National Curriculum

Pedagogy and Assessment Guide (PAG)

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EDUCATION

Pedagogy and Assessment Guide

Acknowledgements

Contents

PURPOSE OF THE PEDAGOGY AND ASSESSMENT GUIDE (PAG)

The intention of preparing this PAG is to provide teachers and school leaders with a comprehensive insight into the pedagogical dimensions identified in the National Curriculum Framework (NCF). These dimensions are:

- Creating a Positive Learning Environment
- Connecting Prior Learning to New Learning
- Making Learning Meaningful
- Fostering Reflective Practice
- Catering to Individual Difference

The PAG explores each pedagogical dimension in depth and identifies various elements and implementation strategies crucial for teachers' understanding in each. Teachers would find it helpful to study some of these elements and strategies and reflect on their current teaching practices to bring appropriate positive change.

This guide attempts to pull together some of the current best teaching practices that are supported by research. For instance, the PAG helps teachers to see the links and focuses on Assessment for Learning (AfL), as classroom instruction is very closely related to assessment.

Teachers need to familarize themselves to the forms of thinking, planning, delivering and reflecting that are emphasized in this PAG. The sections on "let's reflect" provide some guiding thoughts on various dimensions.

While considering the limitations of this guide, it is left for the schools to review and reflect on their current classroom practices, identify issues that could be dealt immediately and issues that need further improvement.

INTRODUCTION

Teaching is hard. Teaching and learning is a complex process which requires careful planning, assessing of individuals and the situation, and selection and demonstration of appropriate instructional strategies.

Teachers play a critical role in engaging students in the process of learning. What teachers do and how they do it, has paramount importance on the quality of the student's educational experience. Effective teaching is about what students learn and not simply what students do.

The pedagogical dimensions are not a single formula that teachers need take into account without thinking. It is important to understand the interconnectedness of these various dimensions that would assist teachers to bring quality teaching into their classroom settings. Thus, teachers have to be skillful in using the strategies identified in this guide.

As you go ahead with the guide, you may be aware that some of things mentioned here are things that you have come across before or are already doing in your classroom. We want teachers to reflect critically on their practices, evaluate and create dialogue among teachers, evaluate students learning based on evidence and change practices accordingly.

How the PAG may help you?

- Explores the pedagogical dimensions identified in the NCF
- Provides strategies for teachers to use in the classroom
- Connects instruction to assessment
- Identifies issues that teachers need to reflect and change in their current teaching practices
- Identifies implications for the schools' long term plans.

CREATING A POSITIVE LEARNING ENVIRONMENT

A positive learning environment exists when the school community accepts and values all students regardless of their individual differences, making them feel safe and secure. In such an environment students take ownership of their learning which is challenging and enjoyable.

Why create a positive learning environment?

A positive learning environment:

- Improves the quality of students learning and achievement
- Makes students feel supported and accepted by peers and the school community
- Makes students feel a sense of belonging to the school community thus raising their self-esteem.
- Enhances positive behaviour
- Creates a safe and healthy relationship among students as well as the school community
- Accommodates all students regardless of their individual differences.
- Allows students to take responsibility for their own learning.

What makes a positive learning environment?

A positive learning environment is the final result of the stakeholders of the school – students, teachers, parents and the community. Principals/ teachers need to constantly work towards improving their school climate, culture and conditions so that student learning is improved.

A positive learning environment not only consists of the physical setting, but it also encompasses the social and emotional environment as well. Educators should see and understand how the child feels or responds in both environments. There are a number of ways educators can create an environment for children that are conducive to learning. The following are some aspects you could look into while considering making conducive environment in terms of physical, social/emotional and academic environment respectively.

a) Physical environment:

Children need to feel that there is orderliness in their environment so that they can learn. An unorganised room can be distracting and an impediment to learning. Furniture should be arranged in such a way that there is little traffic throughout the day and so that it appears organised.

Classroom should ensure comfort. This includes the temperature of the room, comfortable furniture and aesthetic appeal. The rooms should not be too hot or too cold; the lights should be appropriately lit and decorated with items that appeal to the children to help promote a positive learning experience.

Ensuring the health and safety arrangement should be a basic concern for those creating a learning environment for children. This means the childproofing of rooms, removal of health hazards and environmental allergens as much as possible. Children who do not feel safe have more difficulty learning. Bullying should not be tolerated; children should feel safe and valued at all times.

Children should be encouraged to take part in the creation of their environment. This includes having their artwork or accomplishments posted on walls. This will help make their environment welcoming, comfortable and also homely.

b) Social/Emotional Environment:

Major factors that contribute to social/emotional environment could be categorised into major areas such as inclusion and equality: In this case, educators need to take action to remove the barriers to participation and learning, eliminate discrimination and promote equality. Similarly positive relationships and behaviour contributes in creating a good social and emotional environment. It is very important to provide support, positive reinforcement and give appropriate feedback to students in order to make and maintain a good relationship. This encourages children to learn, through make mistakes and accomplish new things.

It is also equally important to discipline when necessary. This can be established by having prescribed rules for conduct during learning and playtime activities. These rules should also outline consequences.

c) Academic environment:

Teacher preparedness in planning teaching and learning and delivering lessons plays a very important role in creating a positive learning environment. In order to take good lesson teachers should prepare well. Students respond to teachers who are confident, knowledgeable, and who prepare interesting lessons and use humour in teaching. They should also be highly knowledgeable and up to date in their subject area. Effective teachers plan carefully, make the intended purpose and content explicit, make connection, and get students mentally engaged. Such teachers also motivate students and encourage students to think through appropriate feedback

Strategies for creating a positive learning environment:

Laying ground rules

Teachers need to establish ground rules of behavior as early as possible and keep them consistent to avoid classroom management issues.

Dictatorial attitude for setting rules should not be adopted by a teacher. It should be based on mutual agreements, discussions, reflection of student's opinion and negotiation. By involving students in rulemaking teachers will achieve full acceptance of rules such as careful listening, desisting from interrupting others, punctuality, and respect for fellow students

Motivation

By nature, very few students are keen on their learning. Most of the students need motivation and inspiration from their teachers to encourage them to learn. Teacher's ability in motivating the students is an important factor in the teaching and learning process.

Some common strategies that stimulate student's motivation and ensure students' success by assigning tasks that are neither too easy nor too difficult include:

- Helping the students find personal meaning and value in the material.
- Creating an atmosphere that is open and positive.
- Helping the students feel that they are valued members of a learning community.

Set high but realistic expectation for your students:

This means that the standards set by the teachers are high enough to motivate students to do their best but at the same time not so high to de-motivate and frustrated the students from achieving their tasks.

Help students set, achievable goals for them.

Unrealistic goals can frustrate and disappoint students. Teachers should focus on their continued improvement; the aim should not just be achieving a higher grade. Teachers should also help the students to evaluate critique and analyze their work and learn through their strengths and weaknesses.

Tell students what they need to do to succeed.

Don't let your students struggle to figure out what is expected of them. Reassure students that they can do well in your course, and tell them exactly what they must do to succeed.

Avoid competition among students

Competition produces anxiety, which can interfere with learning. Reduce students' tendencies to compare themselves to one another.

Praise

Praise is an important means of motivating students. It improves students' self-esteem, self-reliance and autonomy. Praise is often used with very young children as a way of managing individuals and groups. However teachers should be careful when praising.

Let's reflect

- Which areas of the above do you recognise in your current school/classroom practice?
- Are there any areas that you would consider adopting to enhance the learning environment in your school/classroom?

CONNECTING PRIOR LEARNING TO NEW LEARNING

Available literature suggests that Learners construct meaning out of their prior understanding. Any new learning must, in some fashion, connect with what learners already know! Learners construct their sense of the world by applying their old understanding to new experiences and ideas."Schulman, L. 1999, "Taking learning seriously", Change, vol. 31, no. 4,

In addition, according to Bransford and Cocking, R (1999), "Effective teaching supports positive transfer by actively identifying the relevant knowledge and strengths that students bring to a learning situation and building on them."

Bransford, J., Brown, A. & Cocking, R. 1999, How People Learn: Brain, Mind, Experience, and School, National Academy Press, Washington, DC, p. 66.

Students learn continuously from what they sense and experience from their environment. Prior knowledge can be explained as combination of the students' pre-existing experiences, knowledge, attitudes and values.

Attitudes

Teachers need to understand students' beliefs about themselves, as learners or readers, and get acquainted with the individual interests and strengths. At the same time teachers need to find out the motivation level of students.

Experiences

Students are shaped and influenced by a lot of experiences from everyday activities they encounter in their day to day life. Teachers need to seek and give opportunities for the students to link with these experiences that they bring to school from their life.

Knowledge

Each student comes to school with varying degrees of knowledge. The knowledge students may have could be related to a particular content, topic or the concepts. The reading process itself could be very different among the students in the same class. Each student's academic and personal goals would differ. Hence teachers need to find out this from their students.

