4th READ Global Conference | May 12–16 2014 | St Petersburg | Russian Federation
Measuring for Success | The Role of Assessment in Achieving Learning Goals | Keynote 3

Assessing Learning Goals in the Classroom

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Assessing Learning Goals in the Classroom

and How to Make It Happen **More Often** in **More Classrooms**

Presentation **Outline**

- What is Classroom Assessment
- How to Make It Happen

Four Critical Questions Related to Classroom Assessment

- What is it that we want students to learn?
- How do we know they have learnt it?
- What if they cannot learn it?
- What if they already learnt it?

| DuFour 2004

What is Classroom Assessment

Case Study | Let’s experience it.

Experiencing a **Lesson**

- Let's experience an opening segment of a primary-level mathematics lesson.

Multiply a two-digit number with a one-digit number to get a two-digit product.

Three-Part **Lesson Format**

- Acquisition
- Consolidation
  - Guided
  - Independent
- Extension

How to Make It Happen

Case Study | Let's look at the case of Singapore.

Two **Basics**

- Is there a culture of asking the **critical questions**?
- Is there **provision for assessment** in instruction?

Case Study | **Singapore**

“Thinking Schools, Learning Nation”

The focus on using school subjects to develop thinking.

| Singapore Ministry of Education 1997

“Teach Less, Learn More”

The focus on helping students develop a range of competencies to extend their learning.

| Singapore Ministry of Education 2004

Student-Centred Values-Driven

“The focus on balancing academic learning with a range of competencies including affective ones.”

| Singapore Ministry of Education 2012

Singapore Education System

- Starting off as an education system characterized by low achievement, Singapore embarked on an on-going journey to reform its education in the early 1980's. The shift to higher-order thinking began in the late 1990's. Increasingly, the system is trying to wean itself off too much content, too much emphasis on testing to balancing content with process, academic and non-academic learning as well as greater emphasis on holistic assessment.

Let's look at three possible **enablers** for measuring for success.

- **Learning Standards**

How do learning standards affect classroom assessment?

Learning Goals

- There is a **national** syllabus.

Learning Outcomes		
Knowledge, Understanding and Application	**Skills and Processes**	**Ethics and Attitudes**
arrangement and movement of the particles	compressibility) in terms of the arrangement and movement of the particles	
8. Model of Matter - Atoms and Molecules • describe an atom as an electrically neutral entity made up of a positively charged nucleus (protons and neutrons) with negatively charged electrons moving round the nucleus • show an awareness that atoms of an element have a unique number of protons • recognize that atoms have mass that is contributed by the mass of nucleus • show an understanding that a molecule is a group of two or more atoms chemically combined together • state the number and types of atoms, given the chemical formula of a compound (writing of chemical formula is not required)	• compare the relative size of an atom to other objects • compare atoms and molecules	• show an appreciation of how in practice, models are constructed, justified and continuously revised as they are used to probe new phenomena and collect additional data (e.g. the various atomic models) • show an appreciation of scientific attitudes such as creativity and open-mindedness in creating models to explain the fundamental nature of things and the willingness to re-examine existing models • show an awareness that technologies resulting from knowledge of the atom have created social and ethical issues, risks and costs (e.g. atomic bomb)

Content	Learning Experiences
3. Multiplication and Division	**Students should have opportunities to:**
3.1 concepts of multiplication and division 3.2 use of x 3.3 multiplying within 40 3.4 dividing within 20 3.5 solving 1-step word problems involving multiplication and division with pictorial representation	(a) make equal groups using concrete objects and count the total number of objects in the groups by repeated addition using language such as '2 groups of 5' and '2 fives'. (b) share a given number of concrete objects/picture cutouts and explain how the sharing is done and whether the objects can be shared equally. (c) divide a set of concrete objects into equal groups, and discuss the grouping and sharing concepts of division.

Another possible **enabler** for measuring for success.

- **Textbooks and Other Curriculum Resources**

How do teachers and students use textbooks to assess students' current level of learning and plan for subsequent learning?

Textbooks

Exercise 1D

BASIC LEVEL

1. If x is inversely proportional to y^3 and $x = 50$ when $y = 2$,
   (i) find the value of x when $y = 4$,
   (ii) find an equation connecting x and y,
   (iii) calculate the value of y when $x = 3.2$.

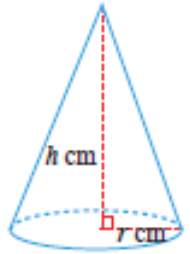
2. If z is inversely proportional to $\sqrt{w}$ and $z = 9$ when $w = 9$,
   (i) find an equation connecting w and z,
   (ii) find the value of z when $w = 16$,
   (iii) calculate the value of w when $z = 3$.

INTERMEDIATE LEVEL

3. For each of the following equations, state the two variables which are inversely proportional to each other and explain your answer.
   (a) $y = \frac{3}{x^2}$ (b) $y = \frac{1}{\sqrt{x}}$
   (c) $y^2 = \frac{5}{x^3}$ (d) $n = \frac{7}{m-1}$
   (e) $q = \frac{4}{\quad}$

7. The force of repulsion, F newtons (N), between two particles is inversely proportional to the square of the distance, d m, between the particles.
   (i) Write down a formula connecting F and d.
   (ii) When the particles are a certain distance apart, the force of repulsion is 20 N. Find the force when the distance is halved.

8. For a fixed volume, the height, h cm, of a cone is inversely proportional to the square of the base radius, r cm. Cone A has a base radius of 6 cm and a height of 5 cm. The base radius of Cone B is 3 cm and the height of Cone C is 1.25 cm. If all the cones have the same volume, find
   (i) the height of Cone B,
   (ii) the base radius of Cone C.



ADVANCED LEVEL

9. If y is inversely proportional to $2x + 1$ and the

A third possible **enabler** for measuring for success.

- **Focus on Holistic Assessment**

Formal testing is strongly discouraged in Primary 1 and Primary 2. This policy, introduced in 2009, is now a common practice in all primary schools in Singapore. How has this explicit policy paved the way for more classroom assessment?

“The prototyping schools focused their efforts on building children’s confidence and desire to learn by using age-appropriate assessment in the lower primary years. Instead of a heavy emphasis on year-end pen-and-paper examinations, they used a range of assessment modes and bite-sized forms of assessment for richer feedback on learning.”

Grace Fu 2010

Senior Minister of State | Ministry of Education Singapore

This was part of the speech at PERI Holistic Assessment Seminar held in 2010 to share how pilot schools did classroom assessment in the lower primary levels.

Classroom Assessment and **Affective Learning Goals**

- It is seen as a necessary change to achieve affective learning goals such as building confidence and motivation to learn.
- It is also used as a tool to assess how well the affective learning goals have been achieved.

Example of Holistic Assessment | Peer Assessment

Source | St Anthony's Primary School

Policy on Summative Assessment

Lessons from Looking at Singapore

from a system that used to focus on teacher-directed, summative testing

Making Classroom Assessment Happen

- What is **Valued**?
  - Rhetoric
  - Teacher Evaluation
  - National Test
  - Leadership

Making Classroom Assessment Happen

- What **Tools** Are Available?
  - Instrument
  - Using Instrument
  - Using Data for Action
  - Planning the Action

Making Classroom Assessment Happen

- What are the Platforms for Developing Teacher Assessment **Skills**?
  - Pre-service Teacher Education
  - In-service Professional Development

Looking Ahead & Challenges

- Singapore has been fairly successful in getting schools achieve content-related ‘micro’ learning goals.
- The challenge for Singapore is to for schools to help students achieve ‘macro’ learning goals.

“… moving from learning to count to **learning what counts** …”

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