02

ACTIVE TEACHING AND LEARNING

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CONTENT

1 FOUNDATION AND RATIONALE

Many reforms are geared to enable teachers to move away from standard 'learning by rote' methods. On the other hand actively engaging learners is encouraged to develop learners' knowledge, skills and attitudes necessary for the 21st century. To develop both learners' and teachers' competencies, it is important for teachers to understand the foundations and rationale of actively engaging learners. Therefore, this subtopic focuses on the underlying principles of Active Teaching and Learning.

1.1 Introduction to active teaching and learning

To direct attention to the process where learners are actively engaged in learning, educators sometimes refer to student-centered pedagogy, child-centred pedagogy, critical thinking pedagogy, inquiry or discovery-based teaching. In this General Teaching Methods course reference is made to **Active Teaching and Learning** as an overarching term to describe to underlying principles and methods common to actively engaging learners in the teaching and learning process.

Question

Many reforms are geared to enable teachers to move away from standard 'learning by rote' methods, and move to methods where learners are 'actively engaged' in learning. Take your study notebook and write down your thoughts according to the two guiding questions below:

- **What do you understand by Active Teaching and Learning?**
- **Write a short answer by completing the following sentence:**

  "Active Teaching and Learning is important because...".

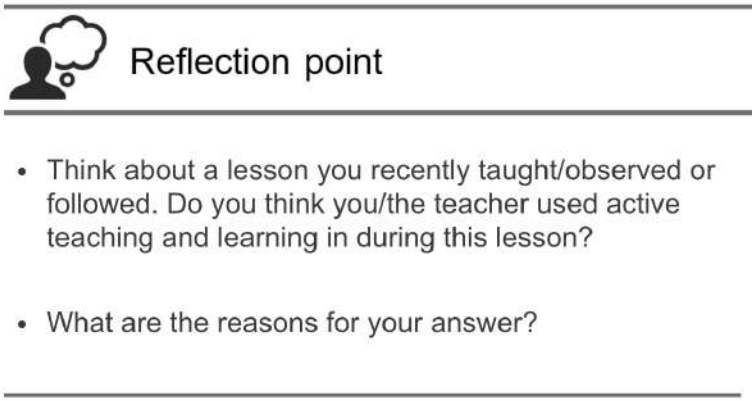
1.1.1 Defining active teaching and learning

Active teaching and learning is an approach that informs the practices of teaching based on the belief that people learn best by actively constructing knowledge rather than by passively adding memorised facts to an existing store of knowledge. In active teaching and learning, engaging learners to think critically about problems prevails over the transmission models where teachers are the central source of knowledge, engaging learners mainly through rote memorisation.

Active teaching and learning derives from an alternative theory of knowledge known as **constructivism.** While not opposed to the use of scientific methods to create knowledge, constructivism assumes that knowledge emerges through reflection on one's experiences, ideas and interactions.

In other words, knowledge is created through a process of new information interacting with prior knowledge and experiences of learners. Several prominent education scholars, such as Jean Piaget, demonstrate the relevance of constructivism to pedagogy. They show how knowledge is relevant when it is 'in use' and linked to previous experience rather than when it is 'delivered.'

Constructivism suggests that teachers should create the conditions for learners to discover and actively construct knowledge -to 'learn to learn'- and to develop the higher order thinking skills of analysis and synthesis through inquiry-oriented activities.



1.1.2 Rationale of active teaching and learning

Teachers often rely on the traditional teacher-centered education styles where they are viewed as the information provider while learners simply listen, memorise and take notes. This approach has proven to limit the skills and knowledge development of learners. Research shows that active teaching and learning fosters understanding, memorisation and problem-solving abilities (mental cognitive processes) and helps to canalise emotions, motivation, and interpersonal relationships (psychological factors).

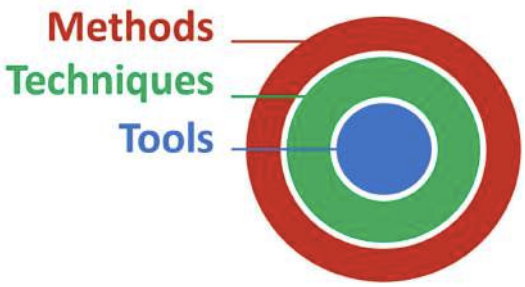
With active teaching and learning, learning systems shift focus from the teacher to the learner and foster independent reasoning, problem solving and critical thinking. Learners become more likely to retain a higher percentage of knowledge and skills because they engage with different types of study materials, participate in and out of the classroom and exchange information with their peers.

