

# Learning and Assessment: How do they influence each other?

**Dr. Karen V. Mann**

Professor

Division of Medical Education

Dalhousie University Halifax, NS Canada

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# Objectives for today's presentation

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- To explore learning:
  - Learning outcomes
  - Principles of learning
  - Students' approach to learning
  - Factors affecting learning



# Objectives for today's presentation

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- To explore assessment
  - Purposes of assessment
  - Characteristics of effective assessments
  - Approaches to assessment
- To explore and build on the links between learning and assessment

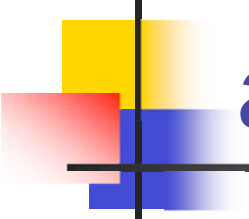


# Learning outcomes

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- Durable
- Flexible
- Functional
- Meaningful
- Generalizable
- Application-oriented

Simons, Van der Linden & Duffy (2000)



# What are our goals in teaching anatomy?

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Students will:

- Learn their way around the human body
- Learn about the body as a structure, and that problems can occur
- Develop a foundation for their professional education



What are students learning in  
their anatomy course(s)?

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# Anatomy: What are students learning?

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- Anatomy- gross and microscopic, neuroanatomy and embryology
- Structure and function
- Team dynamics
- Professionalism
- Attitudes toward science
- Introduction to death and dying
- The hidden curriculum
- Anatomy as part of medical knowledge



# Our assumptions about teaching and learning

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- Our own experience
- Our beliefs
- Our “personal” and “practical theories”



# Approaches to Teaching

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- Transmission - delivering content
- Apprenticeship - modeling ways of being
- Developmental - cultivating ways of thinking
- Nurturing - facilitating personal agency
- Social Reform - working toward a better society

Pratt (1998)



# Ways of thinking about learning

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- Learning as an increase in knowledge
- Learning as memorizing
- Learning as acquiring facts, skills and methods that can be retained and used as necessary
- Learning as making sense or abstracting meaning
- Learning as interpreting and understanding reality differently

Saljö, in Ramsden (2003)

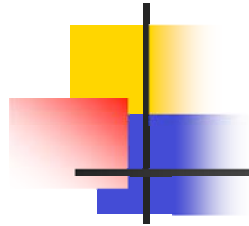


# Approaches to Learning and Study

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- Deep approach – goal is to understand concepts and principles
- Surface approach – goal is to memorize, learn for a test, complete a task

Ramsden (2003)



## Deep approach

- Focus on relevant concepts
- Relate previous to new knowledge
- Relate knowledge from different courses
- Relate ideas to everyday experience

## Surface approach

- Focus on sentences 'words'
- Focus on unrelated aspects of text
- Memorize for assessments
- Associate concepts unreflectively

Ramsden (2003)



# Deep approaches

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Deep approaches are encouraged by...

- Teaching and assessment methods that foster active and long-term engagement with learning tasks
- Stimulating and considerate teaching, especially teaching which demonstrates the lecturer's personal commitment to the subject matter and stresses its meaning and relevance to students

Ramsden (2003)



# Deep approaches

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Deep approaches are encouraged by...

- Clearly stated academic expectations
- Opportunities to exercise responsible choice in the method and content of study
- Interest in and background knowledge of the subject matter
- Previous experiences of educational settings that encourage these approaches

Ramsden (2003)



# Surface approaches

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Surface approaches are encouraged by...

- Assessment methods emphasizing recall or the application of trivial procedural knowledge
- Assessment methods that create anxiety
- Cynical or conflicting messages about rewards
- An excessive amount of material in the curriculum



# Surface approaches

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Surface approaches are encouraged by...