When prior learning is connected to new learning it:

- creates a platform to accommodate new knowledge, skills and attitudes
- activates students' interest and curiosity
- helps and create opportunity for in-depth learning
- helps to create positive beliefs about themselves as learners
- motivates and builds desire to learn
- provides opportunities to build a broad base of knowledge by providing access to a wide variety of materials

- help students recall what they might already know about a topic

What strategies or instructional approaches can help students make connections?

- Graphic Organizers or Mind Maps: instructional tools used to illustrate prior knowledge.

- KWL Charts: An effective pre-assessment tool but also an effective tool to evaluate the level of understanding

- Questioning Techniques: Questions are a key element in each of the building blocks of constructivism. Categories of questions are guiding, anticipated, clarifying and integrating.

- Reflective Journals or Learning Logs: Journals can be used to assess the process of learning and student growth. They can be open-ended or the teacher can provide guiding, reflective questions for the students to respond to. These often provide insights on how the students are synthesizing their learning.

- Background knowledge probe: This is a short, simple questionnaire used at the start of a new unit or a lesson. Teachers need to consider what students may already know about a new concept, subject, or topic.

- Minute paper: In this technique teacher asks students to submit comments related to given questions.

- Annotated drawings: In this students are asked to draw their ideas for a concept or a question, the drawing provides an insight into the thought processes of the students. Through the use of the drawings, teachers could discuss students' ideas with the teachers and each other.

- Blogs: Here, students choose their own blog to record their learning on a specific topic. A group of learners could choose to share a blog and read, write, challenge, debate, validate and build shared knowledge as a group.

Linking prior learning to new learning

After examining prior knowledge, it is important to identify how to relate prior knowledge to new knowledge. The following are some of the issues to consider when connecting new knowledge to old.

- Choose real world or daily experiences as examples to illustrate key ideas and problems, this will allow students to relate new ideas to their everyday lives.

- Choose examples to cater to the diversity of students' background. Ask students to provide examples they think can illustrate or apply to new ideas.

- Employ group activities that encourage students to share their prior knowledge and experience.

- Provide opportunities to reflect on their own learning, how their learning is connected to what they already know.

- Use tasks and problems specifically designed to build on prior experiences, knowledge and skills.

Let's reflect

- What kind of a background the students are from?

- Do you address students' background knowledge?

- Will the students share similar background or is there likely to be significant diversity?

- Do you connect prior knowledge when planning lessons?

MAKING LEARNING MEANINGFUL

This dimension is about making connections, linking concepts (skills and experiences) and building new concepts. The experiences should engage students in relevant, contextualized and authentic tasks. These experiences should be used as instructional platforms to help them move from what they know to what they do not know.

Why this is important?

Making learning meaningful for students is important as it gives them an opportunity to obtain a deeper and broader knowledge of the subjects they are studying.   In addition to this, when learning becomes meaningful, it

- Promotes higher order thinking and problem solving skills,
- Promotes student engagement and involvement,
- Relates what student is learning to real world problems and their lives,
- Promotes authentic methods of assessment.

The dimension includes:

- Contextualizing learning
- Making learning Relevant
- Engaging students

Contextualized Learning

Contextualized Teaching and Learning (CTL) involves relating the subject matter to real world situations. It motivates students to make connections between knowledge and their usefulness in their lives as a member in society or at work.

This provides opportunities to address the individual needs of the learners and each individual student makes his or her own meaning.

Relevance

Relevance refers to learning in which students engage deeply, in applying knowledge, concepts and skills while solving real world problems. When exposed to relevant learning experiences students are able see the connection between what they learn and its applications to their lives. Here, learning in different disciplines of knowledge is treated as interrelated; hence students make connections between and across disciplines.

Engage

Engage refers to learning in which students get mentally involved. Here, the teacher needs to change

how content is delivered: from a didactic manner to an increase interaction (Mentkowski, 2000; Ramsden, 1992). The interaction with teachers and students should become a meaningful dialogue. Such kind of quality interaction is likely to lead to effective and meaningful learning.

■ What does engaged learning look like?

Students are self-regulated, they enjoy learning and they have a passion for solving problems. They are able to transfer their knowledge to solve problems creatively. They also do a lot of team work and are able to define their learning goals and evaluate their own achievement.

Tasks for engaged learning

They need to be challenging, authentic and multidisciplinary. They are authentic when it relates to the work at home, workplaces of today and tomorrow. Collaboration takes place among peers and mentors within school as well as family members and people outside of school. These tasks often involve problem based learning through projects.

Strategies that can be used in making learning meaningful

Present new concepts in real-life (outside the classroom) situations and experiences that are familiar to the student:

- Give examples in student exercises to include real, problem-solving situations that students can recognise as being important to their current or future lives.

- Give opportunities for students to gather, analyze their own data and guide in discovery of the important concepts.

- Provide opportunities for students to gather, analyze and present their own data for enrichment and extension.

- Provide opportunities for students to apply concepts and information in useful contexts, projecting the student into imagined futures (e.g., possible careers) and unfamiliar locations (e.g., workplaces).

- Encourage and expect students to participate regularly in interactive groups where sharing, communicating, and responding to the important concepts and decision-making occur.

Let's reflect!

- Do we as teachers try to articulate students thinking related to the task?

- Do we make students' knowledge explicit?

- Do we attempt to uncovers learners' understanding and misconceptions and help them to refine their conceptual understanding?

- Do we give opportunities to verbalize their problem solving and reasoning?

- Do we give them opportunities to reflect on their own learning?

- Do we allow the learners to reflect and diagnose their own difficulties and seek out help if necessary?

- Do we give them opportunities for exploration by encouraging students to become independent learners who set their own learning goals, explore areas of their interests which may even lead to new discoveries?

FOSTERING REFLECTIVE PRACTICE

'Fostering reflective practice', refers to developing and inculcating among the students' awareness of their own learning and thinking before, during and after key learning experiences. This process enables students to realize what they know, what they need to know and what needs to be done.

The main aspect that this dimension involves is metacognition. Metacognition is simply defined as "thinking about thinking". It could also be referred to as the ability to control one's cognitive processes (self-regulation).

This dimension stresses on focusing on nurturing students' thinking skills which would substantially affect the subsequent development of reflective thinking. Reflective thinking is considered as part of the critical thinking process referring specifically to the processes of analyzing and making judgments about what has happened. Dewey (1933) suggests that reflective thinking is an active, persistent, and careful consideration of a belief or supposed form of knowledge, of the grounds that support that knowledge, and further conclusions to which that knowledge leads. Learners are aware of and control their learning by actively participating in reflective thinking – assessing what they know, what they need to know, and how they bridge that gap – during learning situations.

These skills are considered to be transferable skills important for lifelong learning and work.

Benefits of Reflective Learning for Students

Reflection strengthens and encourages learning and allows learners to recognise their achievements or strengths and areas that need improvement. Reflection makes it possible for the learners to actively engage in authentic experiences and discover on their own, what real learning is. Consequently students would develop skills and attitudes in the process instead of just remaining to be passive receivers receiving information from the transmitting teachers.

Moreover, reflection deepens personal understanding and stimulates critical thinking. Reflection is equally useful when students' effort have been unsuccessful – in such cases indeed, reflection can often give them insights into what may have gone wrong with their learning, identify inconsistencies in their thinking, and help them to avoid repeating the same mistakes in future. In such cases, students develop a range of skills such as interpreting, analyzing, evaluating, inferring, explaining and self-monitoring and become active players in constructing knowledge.

Reflective practices can be fostered in **two** levels.

Reflection in Action

Reflection in Action is reflecting while doing or carrying out a task/project.

The following reflective questions could be used in this level.

- What features do I notice when I recognise this thing?

- What are the criteria by which I make this judgement?

- What procedures am I following when I perform this skill?

- How am I framing the problem that I am trying to solve?

Reflection on Action

Here the focus is on reflecting on the task, after the action or after carrying out the task/project. The following reflective exercise could be used in this level.

- How did I work on the project/activity?

- What did I learn?

- What were my strengths?

- If I do the same thing again, what would I change to make it better?

Strategies that can be used in fostering reflective practice among students:

Use of thinking tools:

In order to foster reflective practice it is important to identify ways to support thinking among the

students. Students could develop their thinking through the use of thinking tools such as mind maps, concept maps and graphic organizers.

Using thinking tools allows students to reflect on the relationship between concepts/ideas.

Use of learning logs, blogs

Learning logs and blogs can help students to continuously reflect on their learning.

Learning log is a personal record of students own learning which focuses on the student's experiences, thoughts, feelings and reflections. It helps the students to record, plan, develop, think, reflect and give evidence of their own learning.

The following are some points that could be used to when writing learning logs:

- What did I do?

- How do I think/feel about this?

- How well did it go?

- What did I learn?

- What will I do differently next time?

- How will I do it differently next time?