Watch the below video and learn more about what learners and teachers experience while integrating active teaching and learning in their classrooms.

Link to the video: https://bit.ly/37xQuwS

2 METHODS, TECHNIQUES AND TOOS

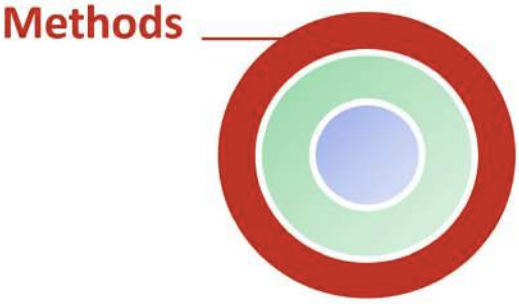
After an introduction to the foundation and underlying rationale of active teaching and learning, this subtopic provides you with a series of methods, techniques and tools that facilitate the effective panning and delivery of the active instructional process. A variety of hands-on Active Teaching and Learning instructional methods, techniques and tools and how to integrate them during the teaching and learning process is introduced.



2.1 Methods

A method is an organised, orderly, systematic, and well-planned procedure aimed at facilitating and enhancing learners' learning. A method considers the abilities, needs, and interests of the learners and is employed to achieve certain aims of instruction. To make it an effective instrument, it should be presented with a certain amount of efficiency and ease. More so, the teaching method aims to achieve greater teaching and learning output, thus saving time, efforts and even money on the part of both the teacher and the learner.

Methods direct and guide the teacher and the learners in undertaking any lesson or activity. Remember that there is no such thing as the best method. Thus, there is no single correct way to teach a class. Instead, there are many good ways of teaching the learners.



2.1.1 Problem-based learning

Problem-based learning is a method that challenges learners to learn by solving problems presented in the form of case studies and simulations. This method enables learners to be self-directed and to acquire lifelong learning skills. Problem-based learning produces critical thinkers and problem solvers as learners integrate knowledge and skills from a number of disciplines. It motivates learners to find and use appropriate learning resources. The method is rooted in the experiential learning tradition. Its characteristics include:

- Complex, real world situations that do not have one 'right' answer
- The teachers acts as a facilitator
- It addresses a specific problem while calling for knowledge and skills from several disciplines
- Tends to be shorter than project-based learning, and follows specific, traditionally prescribed steps
- The outcome is a proposed solution, expressed in writing or in an oral presentation

Overview of key steps

1. Identify a problem relevant to the curriculum. Focus on complex, real world situations that do not have one right answer (lesson planning)
2. Split students into small groups, assign the problem to several groups for them to work on (lesson delivery)
3. Let students investigate the problem and generate ideas from various sources (lesson delivery)
4. Pose critical questions to enable students analyse ideas and knowledge obtained from various sources (lesson delivery)
5. Let students present their findings and solutions to the class (lesson delivery)

2.1.2 Project-based learning

Project-based learning engages individual or groups of learners in a design-research implementation process culminating in the public exhibition of a final product , such as a publication, artwork, service, object, etc. During this process, learners make multiple drafts and try-outs, learn to make choices and how to demonstrate the concepts and skills they have acquired. In agreement with the teacher, learners can choose any kind of project provided it is related to the curriculum and to a real life context.

Doing project-based learning, learners become motivated and self-directed critical thinkers and problem solvers, able to research and integrate knowledge from various sources and disciplines to acquire lifelong skills.

Overview of key steps

1. Define to project selection criteria (lesson planning)
2. Guide learners in designing and planning each step of their project and support them to define their project goal and final product (lesson delivery)
3. Guide learners in the research and implementation phases (lesson delivery)
4. Organise feedback sessions on planning, progress, problems, solutions, etc. (lesson delivery)
5. Organise an exhibition where all final products are presented to peers, academic staff, parents, community members, etc. (lesson delivery)

2.1.3 Learning stations

Learning stations (also called ‘corners’ or ‘activity centres’) are specific areas in a classroom where learners rotate from station to station to complete an educational task using different approaches. A debriefing session follows after to discuss what was learned at the different learning stations. During this session, learners can also answer questions and explore next steps.

