Surface, Strategic & Deep Approaches to Learning

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Main Points

Teaching Centric

Student Centered

Deep, Strategic and Surface Approaches to Learning

Supercomplexity

Teach Less & Learn More or (TWMS)
Surface, Strategic vs Deep Learning


Surface learners focused on parts of the article to memorize that they might be questioned on

Deep learners engaged in an active search for meaning

Strategic or Preformative learning directs effort to please authority
The thing I remember the most about my favourite teacher .........
‘The chains of habit are generally too small to be felt until they are too strong to be broken’.

Dr Samuel Johnson
1709 - 1784
communication
noun
1
2 something that communicates, e.g. a letter or message.
Structure / Discipline
Stories

You Have To Study!
- Philosophy
  - Transmit
  - Develop
  - Apprentice
  - Nurture
  - Reform

- Pedagogy
  - Lecturing
  - Socratic
  - Case/Problem
  - Community
  - Experiential

- Technique
  - Voice/Gestures
  - Learning Names
  - Peer Teaching
  - Debates, Games
  - Technology

* Pratt: Data from 40,000 taking TPI
  -> 90% identify with one or two perspectives
Bloom's Taxonomy for Thinking

- Knowledge
  - Recall
  - Understanding
  - Using knowledge in new situations
  - Breaking things down
    - Critical thinking
  - Putting things together
    - Creative thinking
- Comprehension
- Application
- Analysis
- Synthesis
- Evaluation
- Judgement

Knowledge Retention
Foundation for higher order thinking
Practice: The 7 Principles

1. Student / Faculty Contact
2. Cooperation
3. Active Learning
4. Feedback
5. Time on Task
6. High Expectations
7. Diverse Talents & Approaches

Insights from the Literature (Chickering & Gamson)
How many hours/week do you expect to study each week for this course?

A) 0 - 5
B) 6 - 15
C) 15 +
E) Other
Classroom Issues
Questions For Teaching

- How do you measure prior knowledge?
- What is your source of motivation?
- How can you give quality feedback?
- Is it important to humanize teaching?
- What about inspiration?
- How do I motivate students?
At what point do you consider a class to be large (i.e., what's the tipping point)?

A. 50 students
B. 100 students
C. > 100 students
D. When it feels large
Does class size necessarily change student learning?

A. Yes
B. No
C. Depends
Large Classes

Interactive Teaching in Physics: http://www.youtube.com/watch?v=lBYrKPoVFwg
It works!

Students Like it

and learn more

Crouch, Fagen, Callan, Mazur
What correlates most highly with teaching effectiveness?

A. Giving feedback  
B. Explaining clearly  
C. Stimulating interest  
D. Being well prepared  
E. A & C
Student Evaluations suggest 7 aspects of Effective Instruction & Quality of Learning:

1. Clarity
2. Level
3. Pace
4. Structure
5. Explanation
6. Enthusiasm
7. Empathy

Learning Environment; Feedback & Support; Outcomes & Assessments

Perry & Smart (1997)
Entwhistle, Nisbet & Bromage (2005)
ISSUES

• Teaching is not scholarship

• Roles and rewards

• Research on teaching & learning (what do we know?)

• Faculty & professional development

• Other
**Limited Learning**

- 7% gain in (a) critical thinking (b) analytical reasoning and (c) writing
- 45% show no gains in learning over 1st two years in university

**Time in Learning**

- On average, 12 hours/week; 40% reported less
- 15 hours in class; About 15% of 7 days on academics

**Expectations**

- 1/2 had not taken one course requiring more than 20 pages of writing
- 1/3 had not taken one course requiring more than 40 pages of reading

2,300 Students took the “Collegiate Learning Assessment across 24 Institutions twice (05/07)
Teaching or LEARNING?
Surface, Strategic & Deep Approaches
SURFACE:
- Fear
- Superficial
- Memorization
- Lacking Context

STRATEGIC:
- Exam Learning
- Performative
- Persistent, Clever
- Often superficial
DEEP:

- Curiosity
- Seeking Understanding
- Meaning, Reflecting
- Evaluating

Teaching Teaching & Understanding Understanding: http://www.youtube.com/watch?v=iMZA80XpP6Y
A Taxonomy (Biggs)

Prestructural
- Misses point
  - Identify
  - Do simple procedure

Unistructural
- Enumerate
- Describe
- List
- Combine
- Do algorithms

Multistructural
- Compare
- Contrast
- Explain causes
- Analyse
- Relate
- Apply

Relational
- Theorise
- Generalise
- Hypothesise
- Reflect

Extended abstract

Quantitative phase
Qualitative phase

How much do students retain?

