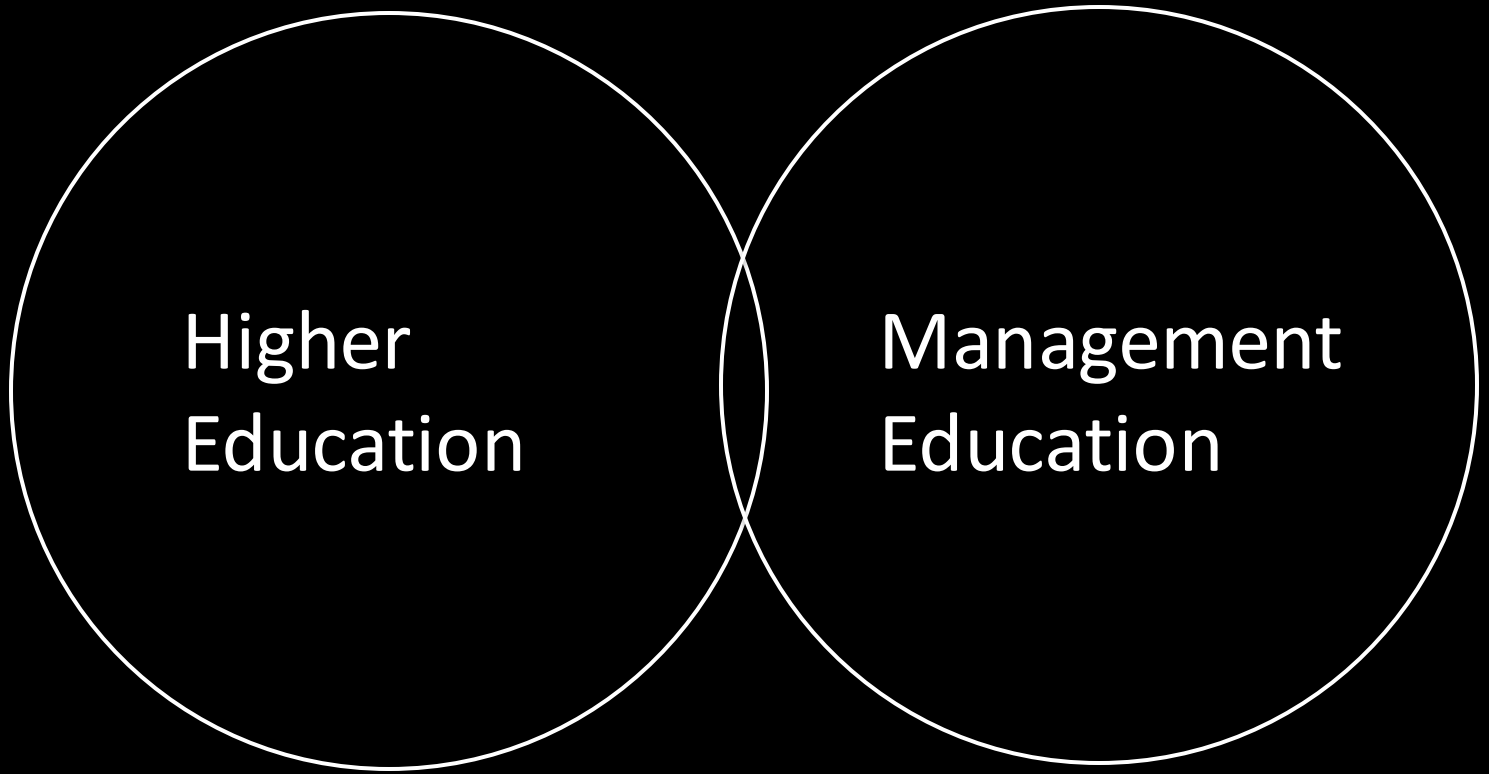
Unlocking the “AH-HA Moment”: Research-based course design

Higher education research
and
Management education research

Very limited interaction (by citation count)

Very limited appreciation of the other research area


Higher
Education
Management
Education

EFFECTS OF APPLYING THE RESEARCH

Percentage of students who really engaged with subject content

SUBJECT	CHANGE	TRADITIONAL COURSE	RESEARCH BASED COURSE
Economics	Variation Theory	30%	72%
Accounting	Variation Theory	26%	85%
Business (general)	Pedagogy	23%	82%

THE EFFECTS OF APPLYING THE RESEARCH
Percentage of students who engage deeply with the course content

SUBJECT	CHANGE	TRADITIONAL COURSE	RESEARCH BASED COURSE	SAMPLE	REFERENCE
Economics	Variation Theory	30%	72%	N1 = 181 N2 = 175	Pang & Marton, 2003
Accounting	Variation Theory	26%	85%	N1 = 177 N2 = 180	Rovio-Johansson & Lumsden, 2012
Business (general)	Pedagogy	23%	82%	N = 78	Rosier, 2022

What do management educators know about the H Ed research?