A classroom learning station is a designated place in a classroom where learners complete an educational task. This could be at a computer, where learners are asked to investigate a topic (e.g. through an online search assignment). This could be a table where historical objects are on display for examination. This could be a boom box where learners listen to music from a particular time period. The fundamental objective of all tasks at learning stations is to promote the use, elaboration, and application of concepts to advance learner understanding.

Overview of key steps

1. Determine the overall objective (lesson planning)
2. Define the different tasks for each station (lesson planning)
3. Explain the different tasks and timing for each learning station (lesson delivery)
4. Assign learners in manageable groups and move around the stations to assist the learners (lesson delivery)
5. Facilitate participatory debriefing sessions (lesson delivery)

2.1.4 Learning contracts

A learning contract is an agreement, written collaboratively between a learner and a teacher that details what is to be learned, how it will be learnt, and how that learning will be verified. It sometimes involves the learner's parents. Learning contracts allow learners to decide what they wish to strive for, which activities they will engage in, and how they will demonstrate that they have satisfactorily completed their studies.

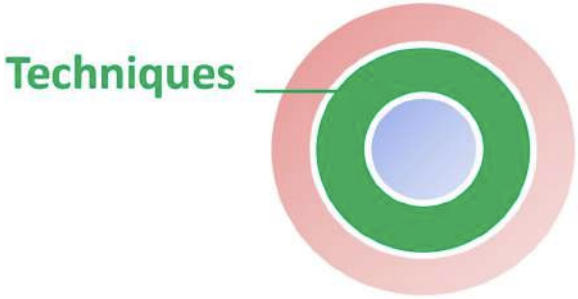
Overview of key steps

1. Identify the learning objectives in relation to the curriculum and determine where the learner should be in regard to each competency. Ensure that the objectives describe what learners will learn, not what they will do.
2. Develop a rubric clearly indicating learning objectives, measurable criteria, tasks and levels of achievement required, and grading system.
3. Specify the material and human resources needed, and the methods and strategies (techniques, tools) that will be employed.
4. Specify realistic target dates for follow-up meetings and for completion of the contract.
5. Carry out the contract.

2.2 Techniques

The objective of using different techniques is to engage teachers in the use and development of teaching and learning resources and in sharing these resources, not only with their colleagues, but also with their learners. Different techniques have different potentials to enhance active teaching and learning.

All the techniques introduced address the process where teachers and learners are constructing knowledge and insight in the world around them through active exploration, experimentation and reflection by interacting with each other and the learning materials. Techniques have the potential to innovate and/or transform classroom teaching and learning practice. The different techniques can for example support collaborative learning, problem solving, meaningful learning, etc.



2.2.1 Groupwork

Group work is a form of cooperative learning that involves having learners work together to maximise their own and one another's learning. Group work technique is mainly used to generate ideas, increase learners' confidence in their answers, encourage broad participation in plenary session, promote higher level of reasoning and learn concepts in-depth, develop skills such as teamwork, critical thinking, interpersonal communication and peer teaching.

Typically, a group consists of around 5-10 learners, though in large classrooms, group work can be organised for as many as 15-20 learners. Whether you use a small or large group in a teaching/ learning situation depends on the nature of the assignment, Effective group work assigns responsibilities to all members and brings discipline in cooperative learning to both dominant personalities and to shy learners. The outcome of group work is usually better and richer than what an individual would have done.

Overview of key steps

1. Design the task(s) for the group activity(s) (lesson planning)
2. Determine the groups' size and assign learners groups (lesson delivery)
3. Clearly describe the objectives and assignments given to each group, and identify learner roles (secretory, timekeeper, spokesperson, etc.) (lesson delivery)
4. Set and explain ground rules to learners including duration of activities and time of transitions (lesson delivery)
5. Monitor the group activities, facilitate knowledge sharing and analysis of findings (lesson delivery)

2.2.2 Demonstration

Demonstration is a specific type of presentation and a technique of teaching by example rather than simply explaining. Demonstration is a visual practical presentation of a concept, process or skill showing how something works or is performed. The learners perform a demonstration to ascertain learning.

The demonstrator performs the tasks step-by-step to enable the learners to repeat the same task independently or in groups. Here, the teacher supports the learners in their attempts, provides guidance and feedback, and offers suggestions for alternative approaches. Demonstration helps learners to 'learn-by-doing' when there is not enough equipment, when specialised knowledge is required or when safety of the learners is at stake.

