectation that a good answer to the question can be written within the time allowed.

Demonstrate the criteria on which the question will be evaluated.

Demonstrate the number of marks allocated to it, so that students can make an informed decision on the amount of time and length of answer to dedicate to the question.

5.8. Importance of Keeping and Using Accurate Records for Improvement of Learning

Teachers are required to collect large amounts of data and information from their students in a variety of ways and from a number of sources. This sub-unit and the learning carried out in the classroom will introduce the different ways that data can be collected and the reasons why that data is important.

5.8.1. Keeping accurate records of assessment

Expected learning outcomes

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

- Discuss ways of collecting data.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods of 50 minutes

Learning strategies: Brainstorming; group discussion; gallery walk; practical application

Preparation needed: None

Resources needed: Student Teacher Textbook

Period 1

Learning activity 1: Brainstorming/Group work (40 minutes)

1. Ask student teachers to come up with a variety of methods for collecting data. Facilitate and encourage the student teachers to 'think outside the box' and establish different ways in which data can be collected. Present the findings on the board.
2. Divide student teachers into groups and give each group a data collection method. The data they have to collect with that method will be determined by the teacher educator. This could include class foot sizes, the months that student teachers were born, makes of mobile phone, favourite colour, and so on. There needs to be no connection to Educational Studies but it should be something that can easily be collected within the confines of the classroom.
3. Each group will develop a methodology based on their data collection method and the data that they have been given to collect.
4. Student teachers will also develop the method they are going to use to present the data.
5. Give advice and recommendations on improvements.

Assessment

Assess how many different methods of data collection your student teachers know. Assess their ability to organise their data collection process during the group task.

Possible student teachers' responses

Student teachers should be able to organise how they are going to collect their data using the method prescribed.

Check student teachers' understanding (10 minutes)

Ask each group to summarise their chosen module matter and data collection method.

Period 2

Learning activity 2: Group work (30 minutes)

1. The student teachers will carry out their data collection based on the instructions given and the decisions made during Period 1. Support them through this. The classroom will be quite chaotic during this exercise as each group tries to collect their information. Try to maintain some order.
2. Groups put together their findings on flipchart paper.
3. Display the presentations on the walls.

Assessment

Groups can peer-assess each other's findings from the flipchart presentations. Assess the group work according to their use of their allocated data collection method. You may wish to facilitate a self-assessment task.

Possible student teachers' responses

Groups should be able to collect and present data using their allocated data collection method.

Learning activity 3: Gallery walk (10 minutes)

1. The student teachers will investigate and review the data collection findings of their peers.

Assessment

This task is intended to give the student teachers an opportunity to formatively assess their peers' work.

Possible student teachers' responses

You may set this up as a more formal peer-assessment, in which case student teachers may comment on the value of the data collected and the ease of understanding the results from the method of presentation.

Check student teachers' understanding (10 minutes)

1. Ask each student to take some time to consider how they could have carried out the exercise better and then make the necessary changes to their methodology and tools.
2. The student teachers must use this improved methodology to carry out further data collection outside of the classroom with a similar sized data sample.
3. Encourage the student teachers to compare the two data collection exercises and compare the success of the activity on the second attempt. This data will be used in the next lesson.

Extension and differentiation activities

Learning activity 1: Groups could choose their own data collection method from those listed. They can also choose any module matter.

Learning activity 2: Ask the students to review their methods for validity and reliability, and make any adjustments to improve the data collection.

Review questions: Possible student teachers' responses

Question 1: Why is it useful to statistically analyse and graphically represent assessment data?

Answer: Statistics are used in the analysis of assessment as a way of providing generalisations, and inferring, and communicating information from a sample of a large number of data sets.

Graphical representation of statistical information: Small data sets can easily be analysed without the use of any specialist tools however when data sets contain a lot on entries the use of graphical representation can provide a quick and easy to interpret visualization of the information. A graph is generally used when it would take up less space than the text that would be required to explain the data. Graphs are useful for observing and demonstrating trends and relationships between variables. Line graphs can be used to visually represent date, and are particularly useful for tracking changes over time. For example, the grades of one student could be tracked using a line graph to demonstrate improvements in learning over the year.

5.9. Basic Statistical Knowledge on Educational Tests and Measurements

5.9.1. The nature of statistics

Expected learning outcomes

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

- Understand and verify the quality of classroom test; and
- Understand nature of statistical analysis in education.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods of 50 minutes

Learning strategies: Brainstorming; group discussion; lecture

Preparation needed: None

Resources needed: Student Teacher Textbook; the data collected by the students from Lesson 5.8.1

Period 1

Learning activity 1: Warm-up (25 minutes)

1. Ask the students to stand in a long line against the wall (again).
2. Inform the student teachers that they are not allowed to speak.
3. The student teachers must arrange themselves in age order. The oldest student teacher will be at one end, the youngest will be at the opposite end.

Stop and think

This is a difficult task, as many of the student teachers will be the same number of years old, so they will have to determine the oldest and youngest through the use of months, days and perhaps even hours (if known).

4. While they are in the line, assign them a number and have them shout their number out loud. Ask them to remember this number.
5. Before you ask the student teachers to sit down, take a moment to collect some data from them. Ask them to calculate how old they are in months (age x 12 + number of months since their last birthday). This calculation does not have to be exact.
6. Record how many months old each student is and record that information against their number. This data will also be used in Lesson 5.9.2.

Assessment

This task is assessed in the analysis activity but is principally intended to act as a demonstration of working out averages.

Possible student teachers' responses

The activity is based on student teachers' ages.

Learning activity 2: Analysis (25 minutes)

1. Use the data you have collected from the student teachers to demonstrate the way to establish the mean and mode averages. This information can be demonstrated on the board using frequency tables and graphical representations.
2. Explain to the student teachers how the median average can be worked out, and why this is important. Work out which number student teacher(s) would be the median of the classroom and shout out their number. Ask this student teacher to stand up (or if the class is an even number, have two student teachers standing up together).
3. Give the median student teacher(s) a round of applause as they stand up.
4. Ask the student teachers to discuss the different averages that could have been used in this exercise and decide which is the most useful to use in analysis of classroom data, and think of an example for each type of average.

Assessment

Make an overall assessment of the student teachers' ability to calculate averages and apply them to classroom situations.

Possible student teachers' responses

Student teachers may be able to work out the averages independently, in which case you will initially be able to make this a much more student-centred task. Student teachers should be able to discuss some applications of using averages in classroom situations.

Period 2

Learning activity 3: Group work (40 minutes)

1. Have the student teachers work independently with the data that they collected after Lesson 5.8.1.
2. Using the board, and your data sample as your example, talk the student teachers through the process of statistically analysing their data, in a step by step manner.
3. Introduce the student teachers to the relevant terms used in statistics.
4. Commence by working out the frequency distribution of their data.
5. Support the student teachers in developing a grouped frequency distribution of their data.
6. Support the student teachers to establish the measures of central tendency – mean, median and mode.
7. The student teachers may find faults in their data collection that influence the reliability of the statistical analysis they carry out.
8. Each group will develop their analysis for presentation to the teacher educator. This data and the findings of statistical analysis will also be used in the next lesson.

Assessment

Assess the student teachers' work during the lesson or collect in their findings.

Possible student teachers' responses

Student teachers should be able to work out the averages of their own data.

Check student teachers' understanding (10 minutes)

1. The student teachers are likely to have a good understanding of averages but they may have little knowledge of the usefulness of carrying out this statistical analysis.
2. Suggest examples to the students of where averages and frequencies are used in understanding educational assessment.

3. Ask the student teachers to prepare a short report that introduces the data that they have collected and records the statistical analysis they carried out on that data. Ask them to make a note of how they would improve the process if they were to repeat it.

Extension and differentiation activities

Learning activity 1: You may elect to ask the student teachers to call out their ages and write these in order on the board.

Learning activity 2: The student teachers may be able to work out the averages and present graphs more independently.

Learning activity 3: Ask the students to evaluate the data that they have collected and consider whether the findings of the statistical analysis are useful, and perhaps how they could have changed their data collection methodology to generate more useful information that would be better to represent their sample through statistical analysis.

5.9.2. Analysing data through the use of graphs

Expected learning outcomes

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

- Understand how to evaluate data using graphical analysis.

