Teaching by Example
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Teaching with Examples

- Develop/clarify concepts
- Support abstract ideas
- Illustrate scenarios
- Inform/persuade students
Exemplary Pedagogy

Typically: General rule > then illustrate with example
Bloom’s Taxonomy

- Evaluation
- Synthesis
- Analysis
- Application
- Comprehension
- Knowledge
Teaching by Exemplification
Teaching by Examples

- More interesting to students
- Promotes active/engaged learning (interruptions)
- Participatory
- Provides learning scaffold
See the Forest for All the Trees
Teaching by Exemplification
Bluffing Threat Displays
Honest Signaling

Fig. 6.28

(A) Image of a lizard

(B) Scatter plot showing the relationship between endurance capacity (seconds) and the number of pushups.
Come-and-Get-Me Behaviours
Mobbing Behaviour
Testing the Prediction

Fig. 5.3

Black-headed gull

Probability that crow will be subject to >10 attacks by gulls per minute

Percentage of successful predation attempts

Zone

A
Outside colony

B
Border

C

D
Inside colony

E

100

50

0

100

50

0

-
Chick Begging
Cost of Begging

Fig. 4.32
Studies of Exemplification

- Michener (1978)
  - Start-up examples: intro to new theory/concepts
  - Reference examples: widely applicable standard cases
  - Model examples: generic cases that summarize
  - Counter examples: show that conjecture is false
Teaching and Learning with Examples

Echo 360
Podcast Analysis
Data Analysis

- Intra-example features
  - Design and structure

- Inter-example features
  - Sequencing and arrangement
Data Analysis – Intra-example

- Focus
  - What example is about

- Involvement
  - Degree of personal involvement
Data Analysis – Student Experience

- Individual surveys
- Focus group interviews
- Written artifacts
Typology of Exemplification

**Procedural Exemplification**
- **Focus:** Research Design, Experimental approaches
- **Form:** Abstract representations (schematics, drawings)
- **Function:** Introduction to methods, Methodological evaluation, Generation of methodological understanding

**Conceptual Exemplification**
- **Focus:** Application of biological principles
  - Convergent: general → specific
- **Form:** Realistic pictures, videos
- **Function:** Explaining observations, Entertaining hypotheses, Posing research questions, Generation of conceptual understanding

**Analytical Exemplification**
- **Focus:** Derivation of biological concepts and principles
  - Divergent: specific → general
- **Form:** Pictures and graphs
- **Function:** Evidence-based claiming, Scientific argumentation, Generation of analytical understandings

*Involvement: Participant Examples
Detachment: Impersonal Examples*
Questions?