- What have I achieved?

- What have I learnt about myself?

- How have I put any theory into practice?

Use of problem based/project based learning

When students are given opportunities to explore real-world problems and challenges, in a project:

- It gives them a specific purpose and hence becomes unique.

- Their work is based on research.

- The work is time bound and needs to be completed within the stipulated time. When it is done in this manner students develop thinking skills and reflect on their work and adjusts

them as they go along.

Using SWOT analysis to support different ways of thinking and learning

The SWOT analysis provides a basis for decision-making and problem solving. Students may therefore find the analysis helpful in tackling problems and issues they come across.

Allowing for flexible learning

It is important to provide students the opportunity to work in pairs, small groups (threes or fours) and in large groups (six/seven students) depending on the nature of the work. During these activities students can be asked to reflect on the task and demonstrate how members can contribute to the task. For instance, when students are working on group tasks, they could be asked to identify

- What they thought helped in their discussion?
- What challenges or problems they faced?
- How they overcame the challenge?

The students can be asked to write a short evaluation of their contribution and in addition, an observer within the group can evaluate the group.

Developing self and peer assessment skills

Self and peer assessment involve students thinking about their own learning using a set of standards or criteria to apply to their task and making judgments about the extent to which they have met these criteria or standards. In such a case, the students need to understand the set of criteria or standards used and make judgments. The process therefore involves learning, understanding and reflecting on their learning.

Let's reflect!

- Do you provide opportunity to your students to reflect on their learning?
- Do you relate new learning to prior learning? Do students look for connections to what they already know?
- Do you encourage students to reflect on what they learn by looking for connections to everyday life?
- Do you help your students to identify their preferred learning styles?
- Do you provide opportunity for self and peer assessment?
- Do you provide a guideline such as criteria or rubrics for self and peer assessment?
- Do you promote guided dialogue to foster active learning?
- Do you encourage students to keep a portfolio or a reflective journal for them to reflect on their learning?
- Do you have a reflective learning blog for your students?

CATERING TO INDIVIDUAL DIFFERENCES

Catering to individual differences refers to varying and adapting instructional approaches (including, content, process, product and the learning environment) in relation to individual and diverse student needs.

In order to cater for such individual differences, differentiated teaching and learning approach could be used.

Differentiation refers to teaching things differently according to the observed differences among learners (Westwood, 2001, p 5). In other words it means personalizing instruction to meet the needs of the children, taking into account students' ability level, aptitude, learning preferences and interest.

Differentiated instruction provides access to students to the same classroom curriculum by providing entry points, learning tasks and outcomes that are tailored to student's needs (Hall, Strangman & Meyer, 2003 cited in Access Centre, 2004)

Differentiated instruction helps teachers to identify ways of teaching students with different learning styles, various skills and levels.

The benefits of teaching to individual differences are immense. Some of the benefits are:

- It provides students with multiple opportunities and options to take in information and process them.
- It maximizes each student's growth and individual success by meeting each student where s/he is and assisting in the learning process.
- It promotes deep understanding, develop concepts and practice skills.
- It promotes students motivation and hence learning becomes more meaningful for them.

Differentiated programming is;

- Having high expectations for all students
- Allowing students to demonstrate mastery of the material they already know and to progress at their own pace through the new material
- Providing different ways to acquire content, process and developing products
- Providing multiple assignments within each unit, tailoring for students with different levels of
- achievement
- Allowing students to choose with the teacher's guidance, ways of learning and ways of demonstrating what they have learned
- Provides flexibility for teachers to move students in and out of groups, based on students' instructional needs.

Differentiated programming is not:

- Individualized instruction – it is not a different lesson plan for each students each day.

- Assigning more work at the same level to high- achieving students all the time- often it is important for students to work as a whole class.

- Using only the differences in student responses to the same class.

- Giving a normal assignment to most students and a different one to advanced learners

- Limited to subject acceleration- teachers are encouraged to use a variety of strategies.

*Tomlinson, C.A.& Allan, S.D.(2000). **Leadership for differentiating schools and classrooms.** Alexandria, VA:*

Strategies that could be used in catering for individual differences

Graduate Tasks
▪ Easy to Hard ▪ Use " Bloom's Taxonomy" ▪ Mastery and Developmental tasks

Set Open Tasks
Expect more from able students

Set Different Tasks
▪ Ability groups ▪ Use of help sheets and writing frames

Differentiate Time
• Resource Based Learning • Independent Learning • Mastery Learning

Differentiate Resources
▪ Use of texts of different depth, breadth, and difficulty

Differentiate by task; outcome, and time allowed

Integrate Learning Support to your classroom

Accommodate Learning Styles
▪ Visual, aural and kinesthetic ▪ Right and Left brain

Use group work so that peers can support each other

Accommodate diffrent perferences and suport-need

"Buddy up" students who can help each other

Develop Generic Skills by
▪ Feedback proformas ▪ Teaching skills with both process and product

Set individualized goals and targets based on assessment of students, and through the use of one to one action

Use effective feedback
▪ 'medal and mission' feedback

The following are some aspects to consider with differentiating learning:

- Adapting the content
- Accommodating for different preferences and support-needs
- Varying feedback

Adapting the content

Content refers to the knowledge, skills and attitudes that students need to acquire at a particular level or key stage. It is essential that students have access to the essential core of the curriculum instead of focusing on tiny details and facts; teachers have to look into broader concepts and ideas when planning for lessons. While the concept to be taught remains the same, the degree of complexity should be adjusted to suit the level of various learners.

It is important to note that the focus has to be on how to gain access to the content using a variety of different ways.

Graduate Tasks:

The following are some ways that teachers could consider when graduating tasks to meet various learning needs:

Moving from easy to hard:

For effective understanding it is crucial that teachers plan learning from simple tasks and move on to more complex tasks.

Using Bloom's Taxonomy:

It is important to use the different levels of bloom's taxonomy in designing tasks. Three areas of Bloom's taxonomy need to be looked into:

- Cognitive: mental skills (Knowledge)
- Affective: growth in feelings or emotional areas (Attitude)
- Psychomotor: manual or physical skills (Skills)

Teachers need to consider how to use the various levels in designing tasks.

Mix of mastery and Developmental Tasks

A mix of developmental and mastery tasks ensures that weak students as well as more able students are catered to.

Mastery tasks refer to tasks that all learners can master in a short period of time regardless of their prior learning.

Mastery tasks help to build the self-esteem, confidence, and motivation of weak students.

Developmental tasks refer to tasks that develop the knowledge, skills and values required for academic success as well as the world of work. These tasks develop the skills required for progression to the next educational level. They also create deep learning that is real and understanding.

Setting different tasks through tiering

Tiered assignments are designed to instruct students on essential skills that are provided at different

levels of complexity, abstractness, and open-endedness. The curricular content and objective(s) are the same, but the process and or product are varied according to the student's level of readiness. Thus, students proceed with different levels of support and challenge.

Accommodating for different preferences and support-needs

Teachers need to understand that every student has their preferred learning style and thus successful learning happens when instruction is modified to take into account the various learning styles.

Let's reflect!
• What are some of the ways that are used to get to know children? • What strategies are used to cater for individual differences? • How well are the tasks designed to meet various needs of children? • How effective are the feedback given to students? • What considerations are in place to ensure that assessment techniques are proper for students with various learning needs?

Classroom Assessment

ASSESSMENT

Educational assessment is the process of documenting, usually in measurable terms, knowledge, skills, attitudes and beliefs and interpreting the gathered information to determine mastery towards the defined learning outcomes or standards.

Assessing learners can be a very meaningful activity for both the teacher and the learner. For the teacher, it gives an indication of how well s/he has taught and for the learner how well they have learnt. Thus assessment serves as a road map allowing the teachers and the students to plan learning towards an achievement. It is through assessment that teachers become more organized and responsive observers of learning.

In addition, it is important to note that teachers should be in a position to redesign classroom instruction if needed, become aware of how students learn, and also relate with how students respond to particular teaching approaches.

The purpose of classroom assessment is to empower both teachers and their students to improve the quality of learning in the classroom.

WHY ASSESS?

In general, assessment serves a range of purposes. This includes:

Diagnostic: to identify what a student achieves, understands or demonstrates

Instructional: to identify what needs to be taught next or re-taught

Reporting: to gather data for the purpose of reporting on a student's achievement to the student and parents and other concerned parties (for student employment, further education or training)

The assessment policy identifies the following as the main purposes of assessment (National Assessment Policy Draft 2007, 1):

Provides information to students on which learning outcomes from the syllabus they have mastered and which they have not mastered.	Diagnostic
Provides information to teachers about the teaching and learning taking place in the classroom.	Instructional
Provides information to parents about how their children are progressing and the best ways in which they can assist them. Provides information to the Ministry of Education to set targets for the individual schools and measure standards of education over time against different factors-National Assessment of Student Achievement Levels (NASAL) Provides information for selection purposes (e.g., higher education), and for international recognition of educational standards at the end of the compulsory education.	Reporting

In the classroom setting assessment should serve the purpose of assisting learning. Assessment should be used as a tool to support learning rather than an end in itself.