- Poor or absent feedback on progress
- Lack of independence in studying
- Lack of interest in and background knowledge of the subject matter
- Previous experience of educational settings that encourage these approaches



# Principles of learning




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-  Prior knowledge and its activation
-  Elaboration of new knowledge
-  Learning in context
-  Transfer of knowledge
-  Organization of knowledge



# Principles of learning (cont'd)

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-  Learning is social- we learn from each other and from the environment
-  Learning through observation
-  Learning through practice and feedback



# Collaborative learning

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- Fits with our understanding of learning and knowledge
- Offers opportunities for active learning
  - deciding what to learn and how to go about it
- Enhances motivation and self-confidence
- Results in equal or higher learning outcomes
- Elicits discussion and elaboration



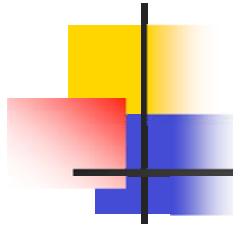
# Factors influencing learning

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- The Learning Context or Climate
- Prior knowledge and experience
- Teaching approaches and expectations
- Assessment

Ramsden (2003)

Biggs (2003)



# Student Learning in Context

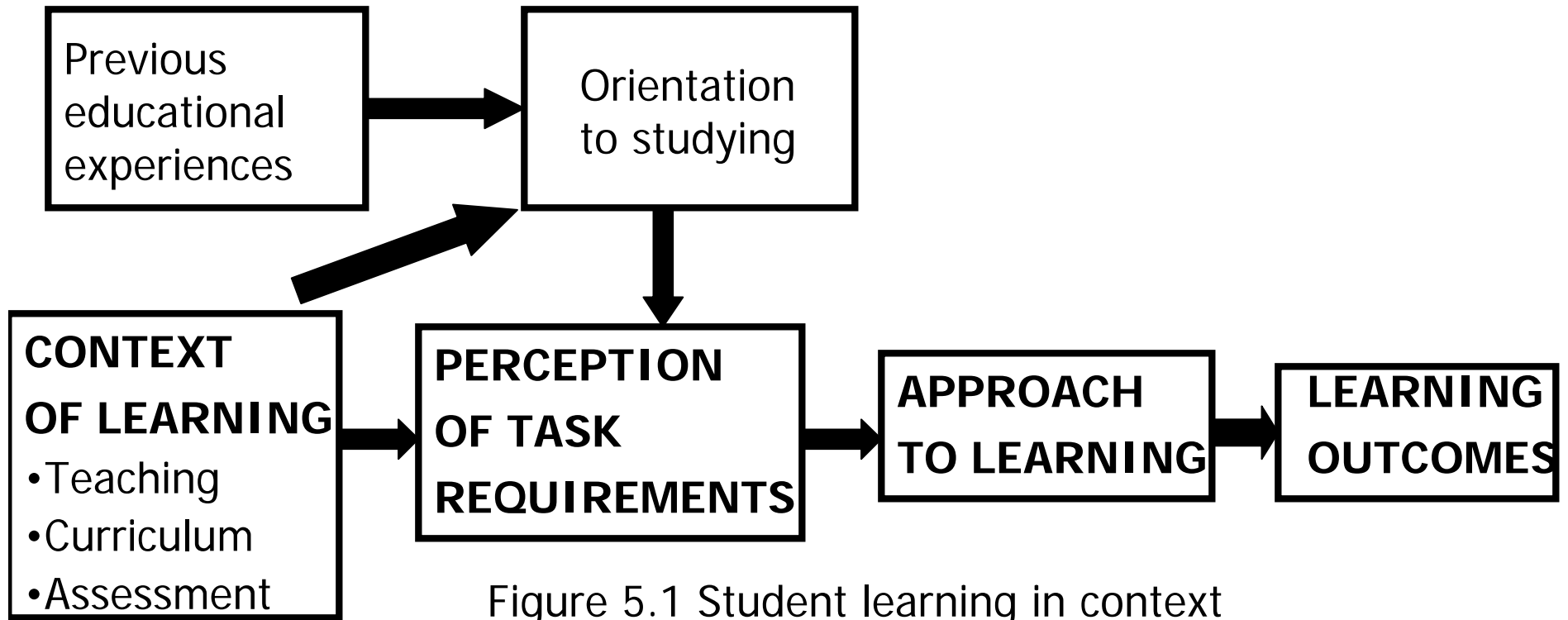


Figure 5.1 Student learning in context

(Ramsden, 2003)



# Assessment of Anatomy Learning

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# The Purposes of Assessment