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 appointed subject/s for the specified grade level/s
C1.1 Demonstrate values and attitudes consistent with Myanmar's tradition of perceiving teachers as role model
C3.1 Demonstrate a high regard for each student's right to education and treat all students fairly
D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Time: Two periods 50 minutes

Learning strategies: Brainstorming; pair work; lecture; gallery walk

Preparation needed: None

Resources needed: Student Teacher Textbook; data collected and analysed by the student teachers and teacher educator in Lessons 5.8.1 and 5.9.1

Period 1

Learning activity 1: Data analysis (pie charts) (50 minutes)

1. Ask the students to discuss the different ways that data can be graphically represented. This will be based on their learning from the textbook but they may also provide some additional examples from their experience at school or from outside of the classroom.
2. Using the data that you collected from the student teachers in Lesson 5.9.1 (age in months) demonstrate the way that this can be graphically represented.
3. Draw a pie chart on the board, making sure to correctly label it. Demonstrate how you calculate the angle of the slices using the formula:

$$x = \left(\frac{\text{frequency}}{\text{whole set}}\right)360^{o}$$

where x = the angle of the sector

4. Discuss with the class the benefits and limitations of using a pie chart to represent data.
5. Ask the students to develop their own (correctly labeled) pie charts based on the data they collected and analysed in Lessons 5.8.1 and 5.9.1.
6. Have the student teachers display their pie charts on the wall and encourage them to take a walk around the room to review the work of their peers.

Assessment

Can student teachers present an accurate pie chart of their data?

Possible student teachers' responses

Student teachers should present a pie chart of their data.

Period 2

Learning activity 2: Data analysis (bar charts) (40 minutes)

1. Using the data that you collected from the student teachers in Lesson 5.9.1 (age in months) demonstrate the way that this can be graphically represented.
2. Draw a simple bar chart and frequency histogram on the board, making sure to correctly label them.
3. Ask the students to assess the two charts and decide which chart is the most useful representation of the data set.
4. Ask the students to develop their own (correctly labeled) bar chart and histogram based on the data they collected and analysed in Lessons 5.8.1 and 5.9.1.
5. Have the student teachers display their charts on the wall and encourage them to take a walk around the room to review the work of their peers.

Assessment

Can student teachers present an accurate bar chart and/or histogram of their data?

Possible student teachers' responses

Student teachers should present a bar chart and/or histogram of their data.

Check student teachers' understanding (10 minutes)

1. Ask the student teachers to think about how they could teach primary students to develop data and draw graphs based on that data. There are a lot of great examples on the internet of how graphs can be drawn in fun and interesting ways.
2. Encourage the student teachers to explore how much fun statistical and graphical analysis can be for children.

Extension and differentiation activities

The student teachers may discuss and present other types of graphs – Venn diagrams, scatter graphs, pictographs, horizontal bar graphs, and so on.

Review questions: Possible student teachers' responses

Question 1: How do you establish the central tendency of a data set?

Answer: Calculate the mean, median or mode average.

Question 2: Why might an Ogive curve be useful in the statistical analysis of assessment scores?

Answer: It allows you to quickly estimate the number of scores that are less than or equal to a particular value.

Unit Summary

Key messages

- Assessment is used by teachers and students before, during or after a period of learning to measure the extent to which the learning outcomes attributed to a lesson or series of lessons have been achieved.

- Different outcomes can be achieved through assessment, and these take the form of assessment of learning (AoL), assessment for learning (AfL) and assessment as learning (AaL).

- **Diagnostic assessment** of the learning needs of students is essential, and this assessment is carried out by a teacher to measure the prior knowledge of students before the commencement of teaching. This is also essential in establishing any disabilities or other factors that could negatively influence a student's ability to have equal access to learning. Diagnostic assessment is essential to ensure inclusivity in the classroom.

- **Summative assessment** generally refers to assessment that is carried out at the end of a period of learning. It is classified as an 'assessment of learning', and can be an informal or formal assessment.

- **Evaluative assessment** is a form of accountability and supports the monitoring and evaluation of learning. Evaluative assessment outcomes, for example in the form of exam scores, are used as a tool to measure the effectiveness and quality of teaching.

- **Assessment for learning (AfL)** is a measure of learning that is carried out during the learning process and is used to inform the teacher what the students have learned so far. Effective use of AfL enables teachers to be more reactive to the learning needs of their students and is an integral component of student-centred teaching.

- **Formative assessments** are used throughout and in conjunction with the learning process. They are classified as AfL and can be both informal and formal. Formative assessment happens all the time, often unconsciously. An experienced teacher is continually informally and formatively assessing the students in their class.

- **Authentic assessment** is a type of formative assessment that requires students to demonstrate the skills and competencies that have been learned in class, in a real-life environment. The integration of knowledge and theory into practical application is a useful learning opportunity, but also an excellent way of assessing learning and the transfer of theory into practice.

- **Self-assessment** of learning by the students is often referred to as AaL. This formative assessment allows students to assess their work, establish areas where they can make improvements and carry out self-learning to address the gaps they have identified in their learning. This empowerment of students to take greater responsibility in their learning is integral to the concept of student-centred learning.

- **Peer-assessment:** Feedback and assessment can also be given between students, and is also categorised as AaL. This peer feedback is useful as it supports students in developing independence and enables them to see the situation 'through the eyes of their teacher'. Peer-assessment and feedback supports the development of critical and reflective thinking skills and can be used in conjunction with other methods of assessment and feedback.

- **Balanced assessment:** It is important to ensure that all the different assessment types and methods are balanced throughout the learning and teaching process to ensure that the learning needs of students are met.

- **Objective assessment** seeks to establish the level of learning by requiring a student to provide a single correct answer although this is limited to a certain extent in that it is assessing knowledge at its lowest order, that is, the remembering of facts.

- **Subjective assessment** allows students to demonstrate not only their knowledge and understanding of a module at a higher order but also allows them to answer the question creatively and reflectively.

- **Formative and summative assessment** can use both objective and subjective assessment methods.

- **Bloom's taxonomy** is a hierarchical model that describes the different levels of learning in the cognitive domain (the part of the brain that deals with intelligence). The model was originally developed in 1956 and was revised in 2001.

- **Feedback** is the driving force of the assessment process, and is a tool that supports the learning and development of students, as it allows students to reflect on their learning and apply that knowledge to improve through a supportive, two-way, formative, continuous process.

- **Open assessment** tasks have potentially many right answers. These types of task are called 'low control' or 'free' and it is possible that two students could get high marks for completely different answers. Open assessment tasks are more associated with higher-order thinking as demonstrated in Bloom's revised taxonomy, such as applying knowledge, analysis and creative thinking.

- **Closed assessment** tasks, also known as 'controlled', generally have only one correct answer, and are usually associated with the testing of knowledge and lower-order cognitive thinking as demonstrated in Bloom's revised taxonomy.

- **Inclusivity** in education does not necessarily refer to students with disabilities, but takes a broader approach to consider diversity. An inclusive learning environment aims to 'eliminate social exclusion that is a consequence of attitudes and responses to diversity in race, social class, ethnicity, religion, gender and ability. As such, it starts from the belief that education is a basic human right and the foundation for a more just society.'[7]

- **Multiple methods of assessment:** By assessing students in different ways, you give the students a better opportunity to demonstrate their knowledge and understanding in a number of ways and you can support their motivation.

- Assessment **must** discriminate **between** students based on their ability or disability and their potential to demonstrate the attainment of learning outcomes.

[7] IBE-UNESCO. (2016). *Training Tools for Curriculum Development – Reaching Out to All Learners: A Resource Pack for Supporting Inclusive Education. Geneva: International Bureau of Education.*

- Assessment **must not** discriminate **against** students based on their ability or disability and their potential to demonstrate the attainment of learning outcomes.

- **The teaching and learning situation** is a specific component of your four-year degree programme and is explained in detail in *the Practicum Handbook.* Practice teaching will occur every year. In year one of the programme, you will visit a practice teaching school for a total of five days in bloc 3 of semester 2.

Year 1	Semester 1	Bloc 1: Lesson study	10 days (2 weeks)	February
	Semester 2	Bloc 2: Lesson study	5 days (1 week)	August
		Bloc 3: Practice/partner school	5 days (1 week)	August

- Peer-assessment supports:

  - A deeper learning and understanding of the module;
  - Transparency and cohesion; and
  - Effective assessment.

- Self-assessment supports:

  - Increased self-awareness;
  - Knowledge attainment;
  - Knowledge gap analysis; and
  - Greater engagement in the learning process.

- A **test** is a specific form of assessment that is carried out in a controlled environment.