Overview of key steps

1. List the equipment, teaching aids and other materials that you will need during the lesson (lesson planning)
2. List relevant questions for before, during and after the demonstration to engage the learners and assess their understanding (lesson planning)
3. Prepare the equipment before the lesson (lesson planning)
4. Arrange the classroom seating to enable all learners to clearly view the demonstration
5. While giving the demonstration, ask the relevant guiding questions you had earlier prepared (lesson delivery)

2.2.3 Presentation

A presentation delivers content through oral, audio and visual channels allowing teacher-learner interaction and making the learning process more attractive. Through presentations, teachers can clearly introduce difficult concepts by illustrating the key principles and by engaging the audience in active discussions. When presentations are designed by learners, their knowledge sharing competences, their communication skills and their confidence are developed.

Overview of key steps

1. Define the objectives of the presentation in accordance to the lesson plan (lesson planning)

2. Prepare the structure of the presentation, including text, illustrations and other content (lesson planning)

3. Set up and test the presentation equipment and provide a conducive seating arrangement and environment for the audience (lesson planning)

4. Invite the audience to reflect on the presentation and give feedback (lesson delivery)

5. After the presentation, propose activities or tasks to check the learners' understanding

Tips

- Use **Mentimeter** for interactive presentations and to get instant feedback from your audience. www.mentimeter.com
- An infographic; graphic visual representations of information, data, or knowledge, is an innovative way to present. Use the digital tool **Canva** to create your own infographics. www.canva.com
- Use the Microsoft software **PowerPoint**, to easily create digital presentations.
- The purpose of a presentation is to visually reinforce what you are saying. Therefore the text should contain few words and concise ideas organised in bullet-point.
- Support your text using **images**.
- Provide time for reflection and interaction between the presenter and the audience, for example by using **Mentimeter**.

2.2.4 Brainstorming

Brainstorming is a technique to generate ideas and thoughts. It does not have the purpose to find a solution for a specific problem, but to gather a list of spontaneous ideas from learners. Different brainstorming techniques can be applied to facilitate the process of gathering and organising ideas. For all these techniques, learners are given a specific task on a given topic and to share their ideas at various levels. Example techniques are:

Paper-carousel

Each participant spontaneously notes an idea on a sheet of paper, then passes it to the neighbour on the right side. On the sheet of paper you got from the left side, each participant notes a second idea. The last two steps are repeated until the learners get back their original sheet of paper. The best ideas are highlighted and selected.

Falling leaves

While standing in a circle, each learner notes down ideas on a flash card and drops them on the floor. Each learner looks at the ideas dropped on the floor and will not drop the same idea. After a set of time, the session is stopped and related ideas are clustered, appropriate heading is provided.

Think, pair, share

Each learner first thinks individually through a task. Then, the class is organised into pairs who share ideas and come up with a consensus solution. next, couples are organized to pair up (groups of four) to consequently share ideas and also come up with a consensus. Last, each group of four presents their ideas in plenary.

Overview of key steps

1. Clearly define the topic to be brainstormed (lesson planning)
2. Choose the type of brainstorming that is more relevant to your class: Paper-Carousel, Falling Leaves, Think/Pair/Share (lesson planning)
3. Set up ground rules for the group to function: timing, learners' active participation, number of ideas per person, etc.
4. Facilitate the process until the end to help learners to come up with several relevant ideas (lesson delivery)
5. With the learners clarify, merge, categorise and evaluate the ideas generated by the group (lesson delivery)

2.2.5 Simulation

Simulation is the setting-up of a realistic environment modelling a real life situation or a scientific process by using role-play, models, games, virtual labs, etc. Simulation involves learners trying out situations, such as future occupational experiences as it happens in reality.

In this learning process, they will be able to learn by doing, predict outcomes and express their feelings, perceptions and experiences. Simulation is useful to analyse phenomena, objects or events. It can assist learners in identifying problems and solutions and enables them to apply previously learned theory in a realistic way. Teachers can use simulations to illustrate how things work so that learners get a better insight of complex processes.

Overview of key steps

1. Design or choose the simulation tool relevant most suitable to your lesson: role-play, low-cost experiment, virtual lab program and make sure it is well integrated in the lesson plan.
2. Create a positive learning climate so that learners feel comfortable using the technique.
3. Prepare the instructions on flashcards or on the board to ensure that they are clear for everyone.
4. Allow time for feedback on the simulation and to summarise the learning points.