THE INTERRELATIONSHIP OF TEACHING, LEARNING AND ASSESSMENT

Vision of the curriculum

- Successful individual
- Confident and Competent
- Responsible and Contributing

Assessment

- Ongoing to support learning
- Measures across all dimensions
- Addresses the learning strategies, processes and the learning outcomes (criterion based)
- Learners reflect on their own learning
- Various tasks with clear success criteria, focusing on application on knowledge
- Related to real world (authentic tasks)

Pedagogy

- Learning based in a positive atmosphere which assists students to excel
- Learning based on prior knowledge and students seen as active learners who construct knowledge out of personal experience
- Opportunities for reflective practice ensuring student become self-regulated learners.
- Personalized and caters to the needs of all learners
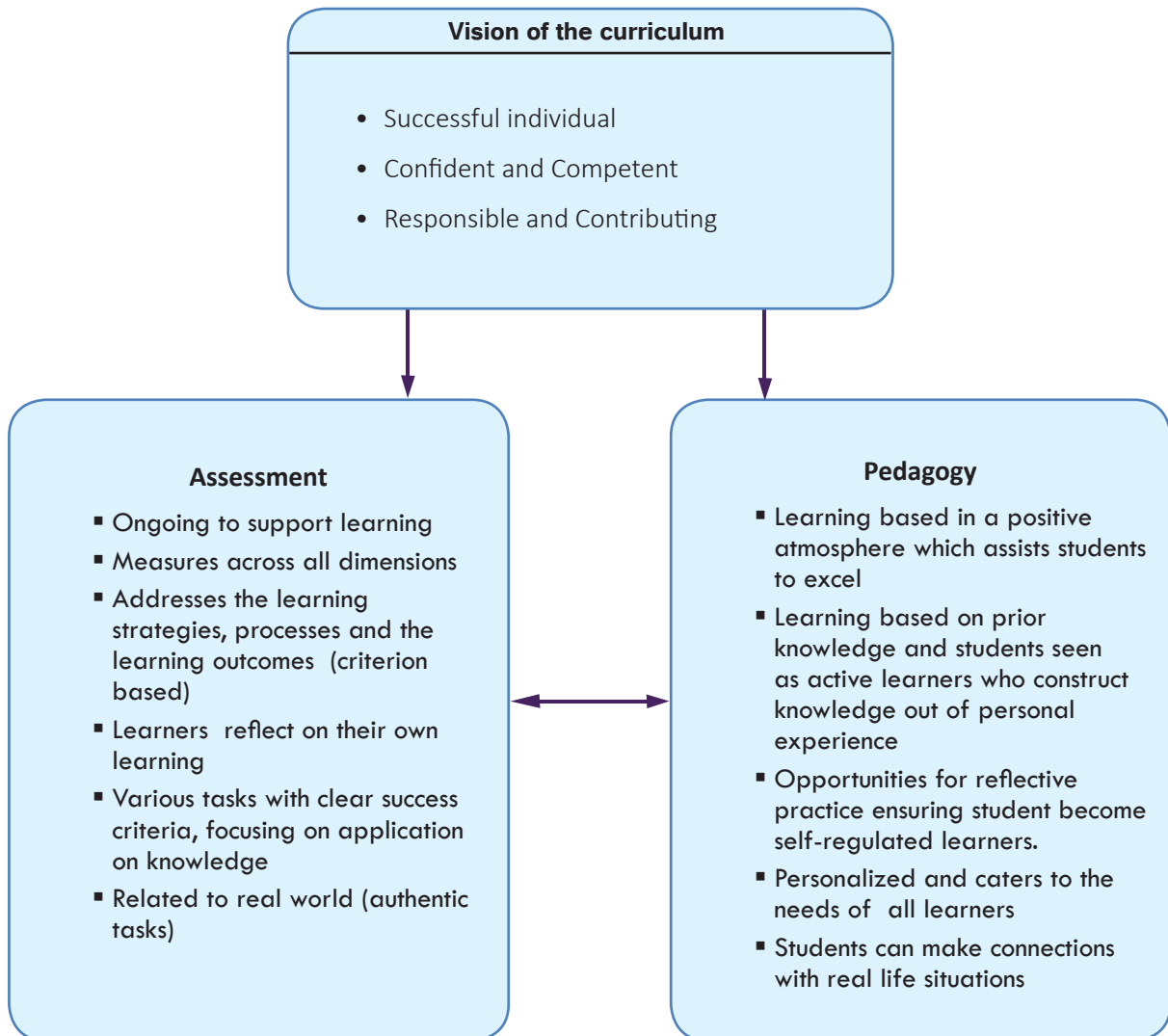- Students can make connections with real life situations

Figure 01: The interrelationship between curriculum, teaching/learning and assessment

As the figure above shows to achieve the vision identified in the NCF, the teaching and learning approaches need to change which should also change the assessment approaches. Thus, assessment should refer to various aspects that are emphasized in the teaching learning process.

WHAT IS OUR FOCUS?

Schools should use both the approaches of assessment, that is, *assessment for learning (AfL)* and *assessment of learning (AofL).*

In the current system, teachers often notice that students have not learned as much or as well as expected of them and there are gaps between what was taught and what has been learnt. In addition, written tests are usually the only method through which schools assess students. This calls for the need to focus on assessment for learning. Assessment for learning can reduce this gap.

Assessment for learning: Assessment for learning is generally formative in nature and is used by teachers to consider approaches to teaching and plan next steps for individual learners and the class.

Assessment of learning: Assessment of learning is generally summative in nature and intended to measure learning outcomes and reports those outcomes to students, parents and administrators.

For both of these approaches teachers are to use criterion referencing. Set of standards and outcomes are identified in the National Curriculum for each subject. These standards or outcomes should be reflected in the developed tasks for assessment purpose. In addition when offering assistance to students, teachers need to be clear of what the ultimate goals are or the outcomes of the learning.

However, where necessary teachers can use norm referenced measurement. For example when deciding reading comprehension or elements of a subject, norm referencing can be used.

> **Criterion Referenced Measurement:**
>
> A criterion referenced measure is used to ascertain an individual's status in a defined assessment domain (Popham, 2002, p.85)
>
> **Norm-Referenced Measurement:**
>
> A norm- referenced measure is used to ascertain an individual's status compared with the performance of other individuals on that measure (Popham, 2002, p.86)
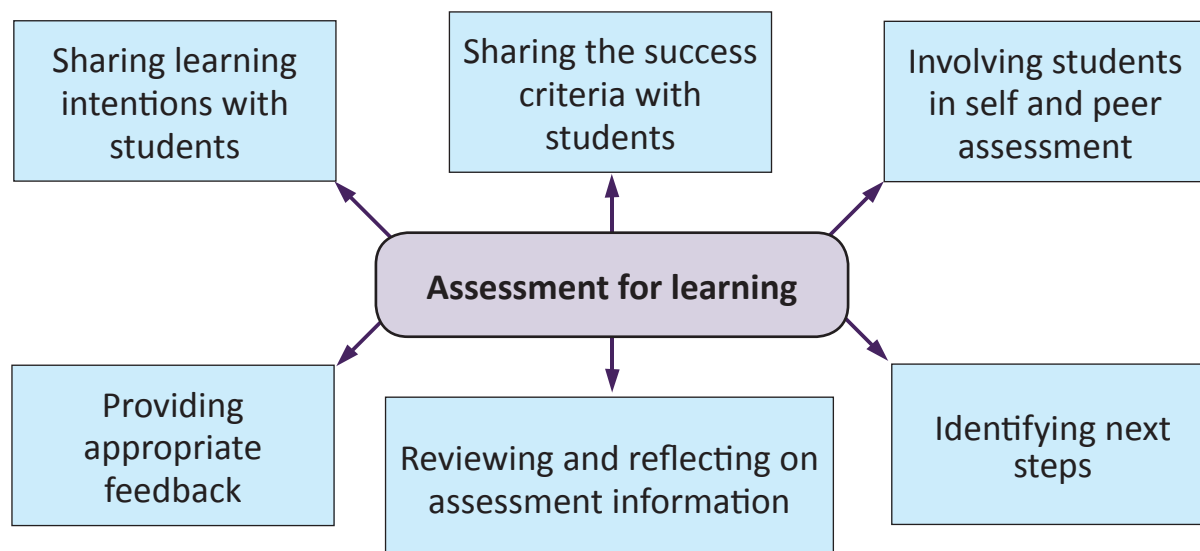
Focusing on Assessment for Learning

In broad terms, assessment for learning includes teacher observation, classroom discussion, analysis of student work, and also reflection on student tests. Information gathered from formative assessment is used to adapt teaching and learning to meet student needs, such as re- teaching, trying alternative instructional approaches, or providing more opportunities for practice. Such measures ensure that student learning improves.