- A **measurement** is a value assigned to an assessment of learning. The value is often numerical and can be used to accurately establish a level of learning of the student, either independently or in comparison with their peers.

- A **standardised** test is normally summative and conducted and graded in a consistent manner to ensure that students are graded only on their performance on that test. This can be classified as AoL.

- **Non-standardised testing** is more informal and can take a multitude of forms that are relevant to the circumstances of the assessment. Non-standardised tests are usually formative and classified as AfL or AaL.

- A **high stakes test** is a test with significant consequences to the student that is taking the test. Examples of this include entry and final examinations.

- There are four types of **measurement scales** which can be ranked from simple to complex.

    - **Nominal scale:** This is the simplest level of measurement and can be used to classify data into a minimum of two named categories. Nominal scales are used to 'label' data or variables without a quantitative value or specific order.
    - **Ordinal scale:** The ordinal scale retains the labels of the nominal scale but adds a degree of rank or a value of importance or significance to the measure. Ordinal scales are generally used to demonstrate measurements of frequency.
    - **Interval scale:** The interval scale allows us to see the exact difference between the variables. Interval scales are the first opportunity to use statistical analysis, and mean, median, mode and central tendency can be calculated from the data in this scale. Most of the tests used in educational measurements, such as achievement tests and aptitude tests, are recorded using an interval scale.
    - **Ratio scale:** The ratio scale introduces the concept of 'true-zero' and is the most precise measurement scale that allows for a wide range of descriptive and inferential. statistics to be calculated.

- **Validity:** The validity of a test refers to whether the test measures what it was intended to measure. There are three different measures of validity:

    - **Content validity** refers to how well a test measures the learning outcomes or behaviours it was intended to test.
    - **Criterion validity** relates to the extent that the test results agree with external criteria such as national averages.
    - **Construct validity** refers to whether the measured test results relate to or match anticipated results.

- **Reliability:** The reliability of a test can be measured by how consistently the scores in that test are attained regardless of who will be scoring the test.

- **Achievement testing** is the systematic process of ascertaining the learning achievements of students after a period of learning. Although often assumed to be at the end of a programme or course, with the intention of assigning grades, achievement testing can also be carried out during a programme to understand the level of learning in a formative manner.

- **Norm-referenced tests (NRT):** Used if you wish to rank the achievements of students against each other, to establish higher or lower performing students in a 'league table'. Situations where testing is required to establish the highest performing students on a test such as university entrance exams.

- **Criterion-referenced tests (CRT):** Assessments that measure the knowledge, skills and understanding of students and their attainment of learning outcomes after a period of learning against a pre-determined set of criteria. Each student is assessed in exactly the same way, under the same circumstances, and is graded using the same method. Most importantly, they are assessed on individual merit, not against the achievements of other students.

- **Ipsative assessment** compares the performance of a student against their own previous performance.

- **Data collection:** Teachers often need to record, among other things:

    - Attendance, diagnostic testing results, formative testing, surveys, checklists, observations, behavioural records, tests, quizzes, written assignments, summative tests, portfolios.

- **Written tests** involve students responding to a question which may stand alone or be connected to supplementary information such as a case study or passage of text. They usually take one of two forms:

  - **Short answer questions** give students the chance to organise their knowledge of a module in a coherent and structured manner to demonstrate their understanding in their own words but they must be concise in their writing in order to be able to answer the question within the parameters indicated.
  - **Long answer questions** give students the chance to organise their knowledge of a module in a coherent and structured manner and demonstrate their understanding in their own words in more detail, with reference to supporting information.

- When developing **test questions**, it is important to be fair, and to give the students as much opportunity as possible to demonstrate their knowledge and learning. They must:

  - Relate to a module that has been covered during the teaching and learning components of the class;
  - Be written in a clear unambiguous way so that students can understand exactly what they are expected to do;
  - Be written at a level suitable to the grade of the students being tested;
  - Demonstrate the criteria on how that question will be evaluated; and
  - Demonstrate the number of marks allocated.

- **Marking and grading:** In order to mark written tests in a fair and objective manner, it is important to develop a strict and rigorous mark scheme. In the event that more than one teacher is marking similar tests, this scheme must be agreed upon and followed.

- **Formative data** can be collected through question and answer sessions, quizzes, quick tests, and a variety of ad-hoc assessment methods such as ‘show of hands’ and observations.

- **Summative data** can be collected from summative assessments of students against a pre-determined set of standards. This usually takes the form of exams, the production of a thesis or dissertation or the presentation of a viva voce.

- **Statistics** are used in the analysis of assessment as a way of providing generalisations, and inferring and communicating information from a sample of a large number of data sets.

- **Population** refers to a number of individuals who share or have in common, one or more characteristics.

- **Parameters** refer to the characteristics of a population.

- **Sample** refers to a collection of individuals that represent a portion of a given population.

- **The measure of central tendency** is the value that represents the central position within the data set. Often it is useful in statistical analysis to discover the 'typical' performance of a set of data.

- **Mean:** The mean average of a data set usually lies within the centre of that data set. The mean is calculated as the sum of all the numbers in the data set, divided by the number of items in the data set. In large data sets that do not have significant outliers, the mean average is a useful statistical analysis tool.

- **Median:** In data sets that do have significant outliers, it is often useful to find the median average. The median average is used in statistical analysis to represent the middle of a set of data.

- **Mode:** This average considers the frequency of a number or score within a data set.

- **Graphical representation of statistical information:** Small data sets can easily be analysed without the use of any specialist tools however when data sets contain a lot on entries the use of graphical representation can provide a quick and easy visual interpretation of the information. A graph is generally used when it would take up less space than the text that would be required to explain the data. Graphs are useful for observing and demonstrating trends and relationships between variables.

- **Pie chart:** The pie chart is so named as it looks like a pie – a circle divided into slices that are representative of the data. The area of each slice or section is proportional to the magnitude of the component it represents.

- **Bar chart:** In a normal bar chart the bars are drawn with equal width. The height of each bar represents and is proportional to the magnitude of the information being presented.

- **Histogram:** A form of bar chart that demonstrates the findings of grouped frequency data.

- **Frequency polygon:** A line graph created by placing a data point at the top and centre of each bar of a histogram and then connecting the points with a line.

- **Cumulative frequency curve:** The cumulative frequency curve is used when it is necessary to see the number of instances that occur above or below a particular value.

- **Cumulative percentage curve (Ogive curve)** contains the cumulative percentage data from a grouped cumulative percentage table, and is used when it is necessary to see the number of instances that occur above or below a particular percentage value.

- **Line graphs** can be used to visually represent data, and are particularly useful for tracking changes over time. For example, the grades of one student could be tracked using a line graph to demonstrate improvements in learning over the year. When preparing a line graph, the x axis (the horizontal axis) represents the constant, for example time, and the y axis (vertical) represents changeable values.

Unit reflection

Look at the other modules in this programme with assessment in mind. Think about the cognitive level you are being assessed at, and understand why you are being asked questions that are being worded in a specific way.

Each assessment type has its strengths and weaknesses and each is not always suitable for all situations. In the future you will have to make the right decisions when selecting assessment methods based on the multiple circumstance of learning. Consider the importance of fair and effective non-discriminatory assessment that meets all the needs of all the students.

Be mindful about how you provide feedback to others outside the classroom, and consider the effect that the feedback you provide, as well as the feedback you receive, has on you and the people that you interact with. The ability to provide good quality feedback is an invaluable skill that will serve you well as teachers. Take note of the feedback you receive in other modules and recognise the different types introduced during this lesson.

One criticism of teaching and learning from both teachers and students is that there is often too much testing: 'testing for the sake of testing'. It is useful to consider the importance of assessment and testing, but also to be aware of the relevance, and often overreliance on testing as a routine. It is good practice as a teacher to be mindful of the amount of testing that takes place in the classroom, and whether it really is being used as a useful assessment of learning or as a stick to keep students in check, and whether the assessment of learning could be better carried out in more inventive and interesting ways.

The concepts of validity and reliability are complicated and sometimes difficult to understand. Validity and reliability are not just used to refer to educational testing but any form of testing. For example, when a medical professional is testing the recovery of a patient in hospital after an operation, the validity and reliability of the test are important.

It is important to remember that tests and examinations are not an opportunity to trick the students, they are a chance for the student to demonstrate their knowledge and learning fairly – remember that there are various types of test that will give students the best opportunity to do this.

Finally, collecting data is not the end of the process but what you do with the data is most important. Often too much data collection can confuse matters and distract you from the original goal of data collection.