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- To understand the quality of student learning
- To report and judge performance
- To improve teaching
- To provide feedback
- To motivate and encourage
- To improve learning
- To diagnose misunderstandings

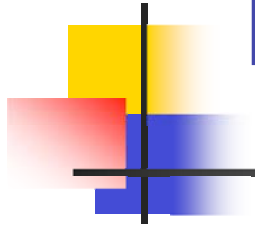


# Learning and Assessment

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Teaching → Learning → Assessment

# Learning and Assessment



**Learning activity**

**Assessment**

**Planning and  
improvement**

**Reflection and analysis**

# Teachers' and Learners' perspectives on assessment

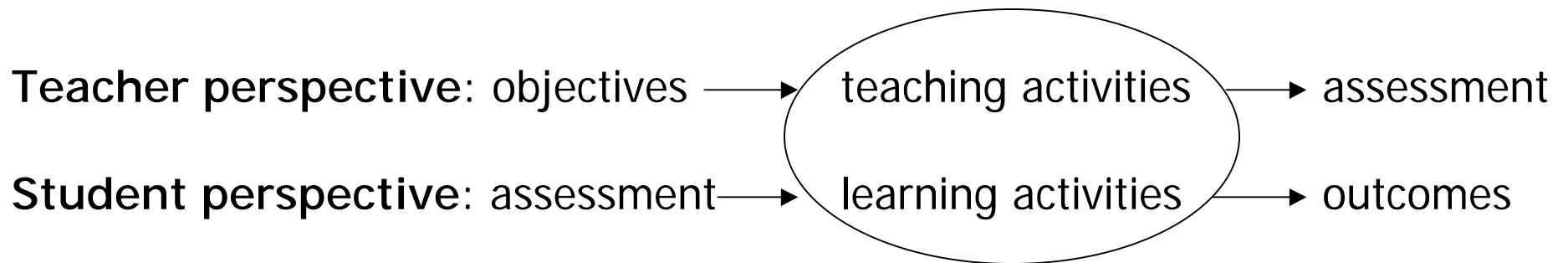
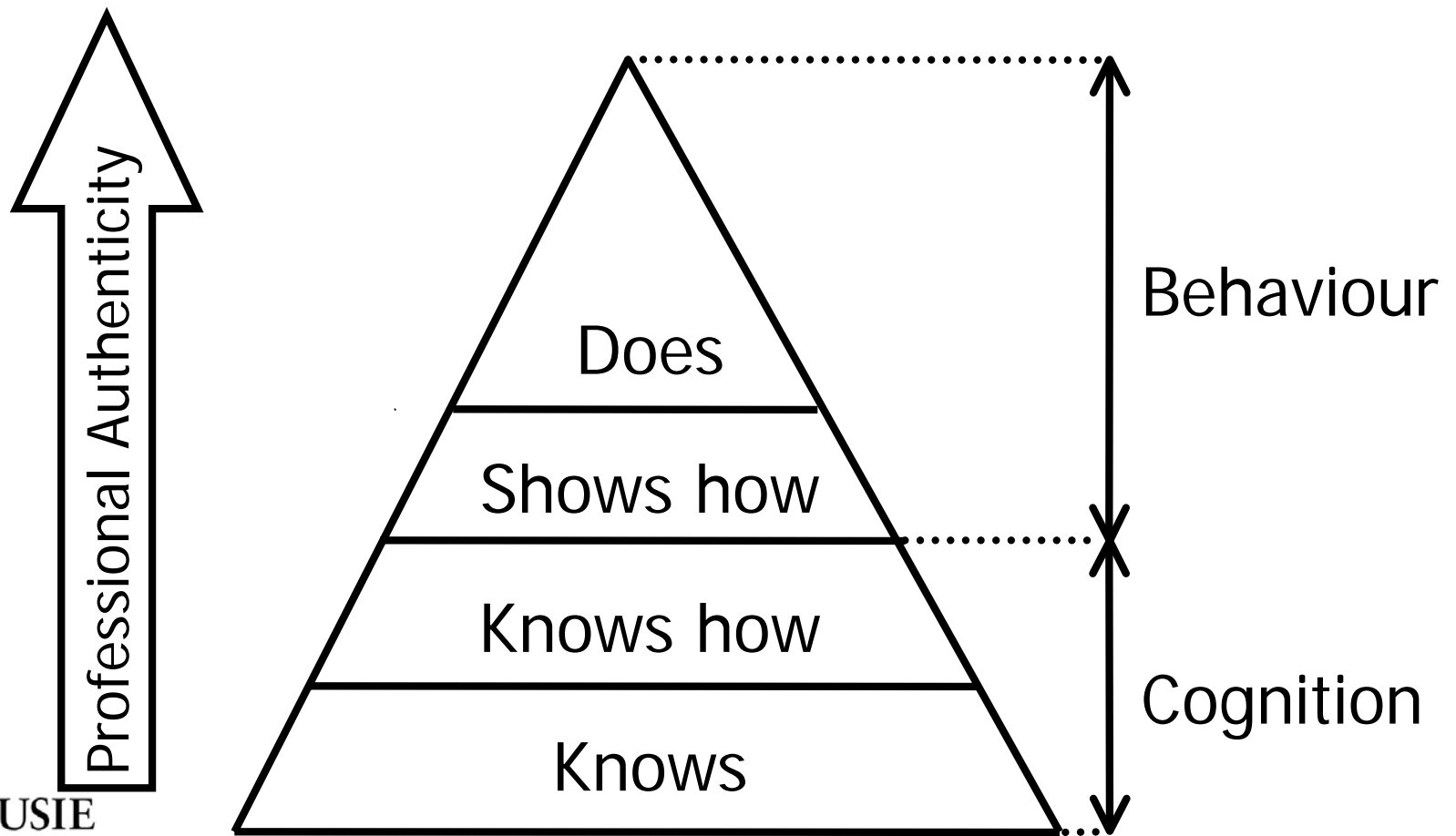
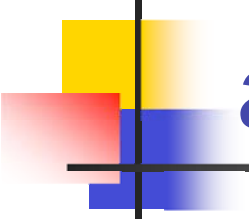