Tips

- Make the simulation as similar as possible to the real life situation. For example, if you teach road transport use models of buses and taxis, and characters representing pedestrians, drivers or policemen.
- Make sure to gradually introduce learners to the simulation technique, starting with a simple situation in which the whole class can participate.

2.2.6 Storytelling

People like hearing stories, putting themselves in the place of characters and telling and re-telling stories. Stories are helpful to convey society's culture, values and history in form of legends, fables, myths and real life experiences. Storytelling is used to present or demonstrate processes, introduce ideas, challenge learners or illustrate abstract concepts such as life, honour, wisdom and courage.

Photo stories can give more body to a story as one image can tell more than thousand words. Storytelling promotes creativity and critical thinking as well as confidence, fluency in speech, listening, reading and writing skills. It develops imaginative skills and inquiring minds and provides opportunities to transfer learning, deepen understanding of concepts and retain information. By capturing the attention and interest of the learners, storytelling boosts the teacher-learner relationship and makes the instructional process lively and interesting.

Overview of key steps

1. Identify ideas.
2. Design a scenario or a plan.
3. Collect data and resources: text, images, music, actors, voices, equipment etc.
4. Develop and rehearse the story.
5. Prepare for sharing: presentation, publication etc.

Tips

- Select a story relevant to the concept(s) to be learnt.
- Apply appropriate gestures, facial expressions, posture, movement, tone of voice and pace.
- Keep the story short and lively.
- Design relevant questions about the story to check the learners' understanding.
- Provide a conducive environment for the presentation and to enable sharing of ideas.

2.2.7 Drill

A drill is a classroom technique to aid memorisation by way of spaced repetition. Drills promote the acquisition of knowledge or skills through repetitive practice.

Drill is a useful technique to introduce a new lesson and to familiarise learners with new concepts. Flashcards and quizzes can be used to execute a learning drill. A flashcard bears information in words or numbers while a quiz is a form of mind game in which the learners (as individuals or in teams) attempt to answer questions correctly. Both can also be used to consolidate or assess knowledge after finishing a certain section. Drill exercises can give the teacher immediate feedback about learners' understanding at each phase of lesson.

Overview of key steps

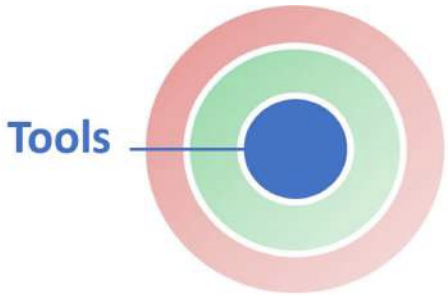
1. Choose the drill tools most suitable to your lesson theme: flashcards or quizzes
2. Adequately prepare for your chosen tools.
3. Prepare the ground rules that will encourage active participation by the learners: timing, members' active participation, number of ideas per person, etc.

Tips

- Drill exercises should be short to allow assessing progress several times during the lesson.
- Provide enough time for all learners to actively participate in the drill.
- Provide enough time to correct misunderstandings or respond to the learners' challenges.
- Try to alternate between different drill tools (flashcards, quizzes) to maintain learners' motivation until the required level of achievement is attained.

2.3 Tools

Tools should inspire teachers to reflect on teaching methodologies and learners' learning. Tools will not automatically change the teaching practice and the learning activity as it all depends on how teachers and learners use them. All tools have the potential to innovate and transform teaching and learning practice, with a focus on the learner and real-world applications. Teachers are expected to have the skills to explore a series of teaching and learning tools and understand the added value of these resources for the enhancement of Active Teaching and Learning.



2.3.1 Quiz

A quiz is a mind game in which learners (as individuals or in teams) attempt to answer questions correctly. Quizzes are usually scored in points and many are designed to determine a winner from a group of participants. In an educational context, a quiz is sometimes used to assess learners. It often has fewer questions of lesser difficulty and requires less time for completion than a test.

Quizzes can be used to introduce a new topic. This gives the teacher an instant idea of what learners already know about the topic. Quizzes can be used to revise learners' retention of previous lessons or at the end of a lesson. This allows the teacher to get feedback on learners' progression.