Are the results of a simple statistical analysis of any use? It is important to design your methodology by asking yourself the questions: What information do I need to collect to be useful?' and 'What do I need this information for?' This preparation can ensure that the right data is collected, that unnecessary data is not collected and that the data can be useful in making decisions or analysing the information investigated.

Further reading

5.1.

Assessment for learning: 10 research-based principles to guide classroom practice. (2002). Retrieved from https://www.aaia.org.uk/content/uploads/2010/06/Assessment-for-Learning-10-principles.pdf

Assessment for Learning Effective Classroom. (2013). Retrieved from https://www.theguardian.com/teacher-network/teacher-blog/2013/aug/29/assessment-for-learning-effective-classroom

CCEA. (2009). A*ssessment for Learning: A Practical Guide.*

Clarke, M. (2011). *Framework for Building an Effective Student Assessment System.* Washington, DC: The World Bank Group.

IBE-UNESCO. (2017). *Training Tools for Curriculum Development – Inclusive Student Assessment.* Geneva: International Bureau of Education.

James, M. (1998). *Using Assessment for School Improvement.* Oxford: Heinemann.

Department of Education and Skills. (n.d.). National Council for Curriculum Assessment. Retrieved from An Roinn Oideachais agus Scileanna website: https://www.education.ie/en/The-Department/Agencies/National-Council-for-Curriculum-and-Assessment-NCCA-.html

5.2.

Anderson, L. W., & Krathwohl, D. R. (2001). A Taxonomy for Learning, Teaching and Assessing: *A Revision of Bloom's Taxonomy of Educational Objectives.* New York: Longman.

Eberly Center for Teaching Excellence. (n.d.). Verbs for Bloom's Taxonomy. Retrieved from Carnegie Melon University. website: http://www.cmu.edu/teaching/resources/Teaching/CourseDesign/Objectives/BloomsTaxonomyVerbs.pdf

5.3.

Assessment for Learning Effecive Classroom. (2013). Retrieved from https://www.theguardian.com/teacher-network/teacher-blog/2013/aug/29/assessment-for-learning-effective-classroom

Centre for the Development of Teaching and Learning. (n.d.). An A-Z of Assessment Methods. Retrieved from University of Reading website: https://www.reading.ac.uk/web/files/eia/A-Z_of_Assessment_Methods_FINAL_table.pdf

Eberly Center for Teaching Excellence. (n.d.). Verbs for Bloom's Taxonomy. Retrieved from Carnegie Melon University. website: http://www.cmu.edu/teaching/resources/Teaching/CourseDesign/Objectives/BloomsTaxonomyVerbs.pdf

IBE-UNESCO. (2017). *Training Tools for Curriculum Development – Inclusive Student Assessment.* Geneva: International Bureau of Education.

IBE-UNESCO. (2017). '*What are the basic conditions and competencies needed to make student assessment more inclusive?' Training Tools for Curriculum Development – Inclusive Student Assessment.* Geneva.

5.4.

Assessment for Learning Effecive Classroom. (2013). Retrieved from https://www.theguardian.com/teacher-network/teacher-blog/2013/aug/29/assessment-for-learning-effective-classroom

This is an example of the type of video that could be used in the class. This is a primary school Maths lesson in the UK:

Schools, C. (2014). Teaching Cambridge Primary Maths. Retrieved from https://www.youtube.com/watch?v=FG2yyDYrI5M

This website from the University of New South Wales in Australia contains some interesting videos on peer review and assessment:

Student Peer-assessment. (n.d.). Retrieved from University of New South Wales Sydney website: https://teaching.unsw.edu.au/peer-assessment

This website from the University of Reading in the UK has some interesting an useful information on peer and self-assessment and feedback:

Engage in Assessment. (n.d.). Retrieved from University of Reading website: https://www.reading.ac.uk/engageinassessment/

5.5.

Kizlik, B. (2014). *Measurement, Assessment and Evaluation in Education.* Retrieved from https://www.cloud.edu/Assets/PDFs/assessment/Assessment__Evaluation_Measurement.pdf

This paper has some information about validity and reliability in educational testing:

Phelan, C., & Wren, J. (n.d.). EXPLORING RELIABILITY IN ACADEMIC ASSESSMENT. Retrieved from University of Northern Iowa: College of Humanities and Fine Arts Student Outcomes Assessment website: https://chfasoa.uni.edu/reliabilityandvalidity.htm

This website has some detailed information on validity and testing:

US Department of Labor and Employment and Training Administration. (1999). Unit 3: Understanding Test Quality-Concepts of Reliability and Validity. Retrieved from hr-guide.com website: https://www.hr-guide.com/Testing_and_Assessment/Reliability_and_Validity.htm

5.6.

This table on the differences between NRT and CRT is useful:

Referenced Test Tables. (n.d.). Retrieved from Emporia State University website: https://www.emporia.edu/~persingj/nrtvscrt.htm

5.7.

This website has some basic information on Ipsative testing:

Sheridan, B. (2015). Ipsative assessment. Retrieved from University of Alaska Fairbanks website: https://iteachu.uaf.edu/ipsative-assessment/

Some useful information on the different types of written test can be found here:

Centre for Teaching Excellence. (n.d.). Exam Questions: Types, Characteristics, and Suggestions. Retrieved from University of Waterloo website: https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/developing-assignments/exams/questions-types-characteristics-suggestions

This booklet produced by the Kansas State Education Department in USA is an interesting and useful resource covering writing test questions:

Clay, B. (2001). Is this a trick question: A short guide to writing effective test questions. In E. Root (Ed.), *Kansas State University.* Retrieved from https://www.k-state.edu/ksde/alp/resources/Handout-Module6.pdf

5.8.

This paper from the Australian Council for Education Research contains a comprehensive investigating and analysis of an 'evidenced-based' approach to education:
Matters, G. (2006). *Using data to support learning in schools: Students, teachers, systems.* Australian Education Review: Australian Council for Educational Research.

5.9.

B.Ed. first year, Educational Test and Measurement. (n.d.).

B.Ed. second year, Educational Test and Measurement. (n.d.).

This website includes templates and instruction on how to develop an interest in data and graphs in younger students, it is interesting to consider not only how useful data can be, but how interesting and fun it can be too:
Graphs and Charts. (n.d.). Retrieved from Teacher Vision website: https://www.teachervision.com/lesson-planning/graph-chart-teacher-resources

Glossary

Terms	Elaborations
Assessment for learning (AfL)	A measure of learning carried out during the learning process to inform the teacher what the students have learned so far.
Authentic assessment	A type of formative assessment that requires students to demonstrate the skills and competencies that have been learned in class, in a real-life environment.
Bar chart	A chart in which the height of each bar represents and is proportional to the magnitude of the information being presented.
Bloom's taxonomy	A hierarchical model that describes the different levels of learning in the cognitive domain (the part of the brain that deals with intelligence). The model was originally developed in 1956 and was revised in 2001.
Closed assessment	Tasks, also known as 'controlled', which generally have only one correct answer.
Construct validity	Refers to whether the measured test results relate to or match anticipated results.
Content validity	Refers to how well a test measures the learning outcomes or behaviours it was intended to test.
Criterion validity	Refers to the extent that the test results agree with external criteria such as national averages.
Criterion-referenced tests (CRT)	Assessments that measure the knowledge, skills and understanding of students and their attainment of learning outcomes after a period of learning against a pre-determined set of criteria.
Cumulative frequency curve	A curve used to show the number of instances that occur above or below a particular value.
Cumulative percentage curve (Ogive curve)	Used when it is necessary to see the number of instances which occur above or below a particular percentage value.

Terms	Elaborations
Diagnostic assessment	Assessment carried out by a teacher to measure the prior knowledge of students before the commencement of teaching.
Evaluative assessment	A form of accountability thatsupports the monitoring and evaluation of learning. Evaluative assessment outcomes, for example in the form of exam scores, are used as a tool to measure the effectiveness and quality of teaching.
Formative assessment	Assessment used throughout and in conjunction with the learning process. Can be informal or formal. An experienced teacher is continually informally and formatively assessing the students in their class.
Frequency polygon	A line graph created by placing a data point at the top and centre of each bar of a histogram and then connecting the points with a line.
High stakes test	A test with significant consequences. Examples of this include entry and final examinations.
Histogram	A form of bar chart that demonstrates the findings of grouped frequency data.
Interval scale	Allows us to see the exact difference between the variables. Interval scales are the first opportunity to use statistical analysis, and mean, median, mode and central tendency can be calculated from the data in this scale.
Ipsative assessment	Compares the performance of a student against their own previous performance.
Line graph	Can be used to visually represent data, and is particularly useful for tracking changes.
Mean	The mean average of a data set usually lies within the centre of that data set. The mean is calculated as the sum of all the numbers in the data set, divided by the number of items in the data set.
Median	The median average is used in statistical analysis to represent the middle of a set of data.