10% of reading
20% of hearing
30% of seeing
50% of seeing & hearing
70% of talking with others
80% of using & doing
95% of what they teach someone else
Conceptions of Knowledge

Dualism
- Knowledge as Absolute
  - Multiple Perspectives
    - Provisional Knowledge
      - Evidence Used to Reason
        - Commitment to a Personal Perspective

Relativism
- Recognizing Different Forms of Knowledge & Learning Processes

Change = Learning

Conceptions of Learning

Expanding Awareness Through a Broader, Integrative Conception

Acquiring facts ➔ Memorizing ➔ Applying and Using ➔ Understanding ➔ Seeing Things in a Different Way

Source: Enwistle (2007, 129)
Perry’s Model of Intellectual Development

(Culver & Macros, 1982)
### Perry’s Model of Intellectual Development

(Baxter & Magolda, 1991)

<table>
<thead>
<tr>
<th>Phase</th>
<th>1st year</th>
<th>2nd year</th>
<th>3rd year</th>
<th>4th year</th>
<th>5th year</th>
<th>6th year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute knowing: knowledge is certain, but student doesn’t have access to it</td>
<td>68%</td>
<td>46%</td>
<td>11%</td>
<td>2%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Transitional knowing: absolute knowledge in some areas; awareness of discrepancies among experts</td>
<td>32%</td>
<td>53%</td>
<td>83%</td>
<td>80%</td>
<td>31%</td>
<td>8%</td>
</tr>
<tr>
<td>Independent knowing: knowledge is mostly uncertain; so learners equal to authorities, views as valid as teachers</td>
<td>0%</td>
<td>1%</td>
<td>5%</td>
<td>16%</td>
<td>57%</td>
<td>55%</td>
</tr>
<tr>
<td>Contextual knowing: nature of knowledge uncertain but some knowledge claims are better than others in a particular context</td>
<td>0%</td>
<td>0%</td>
<td>1%</td>
<td>2%</td>
<td>12%</td>
<td>37%</td>
</tr>
</tbody>
</table>
WE LEARN DIFFERENTLY
COGNITIVE DIFFERENCES
SUPERCOMPLEXITY & TECHNOLITERACY

- Uncertainty
- Speed and acceleration
- Complexity
- Multiculturalism
- Mobility of the population
- Conflict (social, military)
- Inter-generational tension
- Need for ethical citizenship
- Information saturation
- Proliferation of knowledge
- Globalisation
- Internationalisation
- Private /public sector tension
- Increasing panic

Characteristics of the 21\textsuperscript{st} century

- Unpredictability
- Risk
- Need for flexibility and agility
- Entitlement v responsibility
- Scarcity of resources
- Austerity
- Sustainability
- Need for prudence
- Transparency & accountability
- Discontinuity and rupture
- Shifting paradigms
- Poverty v affluence
- Outsourcing of jobs
- Youthfulness

With Permission from R. Land. ISSOTL Liverpool Presentation, October, 2010
What stimulates learning?

- First year experience
- Learning communities
- Collaborative projects
- Undergraduate research
- Big Issues
- Community-based learning
- Internships

Entwistle (2010)
Student Characteristics

Abilities, Knowledge & Learning Processes
- Influence of Family, Teachers, Mentors
- Intelligence & Profile of Abilities
- Subject knowledge/skills

Motives, Feelings & Organized Effort
- Identity & Self Confidence
- Personal & Vocational Goals
- Influences of Family, Friends, etc.

Interest & Willingness
- Conception of Knowledge/Learning
- Motivation and Work Habits

Monitoring Learning & Studying
- Approaches to Learning
- Study Organization & Effort

Awareness of Learning Opportunities

Judging Personal Understanding Against Target

Perceptions of Meaning & Relevance

Integrated Personal Understanding & Ways of Thinking

Entwistle (2010)
Real learning requires stepping into the unknown, which initiates a rupture in knowing...

By definition, all scholarship is concerned (directly or indirectly) with encountering the unknown.

Schwartzman 2010 p.38
There are...

“Conceptual gateways”

“portals”
...that lead to a new way of understanding, a transformed internal view of subject matter, subject landscape, or even world view...

without which the learner cannot progress
“Considering the evidence of current research on teaching...involves seeing the purpose of higher education beyond the acquisition of knowledge and skills; to recognize that the demands of current society and employment, graduates need to have acquired a personal (and deep) conceptual understanding of the main ideas and thinking in their area of study so as to experience **learning that lasts**.

Only this will provide flexibility in applying knowledge, skills, and understanding that will suffice at a time of rapid change and **supercomplexity** in dealing with emerging issues and new problems.”
Resources

Teaching Large Undergraduate Classes: A guide for faculty and teaching assistants [http://citl.gwu.edu/pdf/LargeClasses.pdf]

Teaching Large Classes: A video by Graham Gibbs [http://videtis.ucis.dal.ca/clt/all_fcp.mov]

Preparing to Teach the Large Lecture Course by Barbara Gross Davis [http://teaching.berkeley.edu/bgd/largelecture.html]

Beating the Numbers Game: Effective teaching in large classes by Felder [http://www4.ncsu.edu/unity/lockers/users/f/felder/public/Papers/Large classes.htm]
Education is “the kindling of a flame, not the filling of a vessel”.

Socrates (380 BC)

Learning is “… not filling a bucket… but the lighting of a fire”

Yeats (1893)
Thank you!