> Firm evidence shows that formative assessment is an essential component of classroom work and that its development can raise standards of achievement (Black & William, 1998)

Let's reflect!
❖ How much do we change our instructional practices to meet the needs of the students?   ❖ What are some of the challenges that teachers face in changing instructional practices?   ❖ How can schools overcome these challenges?

KEY CHARACTERISTICS OF ASSESSMENT FOR LEARNING

Sharing learning intentions with students

Sharing the success criteria with students

Involving students in self and peer assessment

Assessment for learning

Providing appropriate feedback

Reviewing and reflecting on assessment information

Identifying next steps

Sharing Learning Intentions

Learning intentions are referred to as what students need to know, understand or be able to do by the end of a lesson or series of lessons.

Learning intention focuses on learning rather than doing.

- Share the learning intentions at the beginning of the session and if necessary during the lesson. Some teachers prefer to write it down on one side of the board.

- Use simple language to convey the learning intentions.

- Use the learning intentions to guide assessment, questioning and feedback.

- Irrespective of the type of assessment, the assessment task should be in line with the objectives or outcomes.

Some of the benefits of sharing learning intentions are that:

- Students can focus on the purpose of the activity

- Students know where to concentrate their efforts

- Students take ownership for their own learning

- Students are clear on what is expected and hence plan learning accordingly

> Some teachers refer learning intentions as learning objectives. However, learning intentions are used to place greater emphasis on the process of learning.

The following shows different dimensions through which learning intentions can be derived:

Learning intentions that focus on knowledge & understanding

Learning intention should be designed by identifying what specific kind of knowledge or understanding is required for a particular situation. Studying bloom's taxonomy and relating learning outcomes to various levels of the taxonomy can assist in developing students understanding of the topic.

Teachers may identify:

- Knowledge and understanding related to a particular topic (e.g. understanding various energy sources)

- Knowledge and understanding on the causes of events (e.g. explaining how tides occur)

- Knowledge and understanding on how something is done and how something happens (e.g. demonstrating recycling of paper to make a useful product)

Learning intention should also focus on including aspects (knowledge, skills and values) in the relevant key competencies identified in the NCF)

Learning intentions that focus on skills

Learning intentions should also focus on skills. These could be general as well as subject specific skills.

For example,

- to be able to measure distance using a ruler

- to be able to investigate simple models for the flow of electricity in a circuit

- to be able to work as part of a team

- to be able to debate on a given issue, providing arguments

Learning intentions that focus on values

Usually learning intentions that are related to values are left due to the fact that these are generally difficult to measure. However, it is important that learning intentions related to values are incorporated to the lessons.
- to appreciate the beauty of natural things around us
- to identify the different ways we could reduce the resources used

In addition to the above, when focusing on lesson objectives or outcomes, consideration should be given to incorporate the knowledge, skills and values of the key competencies identified in the National Curriculum *(Adapted from, Assessment for learning, http://www.assessmentforlearning.edu.au).*

Sharing the success criteria with students

Every task designed for the students should be accompanied with a success criterion. Students should be aware of what constituents as 'good work' or 'average work'. In other words, students should know what exemplary work is. It is important to share the success criteria with the students. Ensure that it is clear to the students. In addition, students should be able to see the relationship between the success criteria and the learning objectives.

Success criteria need to

- be written in simple language that is easy for students to understand

- be limited in number so that students are not overwhelmed by the scope of the task

- focus on the learning and not on other aspects (e.g., paying attention, contributing, meeting deadlines etc.)

- be supported, where necessary, by exemplars or work samples which make their meaning clear.

- be developed with input from students so that they have greater understanding and ownership.

Let's reflect!

- How often do we provide success criteria to students?

- How effective are the success criteria?

- Consider the following

  ✓ Is it easy to follow?

  ✓ Are adequate amount of examples provided?

  ✓ What aspects does it cover (knowledge, skills and values)?

  ✓ Can students see a link between criteria and the learning outcomes or objectives?

  ✓ Does the learning task provide the opportunity for students to demonstrate all of the success criteria?

Involving students in self and peer assessment

Self and peer assessment allows students to reflect on their learning, identifying their strengths and areas of improvement. This allows students to take ownership of their learning. Students who can engage in metacognitive thinking are involved in their own learning.

Peer feedback occurs when students offer each other advice about their work which incorporates reference to:

- what has been done well in relation to the success criteria
- what still needs to be done in order to achieve the success criteria
- identifying ways to improve

Peer assessment is most effective when:

- Students are comfortable with each other
- Students are supported by their peers
- Students respect each other's opinions
- Students feel free to take risks and make mistakes

To create an effective environment for self and peer-assessment, teachers need to create an atmosphere where students feel comfortable to share ideas and thoughts. in to the habit of giving and receiving feedback, teachers have to explicitly teach (through models) how to provide feedback. When giving feedback, consideration has to be given to various learning styles of the students. In addition, to get students

Providing Effective Feedback

Classroom assessment is an attempt to build on existing good practice by making feedback on students' learning more systematic, more flexible and more effective. Teachers already ask questions, react to students' questions, monitor body language and facial expressions, read homework and tests, and so on. However, unless and until these are used systematically for student progress they are of limited use for both the students and the teacher.

Classroom assessment provides a way to integrate assessment systematically and seamlessly into the traditional classroom teaching and learning process.

> Students need to receive feedback early and often; they need to evaluate the quality of their own learning, and that they can also help the teacher improve the strength of instruction

Characteristics of feedback

Constructive feedback has the following distinguishing characteristics:

- *Relevant:* Addresses student specific achievements, needs and interests as well as specific learning behaviours.

- *Immediate:* Provided as soon as information about student performance is available

- *Factual*: Based on actual student achievement

- *Helpful*: Provides suggestions for improvement of learning

- *Confidential*: Given directly to students without intermediary

- *Respectful*: Respects students integrity and needs

- *Tailored:* designed to meet individual student specific needs and circumstances

- *Encouraging:* Motivates student to continue to increase learning efforts

- (Adapted from: Ovanda, M (n.d))

Ways to get feedback

Identified below are some ways teachers could use to get feedback from the students.

Minute paper

Students notes down the most important point that they have studied during the class session and also notes down the idea/concept that is least clear to the students. The purpose of this activity is to check students' comprehension level.

The teacher should review the responses and emphasis on the issues that students' have identified.

Chain Notes

Students pass around an envelope on which the teacher has written one question about the class. When the envelope reaches a student he/she spends a moment to respond to the question and then places the response in the envelope.

The teacher should go through the student responses and determine the best criteria for categorizing the data with the goal of detecting response patterns. Discussing the patterns of responses with students can lead to better teaching and learning.

Directed paraphrasing

Ask students to write a layman's "translation" of something they have just learned -- geared to a specified individual or audience -- to assess their ability to comprehend and transfer concepts.

Categorize student responses according to characteristics you feel are important. Analyze the responses both within and across categories, noting ways you could address student needs

One sentence summary

Students summarize knowledge of a topic by constructing a single sentence that answers the questions "Who does what to whom, when, where, how, and why?" The purpose is to require students to select only the defining features of an idea.

Evaluate the quality of each summary quickly and holistically. Note whether students have identified the essential concepts of the class topic and their interrelationships. Share your observations with your students.

Exam evaluations

Select a type of test that you are likely to give more than once or one that has a significant impact on student performance. Create a few questions that evaluate the quality of the test. Add these questions to the exam or administer a separate, follow-up evaluation.

Try to distinguish student comments that address the fairness of your grading from those that address the fairness of the test as an assessment instrument. Respond to the general ideas represented by student comments.

Application cards

After teaching about an important theory, principle, or procedure, ask students to write down at least one real-world application for what they have just learned to determine how well they can transfer their learning.

Quickly read once through the applications and categorize them according to their quality. Pick out a broad range of examples and present them to the class.

Student Generated Test Questions

Allow students to write test questions and model answers for specified topics, in a format consistent with course exams. This will give students the opportunity to evaluate the course topics, reflect on what they understand, and what good test items are.

Make a rough tally of the questions your students propose and the topics that they cover. Evaluate the questions and use the goods ones as prompts for discussion. You may also want to revise the questions and use them on the upcoming exam.

Some Strategies for self and peer feedback

Two stars and a wish

<u>Two stars:</u> Students identify two positive aspects of the work

<u>Wish</u>: Students identify an area or an issue for improvement which is expressed as a wish.

In the classroom, teachers have to model this strategy until the students are familiar with it. Classroom demonstrations using student work can help implement this strategy successfully in the school.

Plus, minus and what's next?

<u>Plus</u>: Students identify a positive aspect (something that is done well).

<u>Minus</u>: Students identify an area for improvement.

<u>What is next?</u> The students can then set new personal learning targets.