Terms	Elaborations
Mode	This average considers the frequency of a number or score within a data set.
Nominal scale	The simplest level of measurement which can be used to classify data into a minimum of two named categories. Nominal scales are used to 'label' data or variables without a quantitative value or specific order.
Non-standardised test	More informal testing which can take a multitude of forms that are relevant to the circumstances of the assessment. Non-standardised tests are usually formative and classified as AfL or AaL.
Norm-referenced test (NRT)	Used if you wish to rank the achievements of students against each other, to establish higher or lower performing students in a 'league table'.
Objective assessment	Seeks to establish the level of learning by requiring a student to provide a single correct answer.
Open assessment	Tasks that have potentially many right answers. These types of task are called 'low control' or 'free' and it is possible that two students could get high marks for completely different answers.
Ordinal scale	The ordinal scale retains the labels of the nominal scale, but adds a degree of rank or a value of importance or significance to the measure. Ordinal scales are generally used to demonstrate measurements of frequency.
Pie chart	The pie chart is so named as it looks like a pie – a circle divided into slices that are representative of the data. The area of each slice or section is proportional to the magnitude of the component it represents.
Population	Refers to a number of individuals who share or have in common, one or more characteristics.
Ratio scale	The ratio scale introduces the concept of 'true-zero' and is the most precise measurement scale that allows for a wide range of descriptive and inferential statistics to be calculated.

Terms	Elaborations
Reliability	The reliability of a test can be measured by how consistently the scores in that test are attained regardless of who will be scoring the test.
Sample	Refers to a collection of individuals that represent a portion of a given population.
Standardised test	A summative test conducted and graded in a consistent manner to ensure that students are graded only on their performance on that test. This can be classified as AoL.
Statistics	Used in the analysis of assessment as a way of providing generalisations, and inferring and communicating information from a sample of a large number of data sets.
Subjective assessment	Allows students to demonstrate not only their knowledge and understanding of a module at a higher order but also allows them to answer the question creatively and reflectively.
Summative assessment	Generally refers to assessment that is carried out at the end of a period of learning. It is classified as an 'assessment of learning', and can be an informal or formal assessment.
Validity	The validity of a test refers to whether the test measures what it was intended to measure. There are three different measures of validity (see **content validity, construct validity, criterion validity**).

Bibliography

No Title. (n.d.). Retrieved from Faulty Focus website: www.facultyfocus.com/

B.Ed. second year, Educational Test and Measurement. (n.d.).

B.Ed. first year, Educational Test and Measurement. (n.d.).

Sample Lesson Plan for Younger Children. (n.d.). Retrieved from wikiHow website: https://www.wikihow.com/Sample/Lesson-Plan-for-Younger-Children

The Picture Exchange Communication System (PECS). (n.d.). Retrieved from National Autism Resources website: https://www.nationalautismresources.com/the-picture-exchange-communication-system-pecs/

No Title. (n.d.). Retrieved from National Autistic Society website: https://www.autism.org.uk/

No Title. (2019). Retrieved from do2Learn website: http://do2learn.com/

Simple Machines Science Projects: Make a Lever. (n.d.). Retrieved from Home Science Tools: inspired learning website: https://learning-center.homesciencetools.com/article/how-to-make-a-lever-simple-machines-science-project/

The Water Cycle! (n.d.). Retrieved from National Geographic Kids website: https://www.natgeokids.com/uk/discover/science/nature/water-cycle/

What do you say? (2018). *Time Magazine.* Retrieved from https://www.timeforkids.com/k1/what-do-you-say/

Graphs and Charts. (n.d.). Retrieved from Teacher Vision website: https://www.teachervision.com/lesson-planning/graph-chart-teacher-resources

Referenced Test Tables. (n.d.). Retrieved from Emporia State University website: https://www.emporia.edu/~persingj/nrtvscrt.htm

Engage in Assessment. (n.d.). Retrieved from University of Reading website: https://www.reading.ac.uk/engageinassessment/

Student Peer-assessment. (n.d.). Retrieved from University of New South Wales Sydney website: https://teaching.unsw.edu.au/peer-assessment

*Assessment for Learning Effective Classroom. (*2013). Retrieved from https://www.theguardian.com/teacher-network/teacher-blog/2013/aug/29/assessment-for-learning-effective-classroom

Preparing Lesson Plan. (n.d.). Retrieved from teacher certification website: http://www.teachercertification.org/a/preparing-lesson-plans.html

How to Make Teacher Worksheets in 5 Easy Steps. (n.d.). Retrieved from http://www.worksheetlibrary.com/teachingtips/5stepstoworksheets.html

Kidzone Worksheets for Children. (n.d.). Retrieved from https://www.kidzone.ws/

Strategies for the Social Studies Classroom: Role Play/Simulation. (n.d.). Retrieved from https://otis.coe.uky.edu/ccsso/cssapmodules/sbp/sbp/Role PlaySimulation.html

Framework for 21st century learning. (n.d.). Retrieved from P21 Partnernship for 21st century Learning. website: http://www.p21.org/our-work/p21-framework.

Interactive learning. (n.d.). In Wikipedia. Retrieved from https://en.wikipedia.org/wiki/Interactive_Learning

Elementary Teaching Methods. (n.d.). Retrieved from Teach Elementary. website: www.teachelementary.org

Pedagogical Theory. (n.d.). Retrieved from http://edutechwiki.unige.ch/en/Pedagogical_theory

What is Pedagogical Practices. (n.d.). Retrieved from IGI Global. website: 09/20/18

Kids Matter. Emotional development. (n.d.). Retrieved from https://www.kidsmatter.edu.au/mental-health-matters/social-and-emotional-learning/emotional-development

Assessment for learning: 10 research-based principles to guide classroom practice. (2002). Retrieved from https://www.aaia.org.uk/content/uploads/2010/06/Assessment-for-Learning-10-principles.pdf

Anderson, L. W., & Krathwohl, D. R. (2001). *A Taxonomy for Learning, Teaching and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives.* New York: Longman.

Armstrong, P. (n.d.). Bloom's Taxonomy. Retrieved from Vanderbilt University Center for Teaching. website: https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/

Bailey, R. (2001). Conscious Discipline. Oviedo, FL: Loving Guidance.

Bailey, R. (2018). The Conscious Discipline Brain State Model. Retrieved from Conscious Discipline. website: https://consciousdiscipline.com/methodology/brain-state-model/

Bartlett, S., & Burton, D. (2016). Introduction to Education Studies (4th ed.). Sage Publishing.

Bass, R. V., & Good, J. W. (2004). Educare and Educere: Is Balance Possible in the Education System? *The Educational Forum*, 68, 161–168. Retrieved from https://files.eric.ed.gov/fulltext/EJ724880.pdf

Beaty, J. (2012). *Skills for Preschool Teachers* (9th ed.). New York: Pearson.

Berkely Center for Teaching and Learning. (n.d.). Active Learning Strategies. Retrieved from UC Berkeley. website: https://teaching.berkeley.edu/active-learning-strategies.

Bhat, A. (n.d.). NOMINAL orDINAL, INTERVAL, RATIO SCALES WITH EXAMPLES. Retrieved from QuestionPro website: https://www.questionpro.com/blog/nominal-ordinal-interval-ratio/

Billabong International School Tirrutani. (n.d.). Primary School. Retrieved from http://billabongtiruttani.co.in/primary-school.html

Boaler, J. (2016). *Mathematical mindsets.* San Francisco, CA: John Wiley & Sons, Inc.

Borich, G. D. (2007). *Effective Teaching Method-Research-Based Practice* (6th ed.). Ohio: Pearson Prentice Hall.

Boyadzhieva, E. (2016). *Learner-centered teaching and learner autonomy. Procedia - Social and Behavioral Sciences., 232*(October), 35–40. Retrieved from https://www.sciencedirect.com/science/journal/18770428

Bridge TEFL. (2017). Teaching English Grammar with the Guided Discovery Approach. Retrieved from https://bridge.edu/tefl/blog/teaching-english-grammar-guided-discovery-approach/

Brophy, J., & Alleman, J. (2009). Meaningful social studies for elementary students. *Teachers and Teaching,* 15(3), 357–376. https://doi.org/10.1080/13540600903056700

Brown, P. C. (2014). *Make It stick : The science of successful learning.* Cambridge, MA: The Belknap Press of Harvard University Press.

