Moving the mountain:
Towards a scholarship of teaching and learning

Dean's Advisory Group
Cambridge, MA, 7 April 2011

Innovation

how can we foster/teach innovation?

Innovation

Became good at it by:

- practicing
- doing it
- trial and error
- getting it wrong at first and learning from mistakes

Innovation

Probably NOT by:

- being trained
- being taught
- listening to experts
- reading about it

How do we learn?

We learn by:

- doing
- positive feedback
- wanting to learn
- needing to learn

How do we learn?

We learn by:

- doing
- positive feedback
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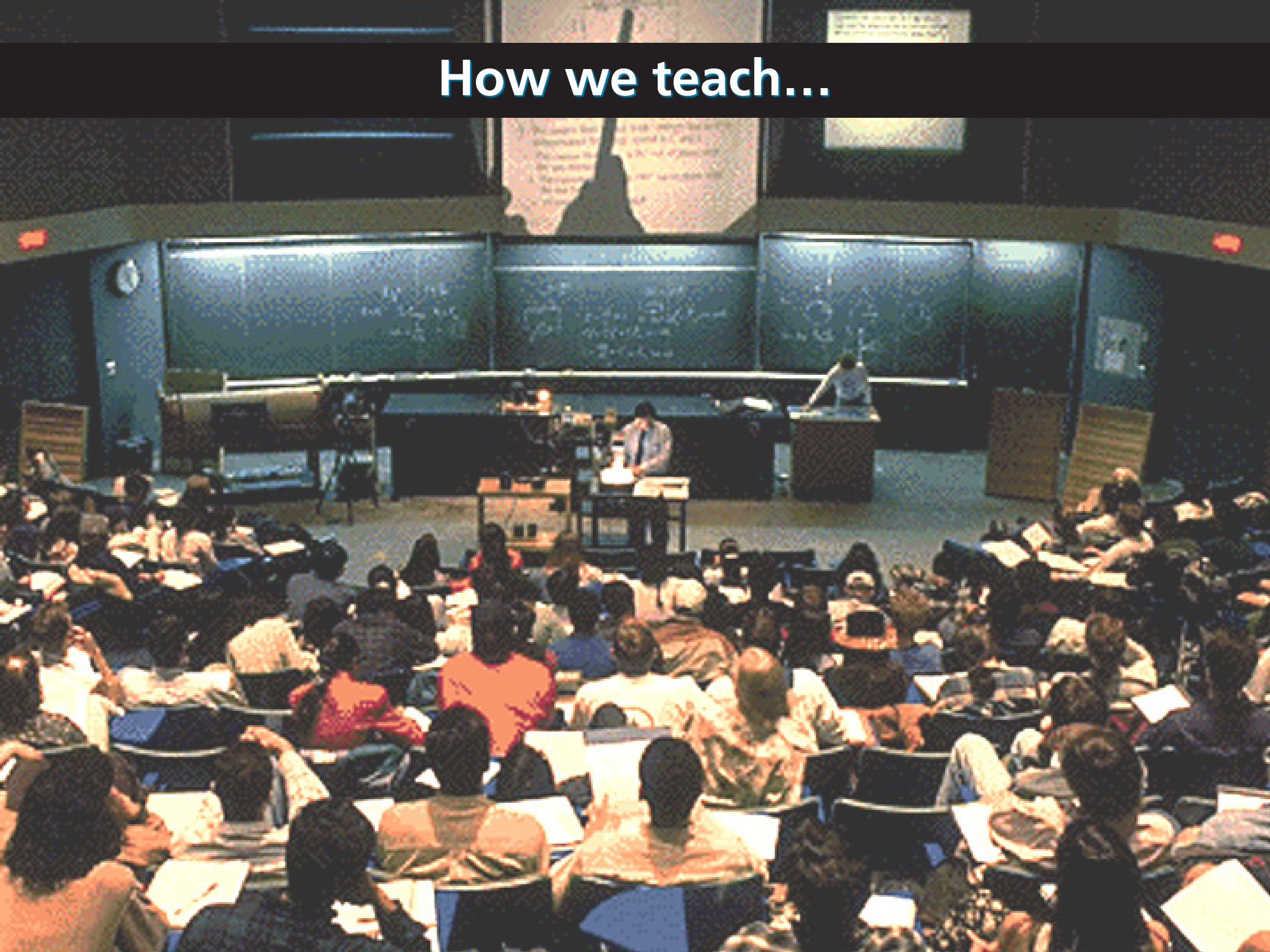
and how do we teach...?