Some will remember the concept of approaches to learning, from the 1990s:

- **Surface approach – attempt to memorise**
- **Deep approach – attempt to understand**

Often regarded as a simplistic dichotomy, outdated.
"We are beyond understanding; we are teaching critical thinking".

REALLY?

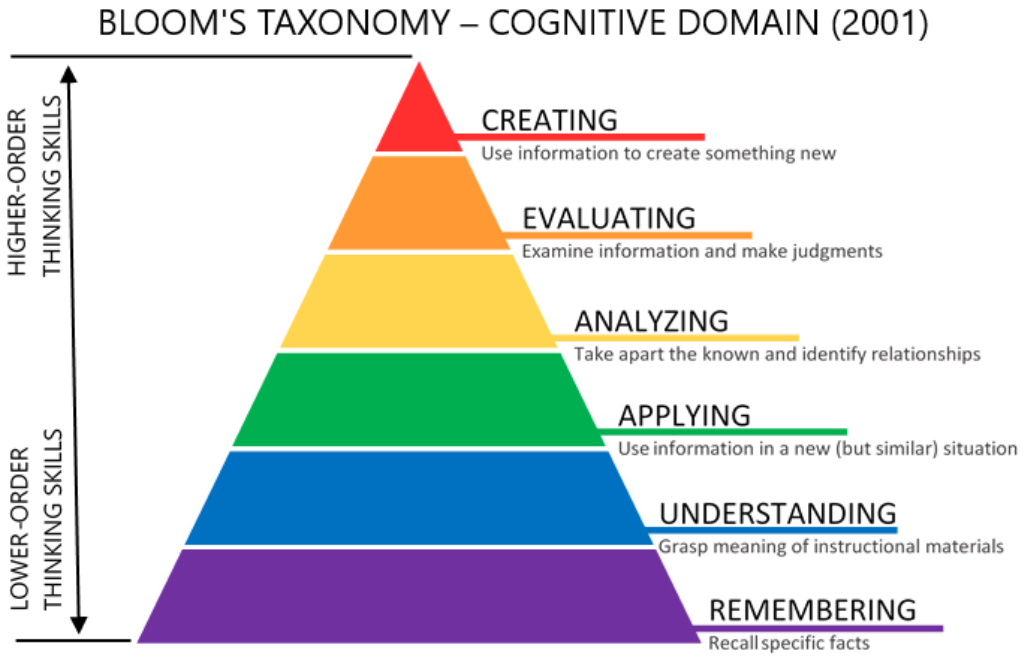
You are teaching critical thinking, using pedagogies and assessment that force students into rote learning?

Think again!

Characteristics of a deep approach to learning

- **Learning with intent and strategies to achieve a thorough understanding of the subject**
- **Interact vigorously with the content**
- **Make use of evidence, inquiry and evaluation**
- **Relate new ideas to previous knowledge**
- **Engage in critical reflection**
- **Are motivated by interest**

(Adapted from Southern Cross University Centre for Teaching and Learning and Entwistle & Peterson, 2004)


BLOOM'S TAXONOMY – COGNITIVE DOMAIN (2001)
HIGHER-ORDER THINKING SKILLS
LOWER-ORDER THINKING SKILLS
CREATING
Use information to create something new
EVALUATING
Examine information and make judgments
ANALYZING
Take apart the known and identify relationships
APPLYING
Use information in a new (but similar) situation
UNDERSTANDING
Grasp meaning of instructional materials
REMEMBERING
Recall specific facts

H Ed Research 1990 - 2024

Used the concept of approaches to learning to:

- **Better understand the student experience of learning,**
- **Develop guidelines for course design and delivery, based on that understanding**
- **Develop simple surveys to evaluate course quality, compare course designs, pedagogies, etc.**

The pertinent higher education research is based on the students' experience of learning

- Some call it "the experience of learning research"
- Biggs calls it "the student learning research"
- Based on seminal work by Marton and Säljö (1976a, 1976b)
- Key researchers: Ference Marton, John Biggs, Noel Entwistle, Paul Ramsden, Keith Trigwell, Mike Prosser
- Key concept: approaches to learning

Conversely, what do H Ed researchers know about management education practices?

Apparently very limited appreciation of case method teaching.

What are we trying to do?

What is the aim of management education? Is it:

a. **to teach theories, formulas, and methods of analysis,**

b. **to develop students' ways of thinking, or**

c. **to prepare leaders for unforeseeable challenges in an unknown future?**

Adpted from Bowden and Marton, 1998

Can we teach critical thinking and problem solving, using course design, pedagogies and assessments that promote rote learning and actually undermine deep engagement with the course content?

Constructive Alignment

All aspects of the course must be aligned to produce the desired learning outcomes

John Biggs

Factors influencing learning

1. Conceptions of learning held by students
2. Conceptions of teaching held by the teacher
3. Students' motivation to learn
4. Course design and delivery, including
    a. Pedagogy
    b. Sequencing – repetition and variation
    c. Workload
    d. Assessment

MOST OF THESE FACTORS ARE CONTROLLED OR INFLUENCED BY THE TEACHER AND THE INSTITUTION.