Bruner, J. S. (1978). The role of dialogue in language acquisition. In A. Sinclair, R. J. Jarvelle, & W. J. M. Levelt (Eds.), *The Child's Concept of Language.* New York: Springer-Verlag.

Cast Inc. (2018). Until learning has no limits.

CCEA. (2009). *Assessment for Learning: A Practical Guide.*

Center for Research on Learning and Teaching. (n.d.). Learning Theories. Retrieved from University of Michigan website: http://www.crlt.umich.edu/tstrategies/tslt

Centre for Teaching Excellence. (n.d.). Exam Questions: Types, Characteristics, and Suggestions. Retrieved from University of Waterloo website: https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/developing-assignments/exams/questions-types-characteristics-suggestions

Centre for the Development of Teaching and Learning. (n.d.). An A-Z of Assessment Methods. Retrieved from University of Reading website: https://www.reading.ac.uk/web/files/eia/A-Z_of_Assessment_Methods_FINAL_table.pdf

Chowdary, S. B. J. R. (2004). *Mastery of Teaching Skills.* New Delhi: Discovery Publishing House.

Clarke, M. (2011). *Framework for Building an Effective Student Assessment System*. Washington, DC: The World Bank Group.

Clay, B. (2001). Is this a trick question: A short guide to writing effective test questions. In E. Root (Ed.), *Kansas State University.* Retrieved from https://www.k-state.edu/ksde/alp/resources/Handout-Module6.pdf

Cotton, K. (1988). "Classroom questioning". School Improvement Research Series - Research you can use. Retrieved from North West Regional Educational Laboratory. website: https://educationnorthwest.org/sites/default/files/ClassroomQuestioning.pdf

Cox, J. (2017). Teaching Strategies: 5 Ideas for Instructing Vocabulary. Retrieved from http://www.teachhub.com/teaching-strategies-5-ideas-instructing-vocabulary

Croke, A. (2018). *Are employee motivation and engagement the same?* Retrieved from http://www.rhythmsystems.com/blog/are-motivation-and-engagement-the-same

Dean, C. B., Hubbell, E. R., Pitler, H., & Stone, B. (2012). Classroom instruction that works: research-based strategies for increasing student achievement. (2nd ed.). Alexandria, VA: ASCD.

Department of Educationa and Skills. (n.d.). National Council for Curriculum Assessment. Retrieved from An Roinn Oideachais agus Scileanna website: https://www.education.ie/en/The-Department/Agencies/National-Council-for-Curriculum-and-Assessment-NCCA-.html

Department of Educational Theory. (2015). Educational Theory *(First Year, First Semester Student Textbook)*. Yangon: Yangon University of Education.

Dhiman, O. P. (2008). *Foundations of Education.* APH Publishing Corporation.

Dias, C. F., Pelletier, C. M., & Provenzo, E. F. (2006). T*ouch the Future…Teach.* Boston: Pearson Education, Inc.

Dick, W., Carey, L., & Carey, J. O. (2001). Introduction to Instructional Design (Unit 1). In *The Systematic Design of Instruction*. London: Longman.

Dweck, C. S. (2008). *Mindset: the new psychology of success.* New York: Ballantine Books.

Eberly Center. (n.d.). Principles of Teaching and Learning. Retrieved from Carnegie Melon University. website: https://www.cmu.edu/teaching/principles/

Eberly Center for Teaching Excellence. (n.d.). Verbs for Bloom's Taxonomy. Retrieved from Carnegie Melon University. website: http://www.cmu.edu/teaching/resources/Teaching/CourseDesign/Objectives/BloomsTaxonomyVerbs.pdf

Education.com. (n.d.). *Free Worksheets and Printables for Children*. Retrieved from https://www.education.com/worksheets/

Education.com. (n.d.). Hands on Games for Kids. Retrieved from https://www.education.com/activity/offline-games/

Eggen, P., & Kauchak, D. (1999). *Educational Psychology: Windows on Classrooms.* Ohio: Merrill.

Ferguson, R. (2012). Learning analytics: Drivers, developments and challenges. *International Journal of Technology Enhanced Learning,* 4(5/6), 304–317.

Ferlazzo, J. (2016). Three Good 'Bloom's Taxonomy According to…' Videos Using Movie Scenes. Retrieved from http://larryferlazzo.edublogs.org/2016/12/31/three-good-blooms-taxonomy-according-to-videos-using-movie-scenes/

Ferlazzo, J. (2009). The Best Resources for Helping Teachers use Bloom's Taxonomy in the Classroom. Retrieved from http://larryferlazzo.edublogs.org/2009/05/25/the-best-resources-for-helping-teachers-use-blooms-taxonomy-in-the-classroom/

Fisher, D., & Frey, N. (2009). Feed up, back, forward. *Educational Leadership.,* 67(3), 20–25. Retrieved from http://www.ascd.org/publications/educational-leadership/nov09/vol67/num03/Feed-Up,-Back,-Forward.aspx

Fizzics Education. (n.d.). *How to Teach Science Using Role Plays.* Retrieved from https://www.fizzicseducation.com.au/articles/how-to-teach-science-using-role-plays/

Formative Assessment Insights. (n.d.). Writing Tips for Learning Goals and Success Criteria. Retrieved from https://www.oregon.gov/ode/educator-resources/assessment/Documents/writing_tips_learning_goals_success_criteria.pdf

Frost, S. (n.d.). *How to Teach Science to Primary School Children.* Retrieved from https://www.theclassroom.com/teach-science-primary-school-children-5993089.html

Galloway, S. M. (2016). Motivation or engagement? What's the difference? *BIC Magazine Online.,* 82. Retrieved from https://proactsafety.com/uploads/file/articles/motivation-or-engagement-whats-the-difference.pdf

Garrett, T. (2008). "Student-Centered and Teacher-Centered Classroom Management: A Case Study of Three Elementary Teachers." J*ournal of Classroom Interaction, 43*(1), 34–47. Retrieved from https://files.eric.ed.gov/fulltext/EJ82

Gregory, G., & Kaufeldt, M. (2012). *Think big, start small: How to differentiate instruction in a brain-friendly classroom.* Bloomington, IN: Solution Tree Press.

Guido, M. (2017). 25 Easy Ways to Use Technology in the Classroom. Retrieved from Prodigy. website: https://www.prodigygame.com/blog/ways-to-use-technology-in-the-classroom/

Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. New York: Routledge.

Hattie, J. (2009). *Visible Learning: A Synthesis of 800 Meta-Analyses Relating to Achievement*. Routledge.

Haynes, K. (n.d.). Twelve Ways to Teach Using Multiple Intelligences. Retrieved from Teach Hub website: http://www.teachhub.com/12-ways-teach-using-multiple-intelligences

Hockett, J., & Doubet, K. (2017). 6 Strategies for promoting student autonomy. Retrieved from Edutopia website: https://www.edutopia.org/article/6-strategies-promoting-student-autonomy

Hoffer, E. (1973). *Reflections on the Human Condition.* New York: Harper & Row Publishers.

IBE-UNESCO. (2017). *Training Tools for Curriculum Development – Inclusive Student Assessment.* Geneva: International Bureau of Education.

IBE-UNESCO. (2017). *Training Tools for Curriculum Development – Inclusive Student Assessment.* Geneva: International Bureau of Education.

IBE-UNESCO. (2017). T*raining Tools for Curriculum Development – Inclusive Student Assessment.* Geneva: International Bureau of Education.

IBE-UNESCO. (2017). *'What are the basic conditions and competencies needed to make student assessment more inclusive?' Training Tools for Curriculum Development – Inclusive Student Assessment.* Geneva.

Informational Literacy Group. (n.d.). Pedagogic Theory. Retrieved March 9, 2018, from https://infolit.org.uk/teaching/developing-your-teaching/pedagogic-theory/

James, M. (1998). *Using Assessment for School Improvement*. Oxford: Heinemann.