Warm and cool feedback

<u>A warm feedback:</u> When students identify a positive aspect of the work.

<u>A cool feedback:</u> When students identify an area of improvement.

<u>'How to raise the temperature":</u> When students give advice about how their peer could improve their work.

Traffic lights

<u>Green light</u>: Students can use a green highlighter and identify areas that meet with the given success criteria

<u>Amber light</u>: Students can use amber light to show areas that needs improvement.

This strategy is often used for work –in progress.

Using models or exemplars

Offering exemplars can assist students in self assessment especially in identifying changes that need to be made to their work to meet the success criteria. Models and exemplars help them to realize good or excellent work and how it can be used well than by providing only a written criterion. In order to ensure that students have the opportunity to be flexible and creative, teachers could provide exemplars of part of the product rather than displaying the full product.

Using rubrics

Rubrics are helpful in self and peer assessment. Usually rubrics show the difference between levels of performance. This means that teachers need to demonstrate explicit teaching so that the students can see the difference between the various levels of performance.

Rubrics should be negotiated with students and should be written in a language which is easy to follow. With practice, students will be able to give useful feedback using rubrics.

COLOUR WHEEL

Title: Color Wheel	Grade: 2	Visual Arts	Time 40 Minutes
Lesson Overview / Task: Students create their own color wheel using primary colors to create secondary colors.			
Strand & Indicator: Creative Production –Demonstrates how mixing primary colors makes secondary colors.			
Rubric based on the Visual Arts outcome/ indicators :			
Advanced	**Proficient**	**Partially Proficient**	**Novice**
Demonstrates how mixing primary colors makes secondary colors with accuracy.	Demonstrates how mixing primary colors makes secondary colors with no significant errors.	Demonstrates how mixing primary colors makes secondary colors with few significant errors.	Demonstrates how mixing primary colors makes secondary colors with many significant errors.

De Bono's Thinking Hats

Although De Bono's thinking hats are usually used to encourage students to think from different perspectives, they can also be used to provide peer feedback. With practice, De Bono's Thinking hats can be very effective with young students as it make feedback more focused.

For instance, the Yellow hat can be used to identify good aspects of the work. The Black hat can be used to identify the weaknesses and the Green hat encourages creative thinking; Teacher need to identify ways where by the work could be done in a different way.

In all of the feedback strategies mentioned, students look into three aspects in general. They are:

- Identifying the positive aspects, thus reinforcing the positive aspects
- Identifying areas that needs further improvement or areas of weakness
- Identifying alternative ways of doing the work

Identifying next steps

It is important to identify small steps that can be used to enable students to see their progress, thus building students' self-confidence and self- esteem. Based on the assessment information, teachers should use strategies to enhance student learning keeping in mind the various learning styles.

Reviewing and reflecting on assessment information
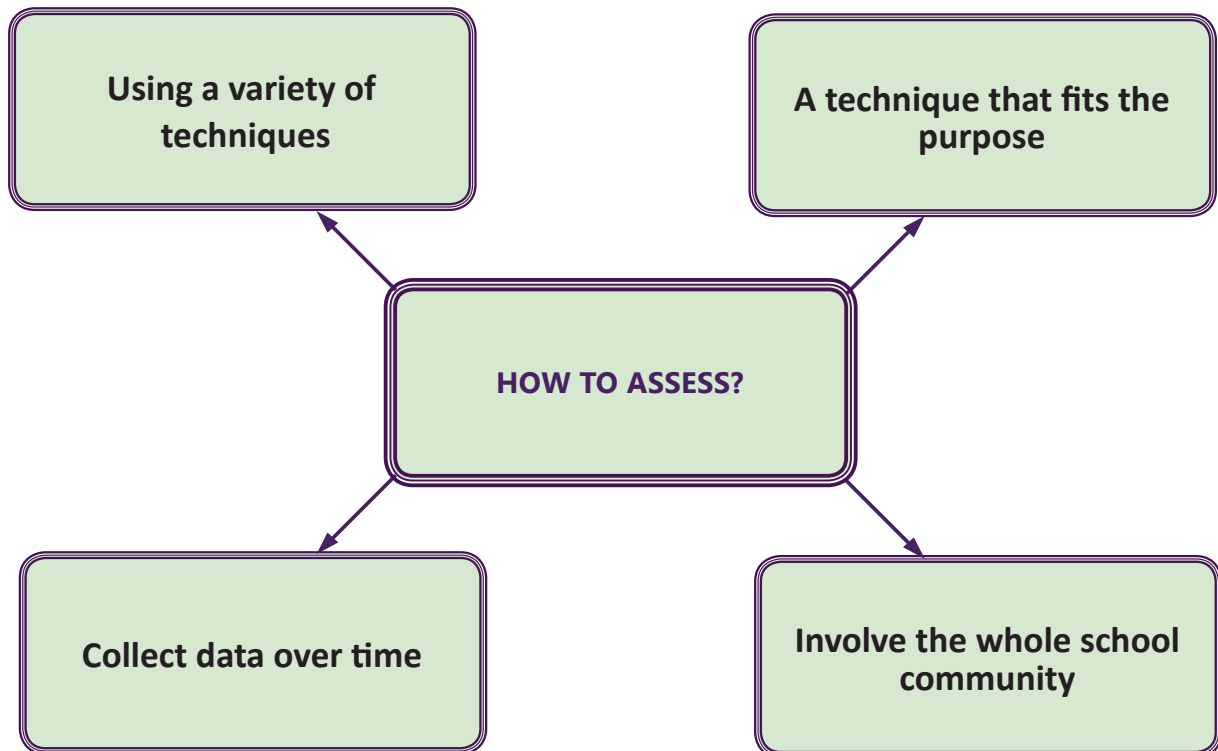
Formative assessment is pedagogy and cannot be separated from the instruction. Information gathered from the assessment should be used to review the learning process and proper intervention strategies should be identified.

Let's reflect!
• How much of formative assessment do we do? • How much do we change the instruction to meet the students' needs?

HOW TO ASSESS?

```
┌─────────────────────┐          ┌─────────────────────┐
│  Using a variety of │          │ A technique that fits│
│     techniques      │          │     the purpose      │
└─────────────────────┘          └─────────────────────┘
           ↖                              ↗
              ┌─────────────────────┐
              │   HOW TO ASSESS?    │
              └─────────────────────┘
           ↙                              ↘
┌─────────────────────┐          ┌─────────────────────┐
│ Collect data over   │          │ Involve the whole    │
│        time         │          │  school community    │
└─────────────────────┘          └─────────────────────┘
```

A technique that fits the purpose

The technique that the teacher selects should be reliable and valid for the purpose of assessment. Sometimes teachers select tasks from various sources, which may have little or no connection with the expected outcomes. In addition, it is important to note that the not all outcomes can be measured using written tests. It should be noted that whatever method students uses, in technical terms, the assessment task should be both valid and reliable.

Validity: The extent to which a test or task does the job for which it is used.
Reliability: The extent to which a test or task is accurate or consistence in measuring whatever it measures.
(Payne, 2003)

Using a variety of ways to assess

Teachers need to reflect on the different ways to assess students. Often schools are too engaged in giving written tests, teachers marking them and allocating a grade for students. It should be understood that there are several ways through which student learning can be assessed, which can make students more engaged in their learning.

This booklet will look into the following:

- Teacher designed tasks and tests
- Teacher Observation
- Portfolio
- Self and peer assessment
- Concept Mapping
- Questioning

> A combination of assessment methods should be used to identify student achievement and provide help accordingly

Teacher designed tasks and tests

Teacher designed tasks or tests are the most common method used for assessing student learning. It can be argued that if these are properly designed and used it can help the student achieve. Some of the issues to consider in giving tasks are:

- Ensuring that it uses constructivist approach to learning and teaching
- Ensuring that the items are in line with the objectives of the lesson
- Ensuring that it is designed as performance tasks or performance assessments (tasks related to real life)
- Ensuring that task/tests are used only for criterion referencing rather than norm- referencing
- Ensuring that task/test are part of the instruction and learning
- Ensuring that task/tests are used as a means of teaching metacognitive strategies

> A good assessment instrument should be:
> - Relevant
> - Balanced
> - Efficient
> - Objective
> - Specific
> - Appropriately difficult and discriminating
> - Reliable
> - Fair
> - Un speeded
> - (Payne,2003)

Through the tasks and tests teachers can gather information on students' understanding of various concepts. It gives an indication of the indicators that students have mastered and highlight those which requires further elaboration from the teachers. In addition to this, through the tasks and tests, teachers can also identify students who have mastered the concepts well and plan teaching and learning to meet the demands of these children.

It is important to note that although tests provide information for parents and is seen as 'assessment of learning', tests can also serve the purpose of 'assessment for learning'. Thus, the focus can be giving tests or tasks that measure student learning and progress and assist them accordingly.

The following example shows a teacher designed task in Social Studies.