Overview of key steps

1. Design the quiz: blackboard, flipchart, flashcards, etc. (lesson planning)
2. Determine the resources you need: computer, projector, manila paper, markers, audio-player, etc. (lesson planning)
3. Carefully design questions relevant to your lesson plan and set clear ground rules for the learners (lesson planning)
4. Set the scoring system and time learner get per question (lesson planning)
5. If learners are participating in teams, think about the composition of those teams (lesson planning)

6. Decide whether you want to award the winners with a prize (lesson planning)

Tips

- Amaze learners by creating your quiz using speciliased digital tools as **Kahoot!**, **Quizzizz** and **Mentimeter**
- Quizzes can be useful to implement **drilling techniques**.
- Quizzes can be organized as a form of **groupwork**.

2.3.2 Roleplay

Roleplaying is a sort of **simulation** allowing learners to impersonate the behaviour of specific roles such as a supervisor or a client who must make a decision in a real life context. To try to respond as their given character would, learners conduct research, and engage in higher order thinking. By interacting with their peers, learners experiment and learn to deal with unfamiliar real life situations while also exercising their observation and communication skills.

Overview of key steps

1. Prepare a scenario relevant to the lesson (lesson planning)
2. Distribute clear instructions (handouts) for the roles that learners will play (lesson delivery)
3. Give learners time to prepare and rehearse their roles (lesson delivery)
4. After each performance, allow time for class discussion and to summarise the learning points (lesson delivery)

Tips

- Encourage and give time to learners to research their character's features.
- Set ground rules in order to ensure a conducive environment for all to feel safe while acting.

2.3.3 Low cost experiments

Unlike what many may think, you don't need a big fancy lab full of expensive materials and you can use experiments in any subject (not only science). Many experiments can be conducted with the help of simple and inexpensive everyday materials. For learners and teachers, it stimulates creativity.

Experiments are a form of **simulation**. The main objective of low-cost experiments is to enable teachers to introduce practical activities to the learners, thus improving their critical thinking and problem solving skills. Practical activities allow linking theory with practice and daily life. Moreover, with practical activities you can address specific skills and attitudes with learners such as team work, accuracy and creativity.

Overview of key steps

1. Decide which kind of experiment you want to set up (lesson plan).
2. Look for low-cost materials.
3. Try out the experiment in advance.
4. Set up the experiment in class.
5. Clearly explain all the different steps and leave time for learners to design and/or execute the experiment themselves.

2.3.4 Flashcards

Flashcards are cards bearing information such as words or numbers, or questions and answers on either or both sides. They can be used in classroom or during private study. Flashcards can support learning of any subject matter. In the classroom, an immediate teacher overview of the learners' understanding of the topic at hand can be obtained by asking learners to display their answer to a specific question on a flashcard.

Coloured cards can also be used for learners' self-assessment of their level of understanding (e.g. green card for "understood", yellow card for "need support", red card for "not understood"). For example, flashcards can be used question and answers drills, interactive education games, or the assess learners' progress.

Overview of key steps

1. Prepare the flashcards according to your need (blank, coloured or pre-filled cards).
2. Explain the rule to the drill to the learners.
3. With the learners, observe and discuss the answers of the class.
4. Use the results to guide the current and/or future lessons.

Tips

- Create flashcards online using **Quizlet**. Quizlet employs you to create sets of terms and descriptions in the form of flashcard and provides you with several ways (e.g. quizzes and other interactive games) to review the content on the flashcards. You might also encourage your learners to create their own flashcard decks to share with their peers.

- There are also other uses for flashcards: in private study, flashcards are useful to summarize, memorize and classify knowledge for further revisions; pre-filled flashcards can also be used to design interactive educational games for any subject.

2.3.5 Videos

Videos are used to record, playback, broadcast and display moving visual images. Educational videos have been widely used in classrooms, as they can provoke reflection and discussion and provide deeper insight of issues that have been introduced.

Videos are particularly useful to explain a process or an action. As videos can be paused and rewinded at any time, teachers and learners can control the speed (e.g. slow motion) or repeat particular fragments as needed. With their smartphone or with a cheap video recorder, videos can be produced by teachers and learners to document an experiment, a role-play, a class trip etc. As learners are involved in acting or making the video, their motivation to participate, assess, and receive feedback increases.

Overview of key steps

1. Select the process or action you want to show.
2. Search a relevant video online.
3. Show the video and pause it on the parts you want to emphasise.
4. Allow for class discussion.

Tips

- There is a wealth of educational videos on specialised websites as **TeacherTube, TED, Teaching Channel, Edpuzzle,** etc.
- Amaze learners by creating your own educational videos using **Powtoon** www.powtoon.com
- Download videos, so you can use them offline.