Killian, S. (2014). The myths & facts about direct instruction. Retrieved from The Australian Society for Evidence Based Teaching. website: http://www.evidencebasedteaching.org.au/direct-instruction-facts-myths/

Kizlik, B. (2014). *Measurement, Assessment and Evaluation in Education*. Retrieved from https://www.cloud.edu/Assets/PDFs/assessment/Assessment__Evaluation_Measurement.pdf

Kumar, S., & Ahmad, S. (2008). *Meaning, aims, and process of education.* Retrieved from https://sol.du.ac.in/SOLSite/Courses/UG/StudyMaterial/16/Part1/ED/English/SM-1.pdf

Lai, E. R. (2011). *Motivation: A literature review.* Retrieved from https://images.pearsonassessments.com/images/tmrs/Motivation_Review_final.pdf

Lakshmi, D. (2004). *Basic Education*. New Delhi: Discovery Publishing House.

Lemouv, D. (2010). T*each like a champion: 49 techniques that put students on the path to college*. San Francisco, CA: Jossey-Bass.

Lockyer, S. (2016). *Lesson Planning for Primary School Teachers.* UK: Bloomsbury Education.

Martin, D., & Joomis, K. (2007). *Building Teachers: A Constructivist Approach to Introducing Education.* Belmont, CA: Wadsworth.

Marzano, R. ., & Pickering, D. (2011). *The Highly Engaged Classroom.* Bloomington, IN: Solution Tree Press.

Mathseeds. (n.d.). Classroom Math Activities. Retrieved from https://mathseeds.com/articles/2018/02/26/classroom-math-activities/

Matters, G. (2006). *Using data to support learning in schools: Students, teachers, systems.* Australian Education Review: Australian Council for Educational Research.

Matters, G. (2006). *Using Data to Support Learning in Schools Students, teachers, systems.* ACER Press.

McLeod, S. A. (2008). Simply Psychology. Retrieved from Bruner website: https://www.simplypsychology.org/bruner.html

Meador, D. (2019). Strategies for Teachers: The Power of Preparation and Planning.

Ministry of Education Myanmar. (n.d.). *Education College Curriculum Framework for 4-Year Degree*. Yangon.

Mukhopadhyay, M. (2005). *Total Quality Management in Education* (2nd ed.). New Delhi: SAGE Publications.

Murray, B. P. (n.d.). The New Teacher's Guide to Creating Lesson Plans. Retrieved from Scholastic website: https://www.scholastic.com/teachers/articles/teaching-content/new-teachers-guide-creating-lesson-plans/

National Institute of Education Singapore. (2015). *A Teacher Education Model for the 21st century.* Retrieved from http://www.nie.edu.sg

Nunan, D. (2003). Nine steps to learner autonomy. *Symposium A Quarterly Journal In Modern Foreign Literatures,* 193–204.

Oregon Diploma. (2007). High School Graduation Requirements. Retrieved from https://www.oregon.gov/ode/students-and-family/OregonDiploma/Pages/default.aspx

Petty, G. (2004). *Teaching Today: A Practical Guide* (3rd ed.). UK: Nelson Thornes.

Phelan, C., & Wren, J. (n.d.). EXPLORING RELIABILITY IN ACADEMIC ASSESSMENT. Retrieved from University of Northern Iowa: College of Humanities and Fine Arts Student Outcomes Assessment website: https://chfasoa.uni.edu/reliabilityandvalidity.htm

Pollack, J. E. (2007). *Improving student learning one teacher at a time.* Alexandria, VA: ASCD.

Prince, M. (2004). Does Active Learning Work? *A Review of the Research. Journal of Engineering Education,* 93(3), 223–231. https://doi.org/10.1002/j.2168-9830.2004.tb00809.x

Reece, I., & Walker, S. (2003). *Teaching, Training and Learning: A Practical Guide* (4th ed.; B. E. P. Ltd, Ed.). UK.

Roell, K. (2019). Study tips for better grades: how to find the main idea. Retrieved from ThoughtCo. website: https://www.thoughtco.com/how-to-find-the-main-idea-3212047

Ryan, R. L. (1993). Using Pictures in Teaching Art and Other Stuff.

Sang., M. S. (2003). *Teacher Education Series, An Education Course for KPLI, Theme 2.* (S. Jaya, Ed.). KBSB.

Schools, C. (2014). Teaching Cambridge Primary Maths. Retrieved from https://www.youtube.com/watch?v=FG2yyDYrI5M

Schreurs, J., & Dumbraveanu, R. (2014). A Shift from Teacher Centered to Learner Centered Approach. *International Journal of Engineering Pedagogy, 4*(1). Retrieved from http://online-journals.org/index.php/i-jep/article/viewFile/3395/3192

Schug, M. C. (2003). Teacher-centered instruction. In J. Leming, L. Ellington, & K. PorterMagee (Eds.), *Where did social studies go wrong?* (pp. 94–110). Retrieved from http://lexiconic.net/pedagogy/TeacherCenteredSocialStudies.pdf

Shabani, K., Khatib, M., & Ebadi, S. (2010). Vygotsky's zone of proximal development: Instructional implications and teachers' professional development. *Teaching English Language, 3*(4), 237–248.

Sheridan, B. (2015). Ipsative assessment. Retrieved from University of Alaska Fairbanks website: https://iteachu.uaf.edu/ipsative-assessment/

Shulman, L. S. (1986). *Those who understand: Knowledge growth in teaching. Educational Researcher. (AERA Presidential Address).* (pp. 4–14). pp. 4–14.

Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review.,* (February), 1–22.

Silver, H. F., & Perini, M. (2010). The 8 C's of engagement: How learning styles and instructional design increase student commitment to learning. In R. Marzano (Ed.), *On excellence in teaching* (pp. 319–344). Bloomington, IN: Solution Tree Press.

Slavin, R. E. (2006). *Educational Psychology: Theory and Practice* (8th ed.). New York: Prentice Hall.

Slavin, R. (2010). "Co-Operative Learning: What Makes Group-Work Work?" *The Nature of Learning: Using Research to Inspire Practice.*, 161–178. https://doi.org/http://dx.doi.org/10.1787/9789264086487-9-en

Smekens Education Solutions Inc. (2014). Scaffold Mini-Lesson Concepts to Teach Main Idea. Retrieved from https://www.smekenseducation.com/Scaffold-MiniLesson-Concepts-to.html

Sousa, D. A. (2015). *How the brain learns mathematics.* Thousand Oaks, CA: Corwin.

Staff, T. C. (2010). *Effective Lesson Planning. Teaching Excellence in Adult Literacy Fact Sheet No. 8.*

Standford Teaching Commons. (n.d.). Guided Discovery Problems. Retrieved from Standford website: https://teachingcommons.stanford.edu/resources/learning/learning-activities/guided-discovery-problems

Tassoni, P., & Beith, K. (2002). *Diploma in Child Care and Education.* Heinemann Educational Publishers.

Teacher Vision. (n.d.). Sequencing Lesson. Retrieved from https://www.teachervision.com/reading-comprehension/sequencing-lesson

Teaching Elem PE. (2014). Guided Discovery. Retrieved from https://www.youtube.com/watch?v=FRccB08cQMs

The Child Development Institute. (n.d.). When Learning Comes Naturally. Retrieved July 9, 2018, from Sarah Lawrence College. website: https://www.sarahlawrence.edu/cdi/learning/when-learning-comes-naturally.html

The Peak Performance Center. (n.d.). Learning Theories. Retrieved from http://thepeakperformancecenter.com/educational-learning/learning/theories/

The Room 241 Team. (2012). Most common teaching styles used with elementary school students. Retrieved from A Blog by Concordia University-Portland. website: www.education.cu-portland.edu/blog

The Room 241 Team. (2012). Teacher-centered vs. student-centered education? Retrieved from A blog by Concordia University-Portland. website: https://education.cu-portland.edu/blog/classroom-resources/which-is-best-teacher-centered-or-student-centered-education/

The School House. (2017). Decoration or distraction: the aesthetics of classrooms matter, but learning matters more. Retrieved from The Conversation website: http://theconversation.com/decoration-or-distraction-the-aesthetics-of-classrooms-matter-but-learning-matters-more-83418

Thomsen, S., & Ackermann, E. (2015). Whole Child Development Matters. Retrieved from https://www.edutopia.org/blog/changemakers-whole-child-development-undervalued-bo-stjerne-thomsen-edith-ackermann

Tomlinson, C. A. (2005). *How to differentiate instruction in mixed-ability classrooms.* Upper Saddle River, NJ.

Turnbull, B. (2013). Ask a grown-up: how do bees make honey? Retrieved from The Guardian website: https://www.theguardian.com/lifeandstyle/2013/aug/10/how-bees-make-honey-ask-a-grown-up

UNCW. (n.d.). *Writing SMART Learning Objectives.* Retrieved from https://uncw.edu/career/documents/writingsmartlearningobjectives.pdf

UNESCO. (1996). *Learning: The treasure within: A report to UNESCO of the International Commission on Education for the twenty-first century.* Paris.

