Predator and Prey: Active Learning Is Social Learning

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Typically part of the curriculum...

• in biology, phrenology, biology, anatomy, craniometry, physiognomy, crime scene & forensic anthropology, art...

• I have used this activity with elementary school students through undergraduates all in humanities settings, and

• informally as part of nature awareness, biology workshops.

• Formally as a critical thinking activity, to encourage collaboration, teach research methods - but the learners will also learn something about the skulls and species.

• When I use the activity to teach about osteology, it is an active way to involve the learners in critical thinking. Groups quite naturally are active and become social in the process.
MEET THE MODERN LEARNER

As training moves to more digital formats, it's colliding with new realities in learners’ jobs, behaviors, habits, and preferences.

Today's employees are overwhelmed, distracted, and impatient, flexibility in where and how they learn is increasingly important. They want to learn from their peers and managers as much as from experts. And they're taking more control over their own development.

OVERWHELMED...

41% of time workers spend on things that offer little personal satisfaction and do not aid their development.

Distracted...

Knowledge workers are constantly distracted with millions of websites, apps, and video clips.

IMPATIENT...

Workers now get interrupted as frequently as every 5 minutes—initially, often by work applications and collaboration tools.

1% of a typical workweek is all that employees have to focus on training and development.

UNTETHERED

Today’s employees find themselves working from several locations and structuring their work in nontraditional ways to accommodate their lifestyles. Companies are finding it difficult to reach these people consistently and even harder to develop them efficiently.

ON-DEMAND

Employees are accessing information—and learning—anytime, anywhere. Most are looking for answers outside of traditional training and development channels. For example:

- People are increasingly turning to their mobile phones to find job-related answers to on-the-spot problems.
- To learn what they need for their jobs, employees search
  - videos online courses

COLLABORATIVE

Learners are also developing and accessing personal and professional networks to obtain information about their industries and professions.

- ~80% of workforce learning happens on the job interactions with peers, teammates, and managers.
- Learn what they know
- Asking other people
- At Google: 55% of learning sources are derived from an ecosystem of 2,000+ peer learners

EMPOWERED

Rapid change in business and organizations means everyone needs to constantly be learning. More and more people are looking for options on their own because they aren't getting what they need from their employers.

- 62% of IT professionals who reported they paid for training out of their own pockets.
- 38% of workers who say they have opportunities for learning and growth at their workplace.
- 2½ years of many in crucial skills
- Half-life (in years) of many job critical skills
Reg Revans (1982) as **action learning**

Having students do more than passively listening by being actively or experientially involved in the learning process.

Students read, write, discuss, be engaged in solving problems, and engaging in higher-order thinking tasks such as analysis, synthesis, and evaluation.

A very simple definition is having students doing things and thinking about the things they are doing.

Critical Thinking Is…

• "Seeing both sides of an issue." -- Daniel Willingham

• "An ability to use reason to move beyond the acquisition of facts to uncover deep meaning." -- Robert Weissberg

• "A reflective and reasonable thought process embodying depth, accuracy, and astute judgment to determine the merit of a decision, an object, or a theory." -- Huda Umar Alwehaibi

• "Self-guided, self-disciplined thinking which attempts to reason at the highest level of quality in a fair-minded way." -- Linda Elder

Is that it? These are some outcomes of critical thinking. Critical thinking is the application of logic & reasoning to thought. Though it is often treated as a thought process, in practice it is often an active learning process.
Basic Prior Knowledge
Predator & Prey

- **Predator** = an animal that kills other animals for food and/or eats carrion. Predators are carnivores or omnivores.
- **Prey** = animals that are eaten by other animals. Prey animals may be carnivores, herbivores or omnivores.
  - Example: A mountain lion kills a deer. The lion is the predator and the deer is the prey.
- **Predator and Prey** = an animal that eats other animals but may also be eaten by other animals.
  - Example: A cat kills a mouse — the cat is predator. A coyote kills the cat — the cat is prey.
TEETH
- Incisors = ?
- Diet?
- “canine” = dog, but humans and others have canine teeth

ORBIT
- Size = ?
- Forward/side
- ?

BULLA
- Size & Position (minus ears)
- NASAL (minus nose)

SCALE
- Body ratio *
- Shape

* Large animals usually have larger brains than smaller animals, but the relationship is not linear. Small mammals such as mice may have a brain/body ratio similar to humans, while elephants have a comparatively lower brain/body ratio.
1. Understand the logical connections between ideas.
2. Identify, construct, and evaluate arguments.
3. Detect inconsistencies and mistakes in reasoning.
4. Solve problems systematically.
5. Identify the relevance and importance of ideas.
6. Reflect on the justification of one's own beliefs.
ACTIVITY
followed by debriefing
Identify
# Debriefing

**What did you do?**
- Examine skulls for the 4 qualities
- ?

**And what might you have done?**
- Take a photo & use reverse image search
- ?
Understand the logical connections between ideas.

Identify, construct, and evaluate arguments for the animal identified.

**DEBRIEFING (for critical thinking)**

What were the inconsistencies and mistakes in your reasoning?

Did you solve the problems systematically?

What methods did you employ?

What were the most relevant ideas?

*Reflect on the justification of your conclusions.*
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