How we teach…



How we teach…

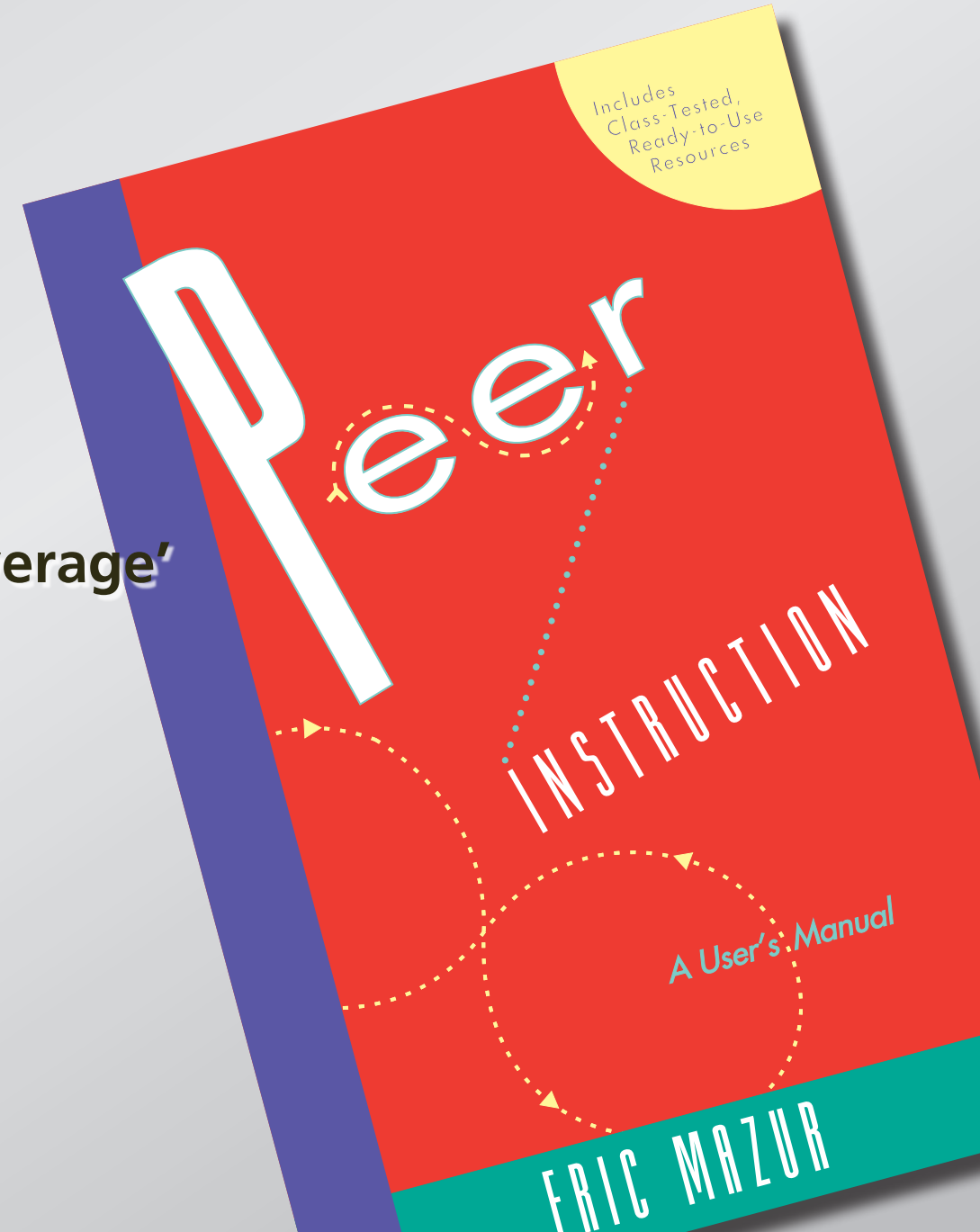
cognitive stages

1. awareness
2. recognition
3. replication
4. innovation

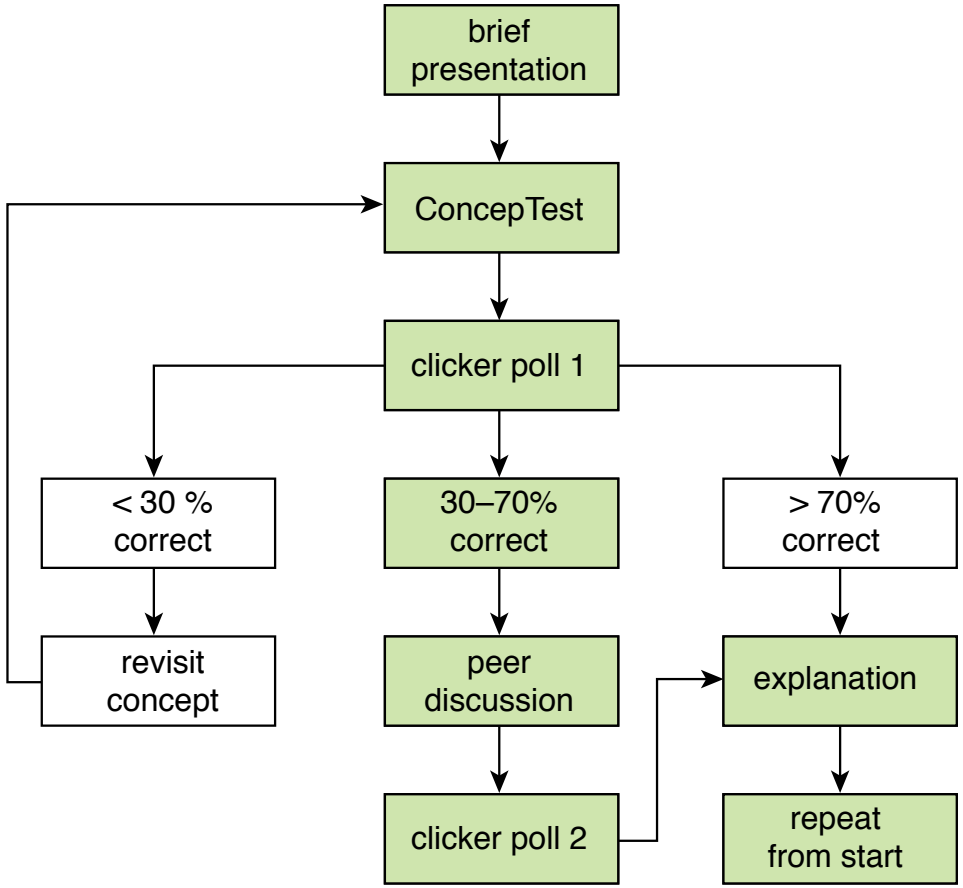
Peer Instruction

Main features:

- **pre-class reading**
- **in-class: depth, not 'coverage'**
- **ConcepTests**



Peer Instruction



Summary

Education is no longer about transferring information

Nurture innovation by

- making students develop arguments
- stimulating creativity and teamwork

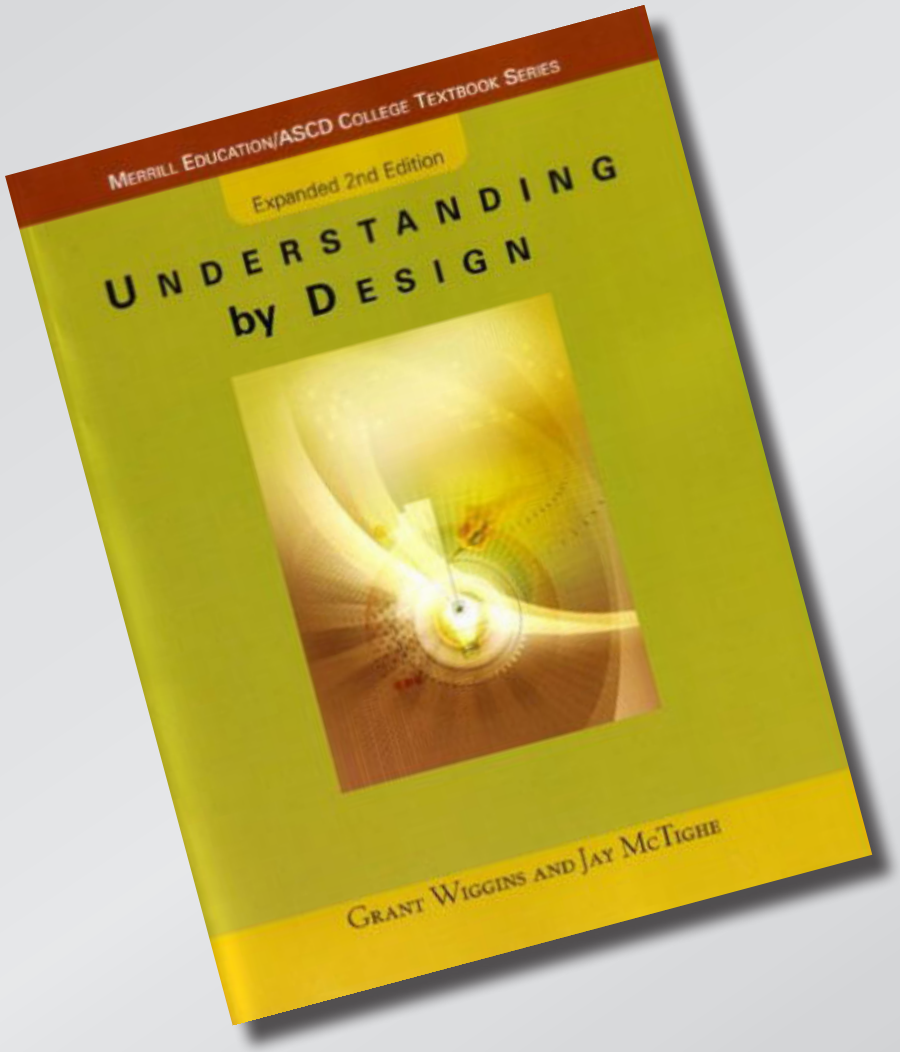
Summary

We need to work on:

- defining goals
- assessment
- learning environment

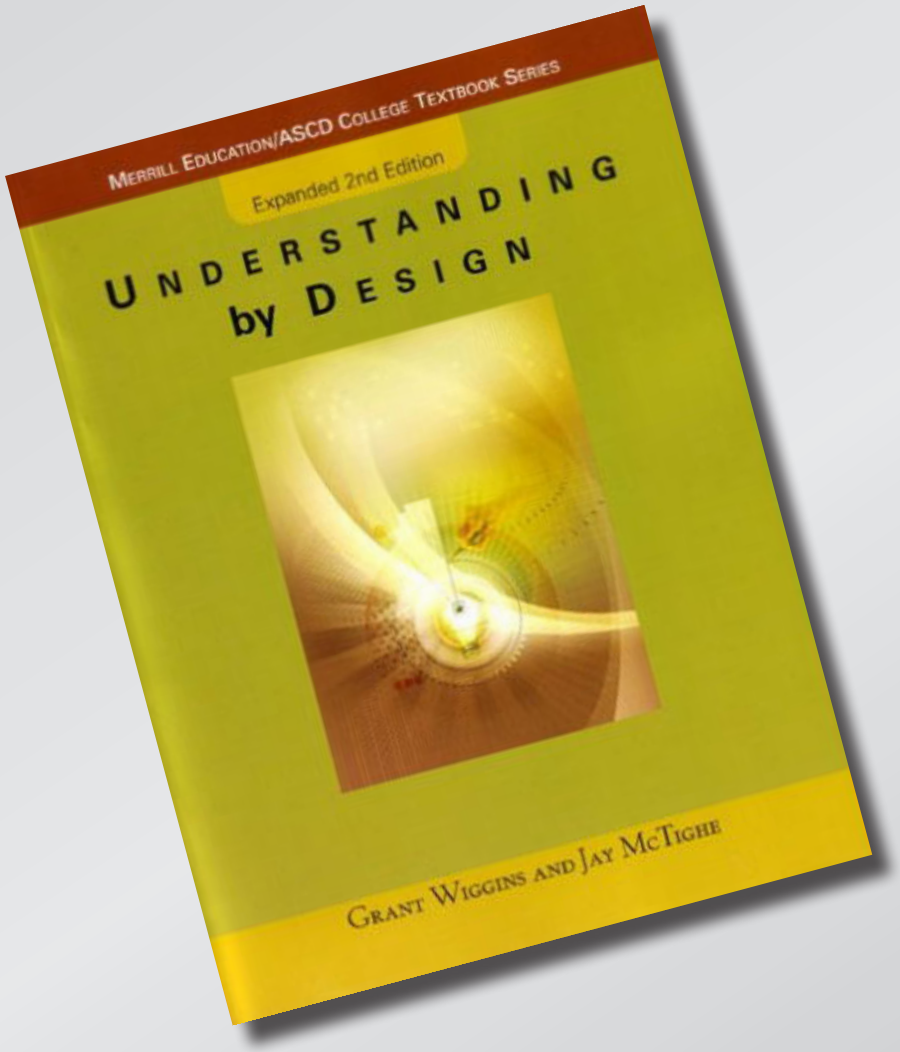
Curriculum design

Setting learning goals



Curriculum design

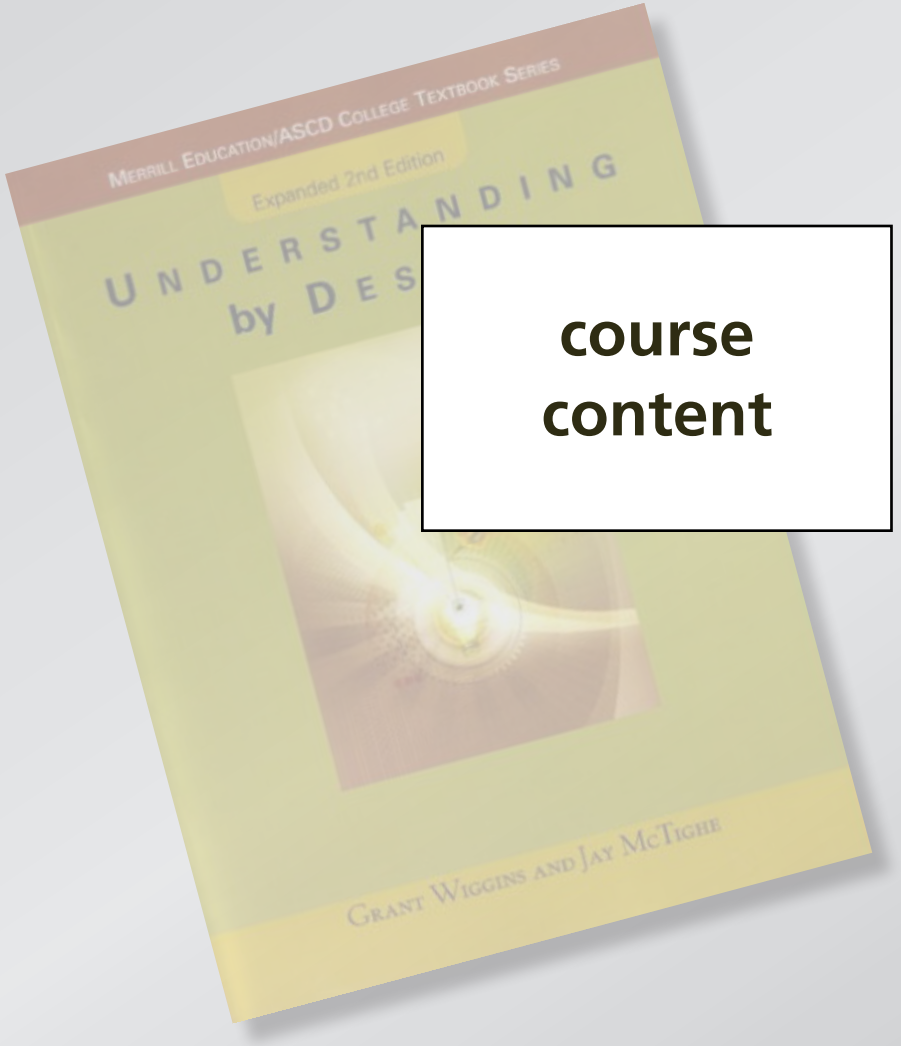
Setting learning goals



- approach, not content
- focus on understanding
- backward design

Curriculum design

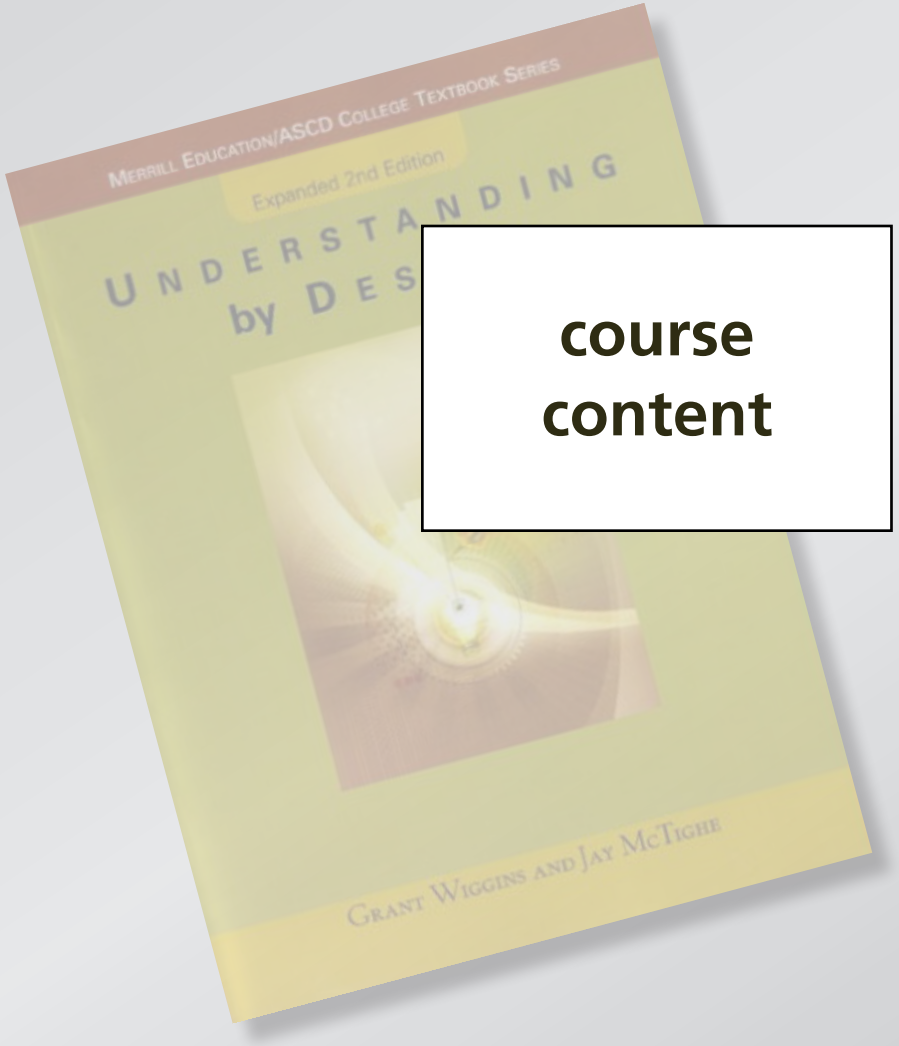
Traditional approach to course planning



course content

Curriculum design