UNICEF. (2001). Many Pathways of Learning. Retrieved from www.unicef.org/teachers/learner/paths.htm

University of Minnesota: Center for Educational Innovation. (n.d.). Active Learning. Retrieved from https://cei.umn.edu/active-learning.

US Department of Labor and Employment and Training Administration. (1999). Unit 3: Understanding Test Quality-Concepts of Reliability and Validity. Retrieved from hr-guide.com website: https://www.hr-guide.com/Testing_and_Assessment/Reliability_and_Validity.htm

Vygotsky, L. S. (1978). *Mind in Society: the Development of Higher Psychological Processes.* Retrieved from https://files.eric.ed.gov/fulltext/EJ1081990.pdf

Walkgrove Limited. (2015). *Engagement and Motivation, improving learning outcomes.* Retrieved from https://www.walkgrove.co.uk/assets/resources/Engagement-and-motivation.pdf

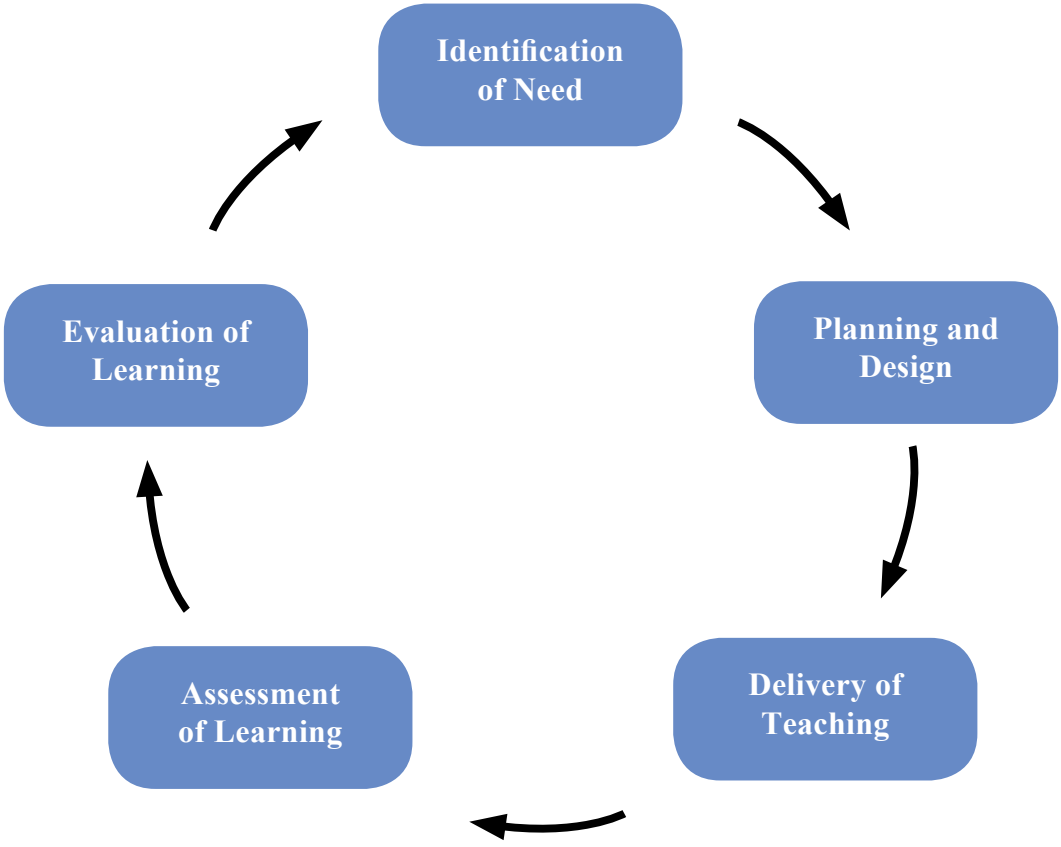
White, J., & Dalli, C. (Eds.). (2017). *Under Three-Year-Olds in Policy and Practice.* Singapore: Springer.

Wong, H. K., & Wong, R. T. (2005). *The First Days of School: How to be an Effective Teacher.* Singapore: Harry K. Wong Publications, Inc.

Wood, D. J., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychiatry and Psychology,* 17(2), 89–100.

Annexes

Handout 1: Teaching Cycle



Handout 2: Assessment Tasks

Example 1: Matching

Draw a line between the matching words below

Hands	Slippers
Head	Gloves
feet	Hat

Example 2: Writing essays

Explain in no less than 100 words what formative assessment is.

Example 3: Putting into order

Put the following items in the correct order:

A football, a pea, the sun, the moon, the earth, a grain of sand.

Example 4: Open ended questions

Answer the following questions:

a) What are some of the components that make up a car?
b) What are the main characteristics of assessment?

Example 5: Closed answer questions

Answer the following questions:

a) What year was Bogyoke Aung San assassinated?
b) If I have 30 sweets and I want to share them equally between my 12 friends, how many sweets does each friend get?

Example 6: Classifying

List these countries by population from highest to lowest:
Bangladesh, China, India, Myanmar, Laos, Australia

Example 7: Multiple choice questions

Which of these is not a mammal?

a) Ayeyarwady dolphin
b) Pangolin
c) Hornbill
d) Dugong

Example 8: Open gap fill questions

Complete the sentences:

a) Smoking is bad because_____
b) Eating fruit is good because_____

Example 9: Closed gap fill questions

Fill in the gaps in this quote by former UN Secretary-General U Thant, using the words below:

others	*origin*	*respect*	*human*

'Every _____ being, of whatever _____, of whatever station, deserves _____. We must each respect _____ even as we respect ourselves.'

Handout 3: 'Follow Instructions' Test

Name _____ Score _____

(You have three minutes to complete this test.)

1. Read all the instructions carefully before doing anything.
2. Write your name in the correct place on this page.
3. Answer in fewer than 10 words: 'What is formative assessment?'
4. Circle the spelling mistake in this sentence.
5. Draw a small square in each corner of the paper.
6. Put an 'X' in each square.
7. Put a circle around each square.
8. Sign your name under your name at the top of this paper.
9. Loudly call out your first name when you get this far along.
10. Answer in no more than five words: 'What is summative assessment?'
11. Put a circle completely around the answer to number nine.
12. Underline the words 'formative' and 'summative' in this paper.
13. Draw a circle around the word 'sentence', every time it appears on this paper.
14. Define 'feedback' in two words.
15. Draw a rectangle around the word 'corner' in instruction five.
16. If you have followed the instructions carefully to this point, call out: 'I have.'
17. On the reverse side of this paper, add 8950 and 9305.
18. Put a circle around your answer and put a square around the circle.
19. If you are the first person to reach this point, loudly call out: 'I am the first person to reach this point, and I am the leader in following directions.'
20. Underline all even numbers on the left side of this paper.
21. Loudly call out: 'I am nearly finished. I've followed all the directions.'
22. Now that you have finished reading everything, all you need to do is complete instructions 1 and 2! Do not complete any of the remaining instructions. Keep quiet so that others in your class will continue to read without disturbance from you. Do not make any sign to give a clue to them that you have finished the test.
23. Congratulations! You have passed the test!

Handout 4: Developing Test Questions

When developing test questions, it is important to be fair, and to give the students as much opportunity as possible to demonstrate their knowledge and learning. This also applies for the way that test questions are graded.

The questions given in a written test must always:

1. Relate to a module that has been covered during the teaching and learning components of the class. Students should not be expected to be able to answer questions with new information that has not been already covered.

2. Be written in a clear unambiguous way so that students can understand exactly what they are expected to do. The longer the question, the greater the opportunity for confusion. Any limitations to the expected answer must made be clear to the student. This could be the number of words used or the specific information to respond to.

3. Be written at a level suitable to the grade of the students being tested and with the expectation that a good answer to the question can be written within the time allowed.

4. Demonstrate the criteria on how that question will be evaluated, for example the wording of the question should indicate the level of answer required: ‘evaluate’, ‘explain’, critique and so on.

5. Demonstrate the number of marks allocated to it, so that students can make an informed decision on the amount of time, and length of answer to dedicate to the question. When allocating marks to questions, it is important to consider whether and how the points can be allocated in the event that some, but not all of the expected answer is given.

Notes

Notes

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