2.3.6 Images

"Every picture tells a story and one image says more than a thousand words..."

An image can be used to introduce, express, share, and describe a range of subjects (concepts, stories, trips, phenomena, persons, objects or events). Teachers can use images to present a problem through visual stories that learners will be encouraged to solve. For example, a picture of a tropical storm/melting ice caps can be used to introduce the concept of global warming. The use of images in teaching and learning has benefits to support learner's comprehension, retention, and application. It stimulates spatial intelligence and increases the motivation of the learner.

Overview of key steps

1. Select the concept, story, phenomenon, person or event you want to depict.
2. Find or draw the picture(s) you need.
3. Brainstorm with the learners which words or concepts come to mind.
4. Guide the learners discussion by questioning their interpretations.

Tips

- Many images, photos and editing software are available online, such as Pics4Learning.
- A digital photo story can combine different media: images, text, voice, motions and music.
- Think of images that would present the subject in just one or a few images.

2.3.7 Charts and maps

Charts and maps can be used to present abstract ideas or show their relationships in a visual form. A chart is a graphical representation where data is represented by symbols such as bars, lines or slices. A map is a graphical representation of tri-dimensional space where physical, social, medical or other features can also be indicated, e.g. brain map, DNA map, cosmic map etc.). It can be static (road map) or animated (weather forecast).

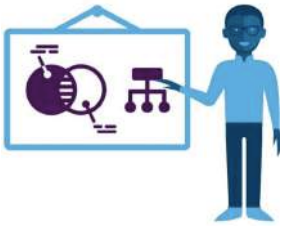
Overview of key steps

1. Choose the kind of charts and maps you need, according to the data you want to illustrate.
2. Draw your charts and maps before the lesson, either by hand (with flipchart, manila paper or rice-sacks, colour markers and a ruler) or by computer using free office software or maps available on the internet.
3. Display the charts and maps in class in a visible way (stick it to the board, or use a projector).

Tips

- Bring the world inside your classroom using **Google Maps** and **Google Earth** mapping services.
- Make simultaneous reference to the chart or map to enhance understanding of the concepts introduced.
- Engage the learners in researching or drawing maps and charts helps them to memorise the lesson.
- Charts and maps should be designed in a clear and attractive way (colours, labelling, etc.)
- Charts and maps can be used at the different stages of a lesson to facilitate discussion and consolidate knowledge

2.3.8 Diagrams



A diagram is a visual representation of information used to show how conceptual objects are interrelated. Diagrams are particularly useful to study complex

material. Diagrams are useful to transform text-based data and information in a visual representation. Learners' attention is also more likely to be attracted by a diagram rather than by a long text. Finally, diagrams help learners with a visual rather than verbal memory to better retain the displayed information.

Overview of key steps

1. Define the kind of diagram you need, according to the topic you want to describe.

2. You can draw your diagram by hand, but there are also free online diagram software available, such as **Draw**. Also, Microsoft software as **Excel** and **PowerPoint** are useful to create digital diagrams.

3. Display the diagram in class in a visible way (stick it to the board, or use a projector).

Tips

- Use different shapes and colours to depict objects, processes and relations and remember to include a legend.
- Ask the learners to make diagrams in class or as an assignment: they will have fun while checking and summarizing their knowledge.

2.3.9 Student portfolio

A student portfolio is a systematic collection of learner work and related material that depicts a learner's activities, accomplishments and achievements in one or more subjects. Portfolios allow for competence-based assessment by measuring the learner's growth and development. Learners develop a sense of ownership about their portfolios and understand where they made progress and where improvement is needed. Contents of a learner's portfolio may vary with the level of the learner and the types of assignments given in class. Some examples are:

- Learner's work (assignments, assessments, evaluations, score sheets, sample products, attendance sheets).
- Reflections, teacher observations, conference records, progress reports, worksheets, artefacts (poems, letter, reading logs and audio /videotape recordings, photos, sketches).

Overview of key steps

1. Decide together on the portfolio content, such as samples of learner's work, reflections, teacher observations and conference records, and agree on timelines.

2. Develop assessment criteria and procedures to keep track of the learners' progress.
3. Plan for formal learner-teacher conferences as well as informal meetings in which progress is reviewed and discussed, and reflection encouraged.

Tip

Ask your learners to develop their portfolio online (E-portfolio) using **Padlet** (www.padlet.com) Padlet is an application where learners can easily create a virtual pin board to hold resources and to showcase their work.