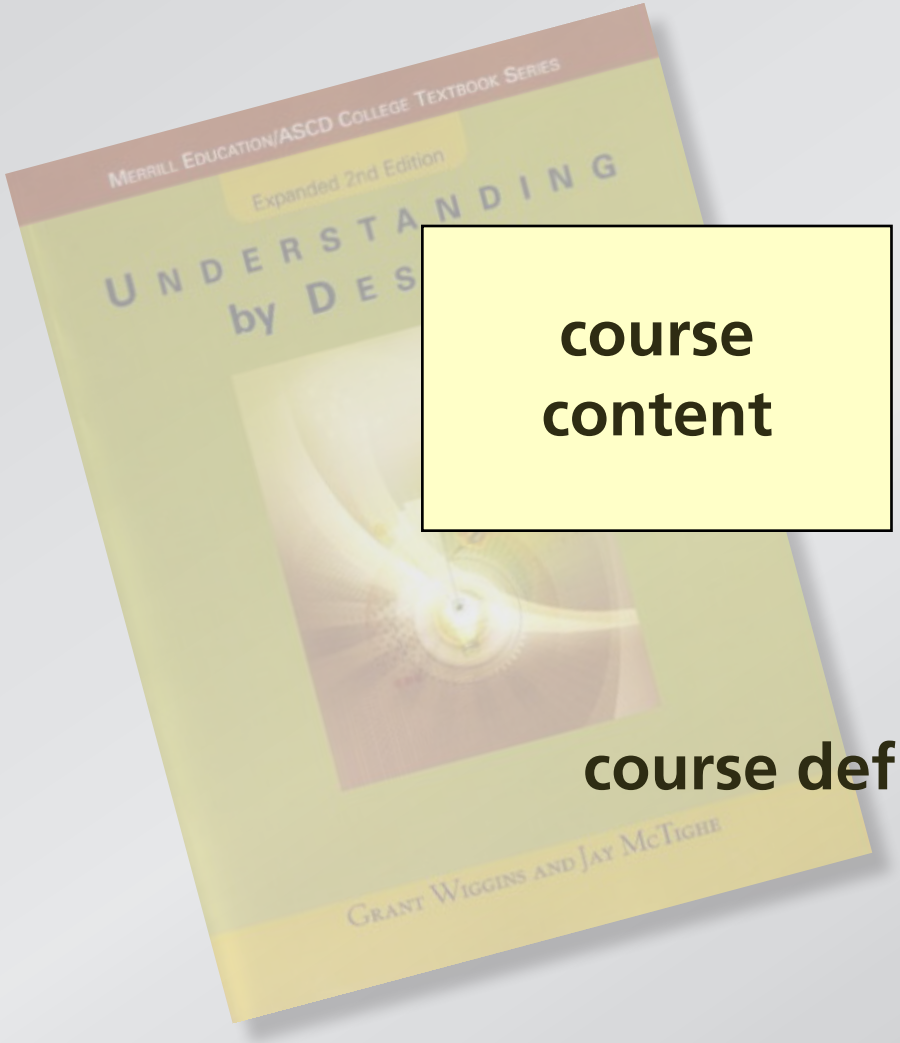
Traditional approach to course planning



course content ▶ assessment

Curriculum design

Traditional approach to course planning

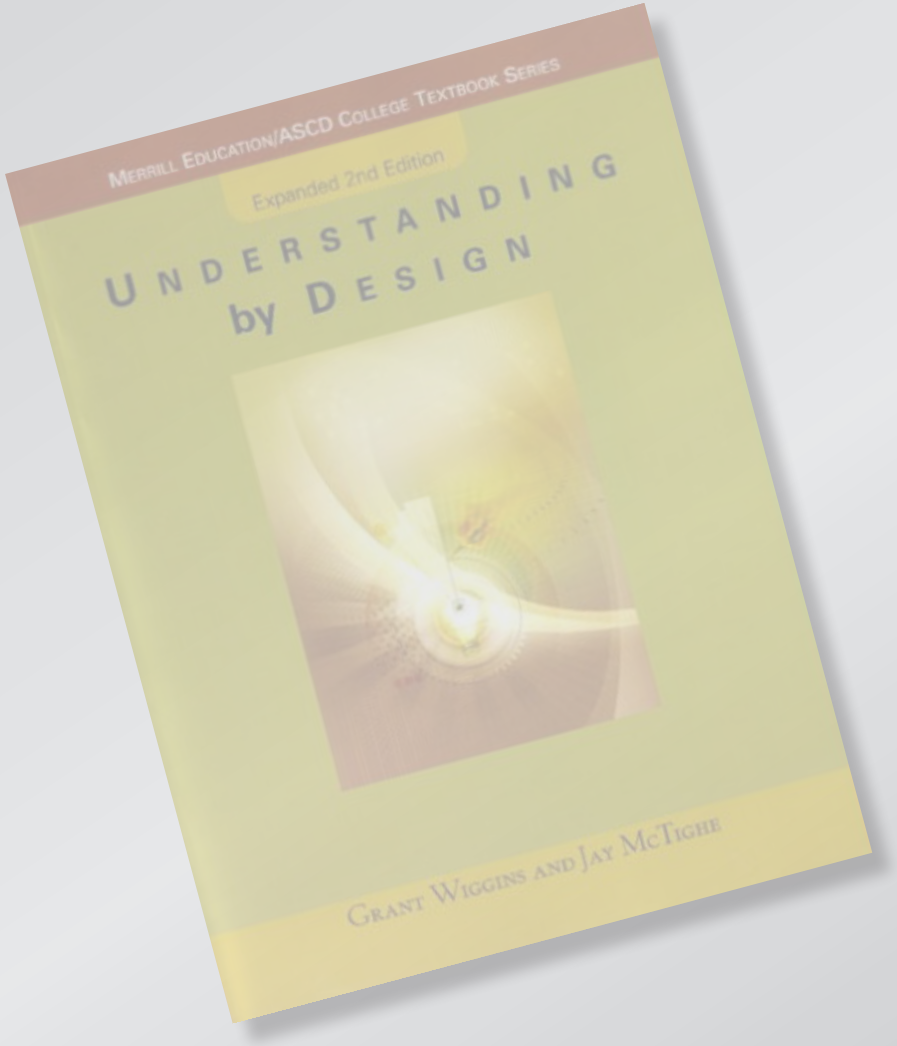


course content → assessment

course defined by content

Curriculum design

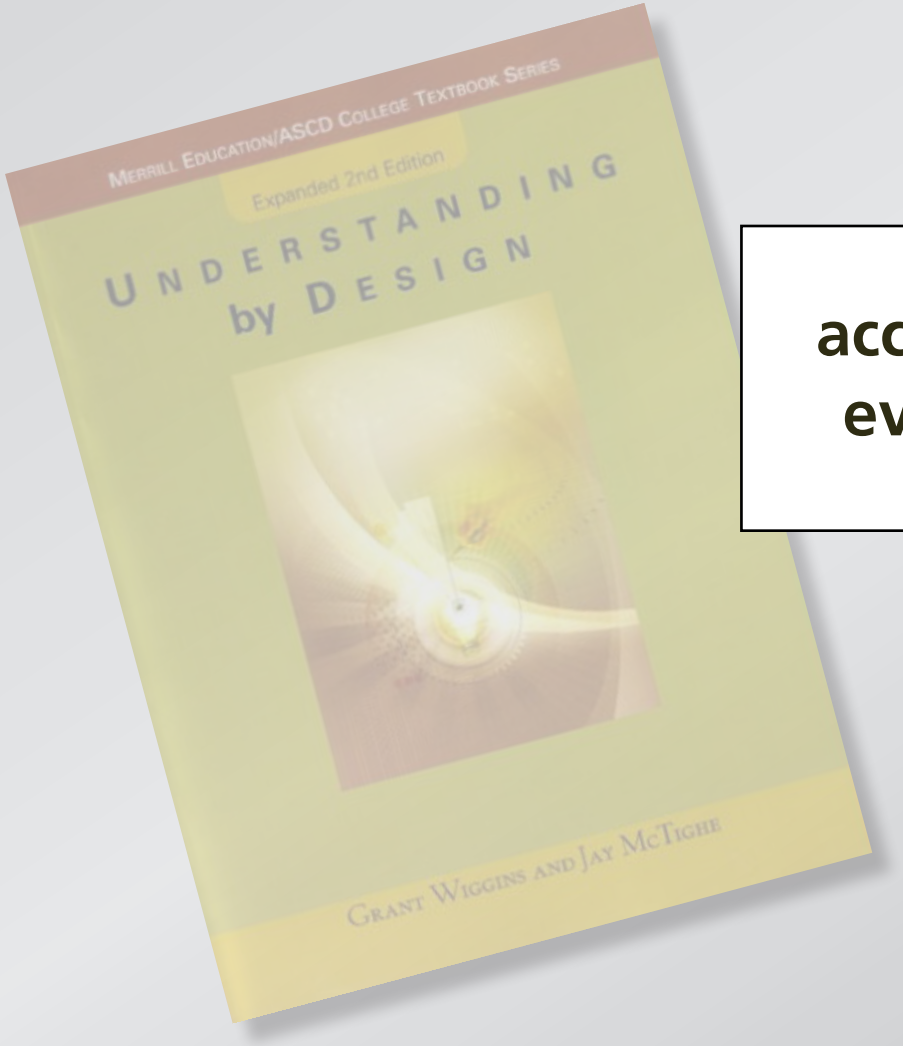
Backward design



desired outcomes

Curriculum design

Backward design

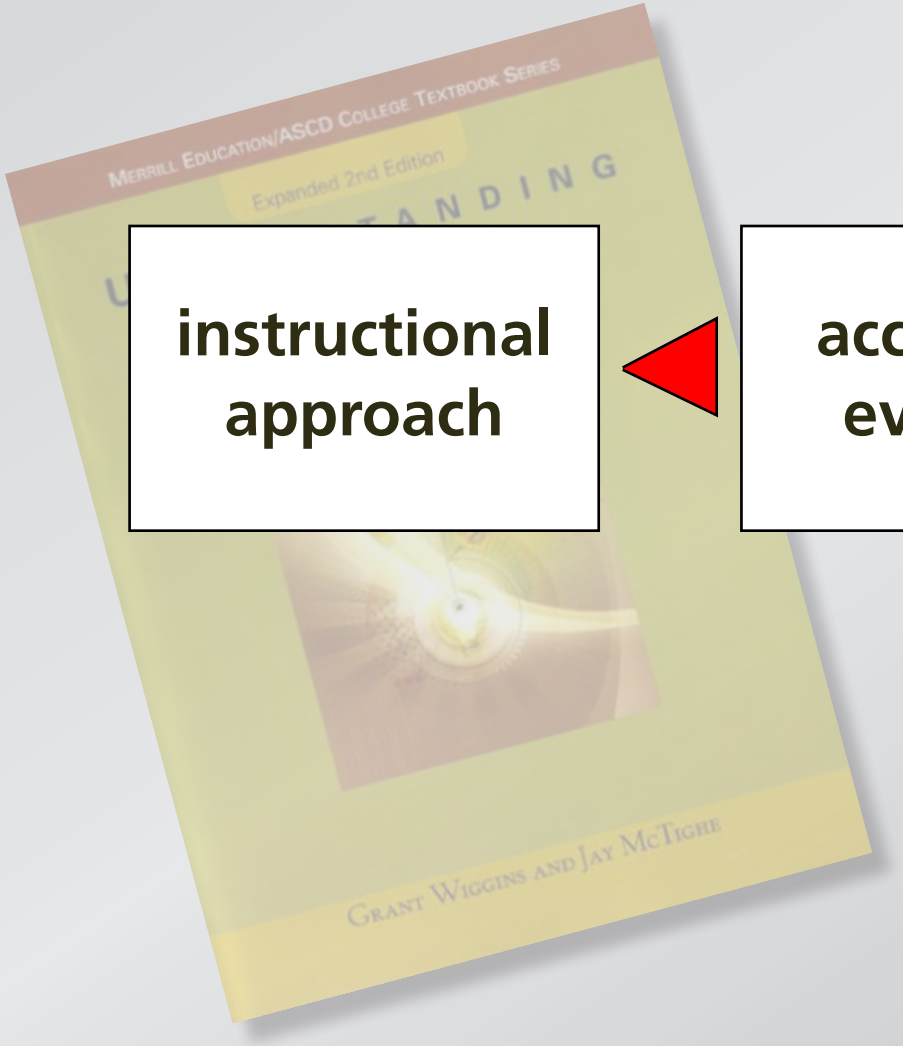