Subject: Social Studies

Topic: Population Movement within Maldives

Objectives:

The students will be able to:

- Show respect to others while working collaboratively.

- Work productively while collaborating with others.

- Demonstrate effective communication skills when presenting information orally.

- Define the term migration.

- List three reasons why people migrate

- Briefly outline the problems rising due to migration.

- Highlight the steps taken by the government to ease the population congestion in Male'.

Task

Make a five minutes radio/ TV spot in groups of 4 and present to the class to make people aware of the consequences of migration.

Success Criteria

Success Criteria

Criteria	5	4	3	2	1
Maintains audience attention	Fully maintained audience attention	Maintained audience attention to a great extent	Maintained audience attention to some extent	Somewhat maintained audience attention	Did not maintain audience attention at all
Achievement of the objectives of the task	Objectives of the task fully achieved	Most of the objectives of the task achieved	Objectives of the task achieved to some extent	Few objectives of the task achieved	Objectives of the task not achieved
Content	All information presented in the Video spot was clear, accurate and thorough	Most information presented in the Video spot was clear, accurate and thorough.	Most information presented in the Video spot was clear and accurate, but was not usually thorough.	Information had several inaccuracies OR was usually not clear.	Information is irrelevant and not clear at all
Organization	Information is presented in a logical order and is easy to follow.	Information is presented in a logical order, but is still not generally easy to follow.	Information is not presented in a logical order, making it difficult to follow occasionally.	Information is not presented in a logical order, making it difficult to follow to a great extent.	information is notpresented in alogical order,making it unable to follow.
Creativity	A lot of thought was put into the effort making the presentation interesting and fun	Some thought was put into the effort making the presentation interesting and fun	Some thought was put into the effort making the presentation interesting and fun, but some of the things made it harder to understand/enjoy	Little thought was put into the effort to make the presentation interesting or fun.	Not able to put any thought into the effort to make the presentation interesting and fun.
Collaborative work	Almost always listens to, shares with, and supports the efforts of others in the group. Tries to keep people working well together.	Usually listens to, shares with, and supports the efforts of others in the group. Does not cause "waves" in the group.	Often listens to, shares with, and supports the efforts of others in the group but sometimes is not a good team member.	Sometimes listens to, shares with, and supports the efforts of others in the group. Often is not a good team member.	Rarely listens to, shares with, and supports the efforts of others in the group. Often is not a good team member.

Self and peer assessment

Self-assessment is an important skill that students need to learn. Through self-assessment student become independent learners, by assessing their understanding of concepts, efforts and attitudes.

Self-assessment can be made through questioning, journaling and checklists. For instance, in doing a group activity, students can reflect on how they can help the group or how other members can help or assist him/her.

The following are examples of tasks that could be used for self and peer assessment

Subject: Creative Arts

Mixed Media Collage

Title: Mixed Media Collage	**Grade:** 2	**Visual Arts**	**Time** 60 Minutes
Lesson Overview / Task: Students use various media to create a collage that incorporates the element of space and principles of repetition and variety.			

Strand & Indicator: Creative Production – VA. C2.2.3 Uses the element of space and the principles of repetition and variety, with a variety of art media.			
Rubric based on the Visual Arts outcome/ indicators:			
Advanced	**Proficient**	**Partially Proficient**	**Novice**
Consistently use the element of space and the principles of repetition and variety, with a variety of art media.	Usually use the element of space and the principles of repetition and variety, with a variety of art media.	Sometimes use the element of space and the principles of repetition and variety, with a variety of art media.	Rarely use the element of space and the principles of repetition and variety, with a variety of art media.

Teacher Observation

Teachers could observe students' understanding, progress, strengths and challenges, cooperation, study habits, and attitude.

Teachers could:

- Use checklists to understand student learning, especially targeting at specific learning outcomes

- Observe students when working alone, in pairs or in groups

- Observe students during instruction

- Sit with students and have small talks with students

- Ask students to think aloud

- Ask students to give real life examples for a concept or alternative ways of explaining a concept.

Teachers through observation of students against the set outcomes or targets can assist the teachers to provide differentiated learning. That is to identify the kind of assistance needed by the weaker students and how to adapt teaching to meet the needs of the much able students.

Questioning

Questioning is one technique the teachers can use to seek evidence to establish where students are in their learning.

- Questioning provides opportunities for teachers to identify and correct misunderstandings and gaps in knowledge.

- Questioning provides opportunities for teachers to provide extension work to support student learning.

- Questioning provides opportunities for teachers to gather information about student knowledge, understanding and skills that informs the teacher to plan strategies to enhance student learning.

Here are some ways questioning can be used as part of assessment for learning.

- Questioning encourages students to listen actively, speak and be actively involved in learning.

- Questioning has to be planned as a deliberate activity.

- Questioning should be in line with the learning outcomes of the lesson.

- Questioning should use more open questions; such questions provide opportunities for students to give reasoning and discuss their thoughts.

- Questioning should use questions that are cognitively challenging for students. Teachers may start with knowledge and understanding and move to synthesis and analysis questions.

- Encourage students to ask questions

- Questioning should prompt students towards further responses

- Using waiting or thinking time

- Responding positively to student answers
- Distributing questions around the class

Portfolio

Portfolio is a purposeful collection of student's work showing the range of performance and experiences. Portfolios can be used as an assessment tool. Based on the type of portfolio, the collection of students work can vary from the best to the weakest.

Teachers could use a range of portfolios based on the need. A few examples are documentation portfolio, process and showcase portfolios. The collection of student work depends on the type of portfolio, for instance if the portfolio is aimed at showing the progress of learning then samples of earlier and later work can be used. Likewise, if the portfolio is aimed at capturing the process of learning, then selection should focus on illustrating one or more skills.

Portfolios can assist in

- Engaging students in self – directed learning
- Engaging in self-assessment
- Exploring what is learned
- Identify students' progress towards the mastery of a target;
- Getting students engaged in goal setting
- Assists in learning; consideration can be given to the process rather than the final product

Concept mapping

Concept map is a graphical tool for organizing and representing information. The concepts are in enclosed circles or boxes with linking words to show the connection between the concepts. Concept mapping has been defined as a "meta learning strategy" where students think through the various concepts and identifies links.

In developing concept maps, the following are some issues that need to be considered:

> One of the powerful uses of concept maps is not only as a learning tool but also as an evaluation tool, thus encouraging students to use meaningful-mode learning patterns
>
> (Mintzes et al., 2000; Novak, 1990; Novak & Gowin, 1984).

- Start the concept map off with a focus question. Depending on the question the map can take various forms. For instance, 'what are living things?' can lead to a declarative concept map than a focus question such as the 'what are the benefits of living things'
- Understanding the links between various concepts/issues. Often students may label broad concepts but how it links with each other is not usually demonstrated.
- Connect the whole concept map in a meaningful way.