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This suggests that 70% or 80% of students are capable of engaging deeply with the course content.

Conceptions of learning held by students
Innate, learned or a response to the learning environment?

1. Increasing one's knowledge.
2. Memorising and reproducing
3. Memorising, for subsequent application, of facts, methods, etc.

SURFACE APPROACH

4. Understanding.
5. Seeing things in a different way
6. Developing as a person.

DEEP APPROACH

(Marton & Säljö, 2005)

Conceptions of teaching held by teachers

- **“Information Transmission – Teacher Focussed” (ITTF)**
  - **Tends to produce a surface approach in students**

- **“Concept Changing – Student Focussed (CCSF)**
  - **Tends to produce a deep approach in students**

(Prosser, Trigwell and Waterhouse, 1997)

Students' motivation to learn

- **Intrinsic or extrinsic?**
- **In Fransson's experiments, the only condition that produced a deep approach to learning in all students was:**
  - **Interest in the subject matter, and**
  - **A lack of anxiety produced by assessment or other extrinsic pressures.**

(Fransson, 1977)

Course design - pedagogy

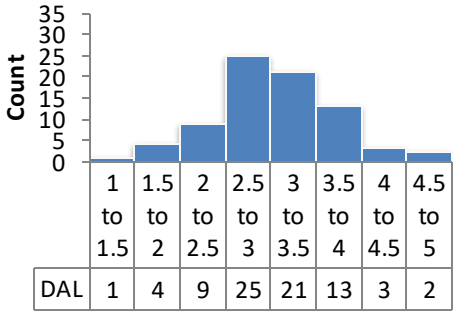
- A deep approach is fostered by student-centred pedagogies such as:
  - Case method teaching
  - Simulations
  - Industry-based projects
  - Problem based learning (PBL)
- AH-HA moments in every experience

We need empirical confirmation (conflicting results)

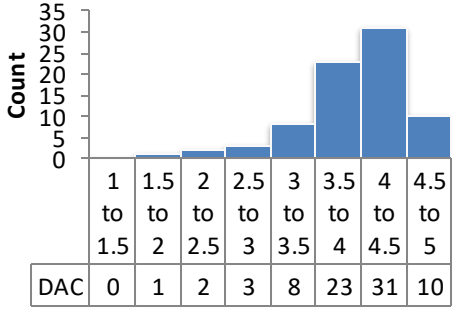
EFFECT OF PEDAGOGY ON LEARNING

Lecture (left) vs Case method (right)

DAL



DAC



The histograms show the numbers of students who scored in each range on a measure of a deep approach to learning.
DAL – Deep Approach Lecture. DAC – Deep Approach Case

Scale: 1 = no attempt at a deep approach. 5 = total focus on a deep approach

Course design – repetition and variation

- "Variatio est mater studiorum" (Marton & Trigwell, 2000)
- Variation Theory – becoming aware of something when it varies in some way from the background
  - Black cat in a snow-covered field
  - Recognising a concept in a variety of case studies, simulations etc. (repeat the concept but vary the context)
  - Applying multiple concepts to a single case or simulation (vary the concept but hold the context constant)
- Examples – Ah-HA moments

Course design - workload

- A deep approach is fostered by a manageable workload
  - Students need time for reflection (exercises?)
  - Consider the load imposed by other courses/subjects
  - Allow time for preparation and review
  - Review content - focus on threshold concepts

Course design - assessment

- **“We must confront the ways in which assessment tends to undermine learning” (Boud, 1995 p. 35)**
  - **The anxiety produced by assessment tends to push students towards a surface approach to learning.**
- **Tests of memory tend to produce a surface approach to learning.**
- **Open book exams tend to produce a deep approach to learning.**
- **Consider other forms of assessment**

Validated surveys

- The Revised Study Process Questionnaire (R-SPQ-2F) (Biggs, Kember and Leung, 2001)
- The Revised Approaches to Teaching Inventory (ATI-R) (Trigwell and Prosser, 2020)
- Others from the H Ed literature

Further research

There are very few studies applying the concepts from H Ed research to Mgt Ed research or practice.

- Evaluation of pedagogies.
- Studies of course improvement projects.
- Testing of untested assertions such as value of reflective exercises
- Studies of the effects of conceptions of teaching in business education.
- Replication studies in different conditions
- Publication opportunities in Mgt Ed journals and H Ed journals.

In summary:

The student learning research offers teachers:

- Guidelines for course design and delivery
- Simple surveys to measure the effects of changes

It offers researchers:

- Scope for further research investigating the application of concepts from H Ed research to Mgt Ed
- Validated surveys, suitable for such research projects

REMEMBER THE DRAMATIC EFFECT ON LEARNING OUTCOMES

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Key References

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May your journey lead to

“AH-HA moments”

in every class.