acceptable evidence

desired outcomes

Curriculum design

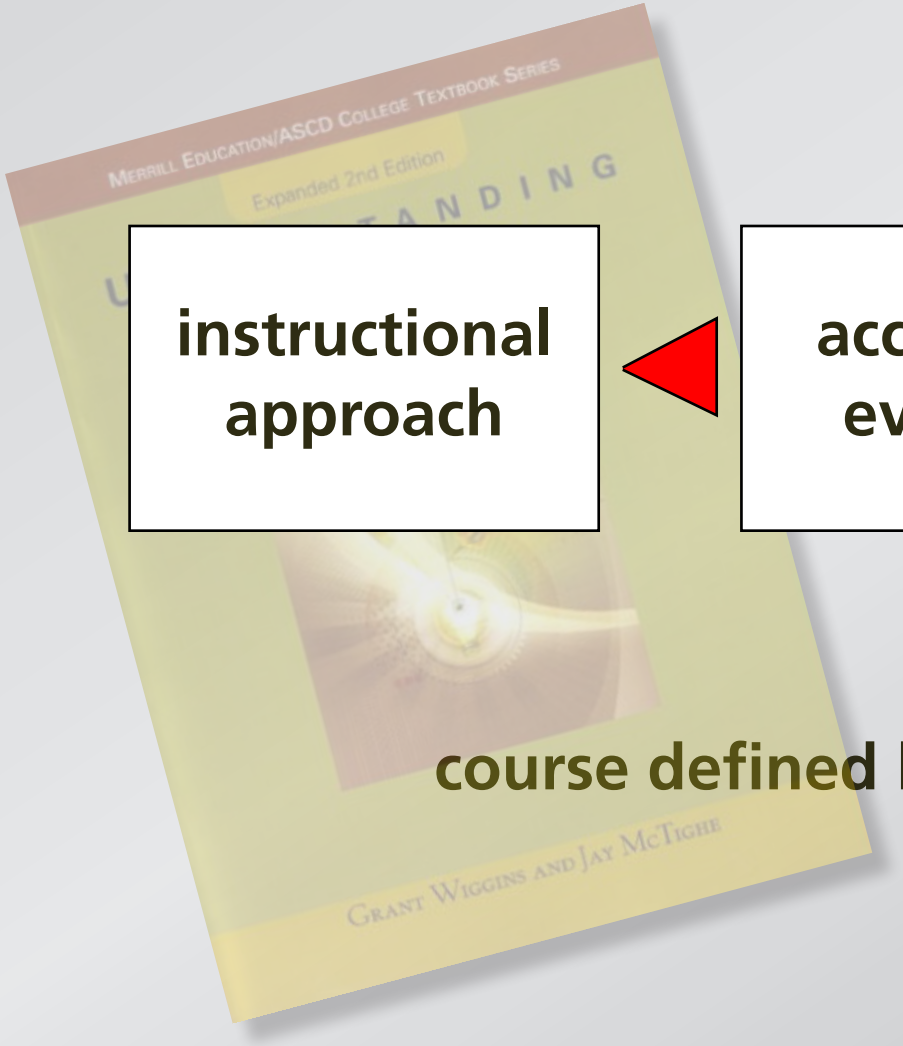
Backward design



instructional approach ◀ **acceptable evidence** ◀ **desired outcomes**

Curriculum design

Backward design



instructional approach ◀ **acceptable evidence** ◀ **desired outcomes**

course defined by desired outcomes

Assessment

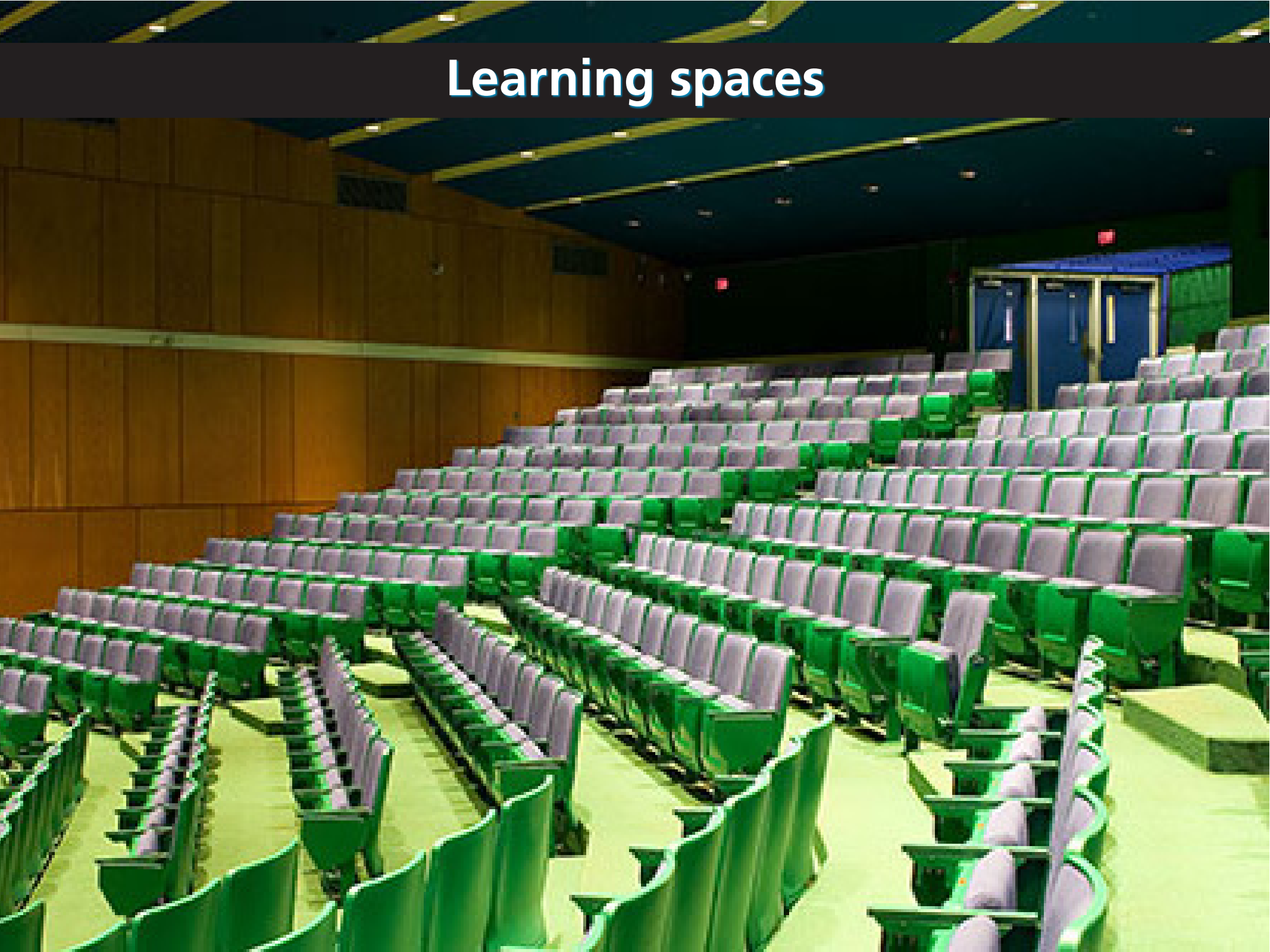
Traditional assessement

- focused on outcome, not process
- focused on individual, not group
- does not mirror future work environment

Learning spaces

Learning spaces

Learning spaces



Learning spaces

Why is change so hard?

Why is change so hard?

"There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success than to take the lead in the introduction of a new order of things, because the Innovator has for enemies all those who have done well under the old conditions, and lukewarm defenders in those who may do well under the new."

Machiavelli, *The Prince*

Why is change so hard?

changing education requires a culture change

Why is change so hard?

We will need to

- begin to learn from each other
- disseminate best practices
- make teaching part of real scholarship

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requires leadership and support

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