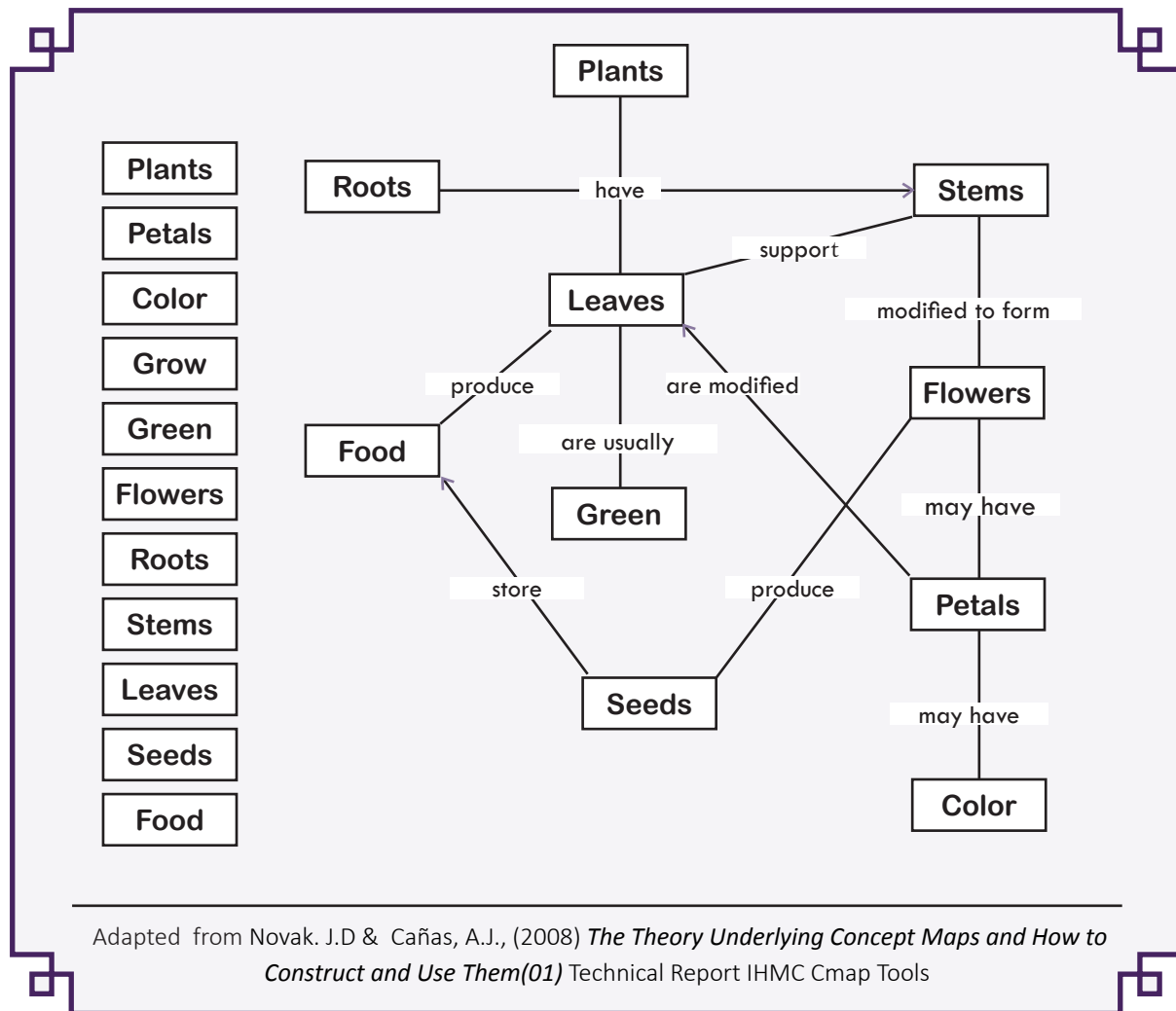**Some of the benefits of concept map:**

- Provides the opportunity to develop high order cognitive performance where by students can

show links between concepts.

- An easier way to summarize learning

- Identify misconceptions of the students

The following shows a good concept map for plants showing various connections.

Adapted from Novak. J.D & Cañas, A.J., (2008) *The Theory Underlying Concept Maps and How to Construct and Use Them(01)* Technical Report IHMC Cmap Tools

Collecting data over time

To see the progress of student learning it is important to collect and use student's data**.**

Data could be studied for individual students, for the whole class and for the whole school. Interpretations of the gathered data need to be shared with students, parents, and teachers and concerned others.

Based on the data gathered, teachers need to review the strategies they use in the classroom and identify what strategies work with individual students.

Involving the whole school community

Collecting information about student learning requires the participation of the whole school community; this includes teachers, parents as well as students.

Some of the ways to collect information can be conferencing between students, between student and teacher, between teacher and the parents or between the parents, teachers and students. In addition, reflection on student learning should be shared among the teachers in order that teachers can assist in students learning as different teachers might pick on different aspects of the student learning.
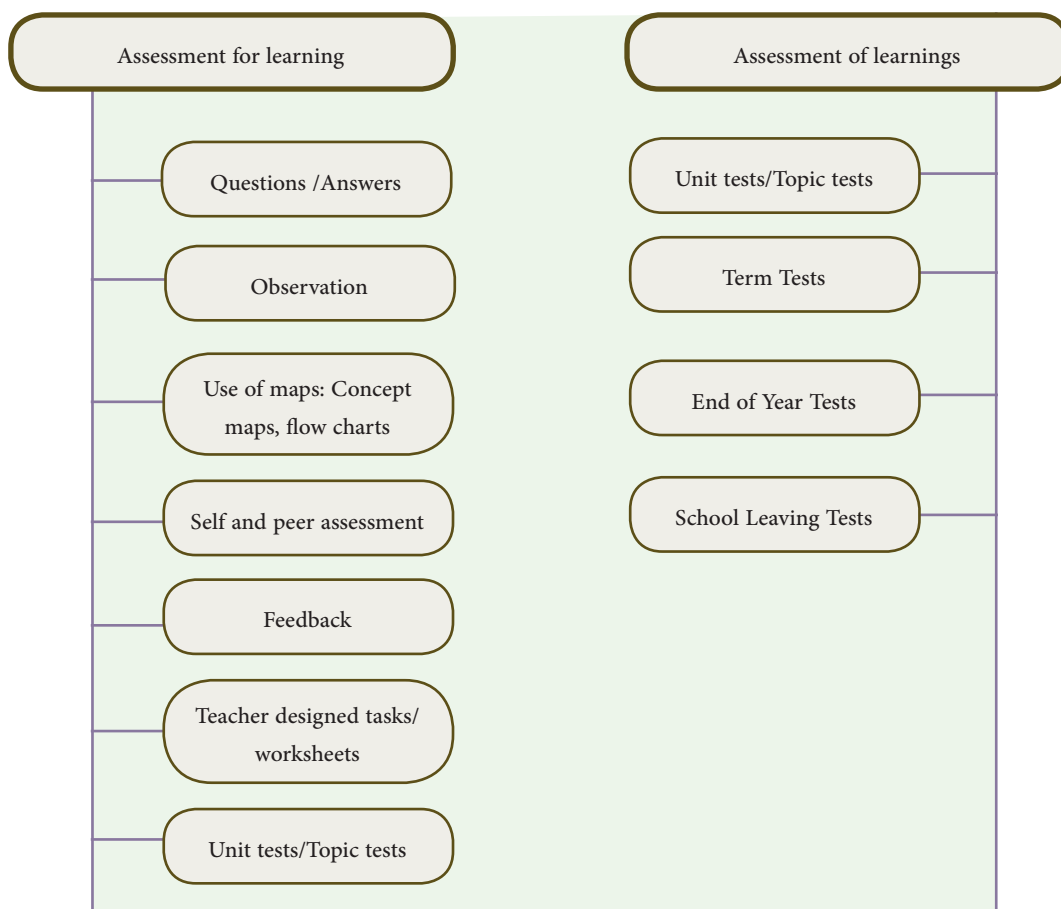
Information should be gathered on various aspects of student learning. This can help to understand the strengths, weakness, learning styles, habits, and talents of students. Proper intervention and assistance can then be provided to individual students.

Balancing assessment

To evaluate information on student learning, teachers need to consider information from various sources, including student products, paper tests, observations, reflections on the communication between student and teacher, communication between peers. This means that there need to be a clear balance between formative and summative learning achievement. Both summative and formative assessments are essential in order to gather information on student learning.

It is necessary that the learner acquires a clear picture of where the students are in relation to the standards or learning targets. Instruction has to be modified based on this information thus enabling students to continue to move forward.

The following diagram shows 'The Assessment Continuum'

Assessment for learning	Assessment of learnings
Questions /Answers	Unit tests/Topic tests
Observation	Term Tests
Use of maps: Concept maps, flow charts	End of Year Tests
Self and peer assessment	School Leaving Tests
Feedback	
Teacher designed tasks/ worksheets	
Unit tests/Topic tests	

Assessment across the key stages

Irrespective of the key stage, the assessment strategies mentioned in this booklet will help teachers to gather information on students learning, their progress which would help teachers to plan their future lessons. The strategies in this booklet will also help students to regulate their learning, understand their strengths, weaknesses and on ways of improving.

The following table shows the types of assessment that are expected to be used in each grade in Maldivian Schools (taken from National Assessment Policy (draft), 2014, p.4)

Grade	Type of Assessment
Children with special education needs	Individual Education Plan
Foundation Stage	Assessment for learning
Key stage 1 (Grades 1-3)	Assessment for learning
Key stage 2 (Grades 4-6)	Assessment for learning
Key stage 3 (Grades 7-8)	Assessment for learning – 60%
	Assessment of learning – 40%
Key stage 4 (Grades 9-10)	Assessment for learning – 50%
	Assessment of learning – 50%
Key stage 5 (Grades 11-12)	Assessment for learning – 40%
	Assessment of learning – 60%

Implementation strategies for schools

What could schools do?

Schools need to focus on their current practices in terms of assessment.

Priority 1	Where are we now?	How could we change?	How could we measure the progress?
Giving more helpful feedback to students	Teachers usually give a right or wrong when correcting student work	Analyse the various answers. Check for a pattern in students' answers. Check whether they have understood the concept, or are there language barriers.	Check how students have improved throughout. Reflect on the changes brought to the instruction when reflecting on student progress

Priority 2	Where are we now?	How could we change?	How could we measure the progress?
Giving more self and peer assessment	Teachers do not spend much time on peer and self-assessment. Usually the teacher marks the books. Parents also expect the teachers to mark the books.	Allocate sometime in the lesson plan for peer or self-assessment. Provide the students with success criteria. Ensure that students are familiar with the criteria. Ask students to justify their comments based on the given criteria.	Identify some of the changes in the students' work, in terms of how they analyse questions, respond to and communicate their thoughts. In other words monitor the metacognitive strategies that student use.

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