Figure 8.1: Teachers' and students' perspective on assessment

Biggs (2003)

# A Simple Model of Competence





# What are we looking for in our assessment methods?

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# What are we looking for in our assessment methods?

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- Reliability
- Objectivity
- Standardization
- Aligned with goals and objectives
- Feasibility
- Effect on learning
- Assessment for understanding



# Educational Impact of Assessment

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- Impact on what is learned
- Impact on how it is learned
- It's not the assessment method that determines learning;
- It's how students experience the methods



# The Measurement Model of Assessment

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Underlying assumptions:

- A quantitative view of knowledge
- Percentages are universal currency
- The test needs to spread students out
- Quantitative approaches are scientific, precise and objective

Biggs (2003)



# Procedures deriving from this model

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- Grading on the curve
- Marking by 'counting up'
- Assessment separated from teaching




Biggs (2003)



# Assessment as creating 'backwash'

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## Unintended outcomes

-  The trees are more important than the woods
-  Verbatim responses will gain marks
-  Attribution to uncontrollable factors

 Biggs (2003)



# The Standards Model of Assessment

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- We can set standards as course objectives
- Most students should reach standards
- Different performances can reflect the same standards
- Teachers can judge performances about criteria



# Principles of Assessment

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- Assessment and educational goals should be aligned
- Rarely will one method satisfy all objectives
- Assessment should allow learners to show what they know, not just what they don't know

# Principles of Assessment

...contd.

- Feedback is critical
- All goals should be assessed
- Not all assessments have to contribute to a grade
- Expectations must be clear
- Assessments should reward deep approaches to learning



# Assessment tools in large classes

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- MCQs
- Concept Maps
- 3-minute essay
- Short-answer exams
- More frequent assessments



# Can we include self and peer assessment?

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- Involvement is a teaching and learning activity
- Knowing criteria first hand
- Understanding what constitutes good evidence
- Learning to apply criteria
- Preparation for future



# Summary

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- Learning and Assessment are integrally related
- Assessment influences student approaches to learning
- Approaches to learning influence the quality of learning
- Broadened approaches to assessment can be useful



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