


 The University of Sydney
The Differentiated Classroom
 Alexandra Hugman
 Director, UniServe Science

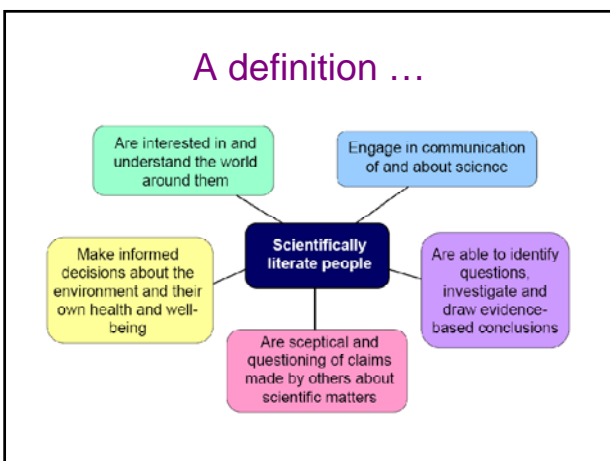
The challenge of catering for the full range of students in the junior secondary classroom




Why science education?

- Agreed goal of science education is scientific literacy

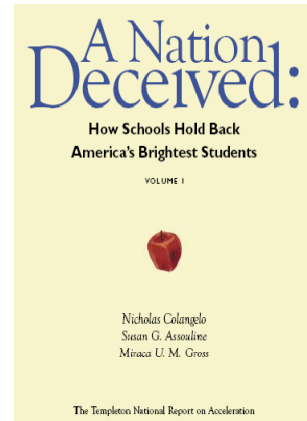
A definition based on *The Status and Quality of Teaching and Learning in Australian Schools* (Goodrum, Hackling, & Rennie, 2001)



- "A recurring evidence-based criticism of traditional school science has been its lack of relevance for the everyday world". (Aikenhead, 2006, p. 31)
- "most students tend not to learn science content meaningfully (i.e., do not integrate it into their everyday thinking)". (Aikenhead, 2006, p. 27)
- Our challenge is to make it worthwhile for students to learn science in a meaningful way, i.e., to change the science curriculum so that it has demonstrable relevance and value to students.
- Achieving this involves bringing science at school and science in the community much closer together.

Managing diverse learners

- Streamed classes
- Categorise the 'gifted and talented' student
 - Accelerate
 - Top class
- Mixed ability classrooms



The Mixed Ability Classroom

- **One size does not fit all!!**
- (Wormeli, 2007)

What do you do now?

- Sound strategies
- Flexible methods
- Good results

A reflective question...

- Do we actively seek to understand students' knowledge, skills and talents and adapt our instruction to respond to their needs?



Some more...

- Do we continually increase our diverse range of strategies?
- Do we organise our classroom for students' learning or our teaching?
- Do we keep up-to-date on latest research about learning **and** our subject area?

And...

- Do we self-analyse and reflect on lessons and assessments – searching to improve?
- Are we open to be critiqued?
- Do we challenge students to be their own education advocates and give them the tools to do so?

Types of students

- ESL
- Gifted and talented
- Low socioeconomic background
- Keen on sport
- Howard Gardner's Learning Intelligences
- What type of learner are you?

Howard Gardner's Model of Multiple Intelligences

- Word Intelligence
- Body Intelligence
- Music Intelligence
- Logic and Maths Intelligence
- Naturalist Intelligence
- People Intelligence
- Space and Vision Intelligence
- Self Intelligence



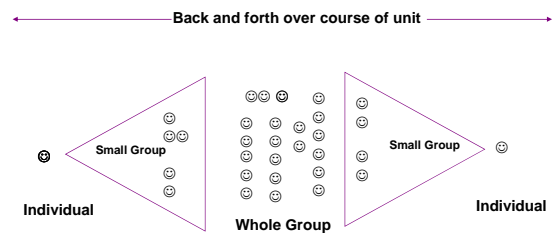
Finally...

- What misunderstandings are likely to occur during the unit and how can I prevent them?
- Can I meet the needs of all students so all benefit from the learning experience?
- Am I holding students accountable for learning the same information and skills whichever their direction?

Two Keys to Differentiation

- 1. Do whatever it takes to maximise individual student's learning
- 2. Prepare students to handle anything in their current and future lives that is not differentiated – to become their own advocates of learning.

Ebb and Flow of Experiences



(Tomlinson, 2001)

So...

- Start small



So...

- Start small
- Work with a colleague



The reflective question...

- Do we actively seek to understand students' knowledge, skills and talents and adapt our instruction to respond to their needs?

