ADULT INTELLIGENCE AND WISDOM: How can adult development theories help us better understand adult learners?

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1. Brief history of the concept of intelligence
2. The measurement perspective on intelligence
   - Fluid vs. crystallized intelligence
   - The theory of triarchic intelligence
3. The perspective approach to intelligence
   - Piaget and postformal operational thought
   - Perry and dualistic → committed thinking
4. The contextual approach to intelligence
   - Wisdom
   - Sternberg’s Adaptive Behavior Checklist
5. What we know about adult intelligence
   - The Seattle Longitudinal Study
   - Task complexity
Binet and Simon developed first scale in 1905—mainly used to test children (Schaie & Zanjani, 2006)

Started testing adults during World War I (Aiken, 1998)

Since then intelligence and IQ have become “real” constructs in our culture

BUT, they are not real. IQ is latent: you cannot measure it directly, so you measure things you think it is related to.
The Measurement Perspective

- One way to look at intelligence: something we can measure

- A common distinction (Horn & Cattell, 1967):
  - FLUID INTELLIGENCE: on-your-feet processing speed and ability not related to prior knowledge
    - Begins to diminish in middle age and beyond
  - CRYSTALLIZED INTELLIGENCE: accumulated knowledge over the course of your life
    - Generally improves in middle age and beyond, especially the ability to look at things from many different angles
Let’s test your fluid intelligence. You have 10 seconds to memorize this sequence:

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Now memorize this story:

With hocked gems financing him, our hero bravely defied all scornful laughter that tried to prevent his scheme.

"Your eyes deceive," he had said. "An egg, not a table correctly typifies this unexplored planet."

Now three sturdy sisters sought proof forging along, sometimes through calm vastness yet more often over turbulent peaks and valleys.

Days became weeks as many doubters spread fearful rumors about the edge.

At last from nowhere welcome winged creatures appeared signifying momentous success.
The Measurement Perspective

- Fluid intelligence is nothing without crystallized intelligence, also thought of as EXPERTISE.
- A problem with measuring this? Incredibly culturally biased: tested with verbal measures assuming your expertise lies in formal, standard English.
Sternberg’s theory of triarchic intelligence subdivides crystallized intelligence into creative and practical:

<table>
<thead>
<tr>
<th>Type of Intelligence</th>
<th>Description</th>
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<tr>
<td>Analytical</td>
<td>solve familiar problems by using strategies that manipulate the elements of a problem or the relationship among the elements (e.g., comparing, analyzing)</td>
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<tr>
<td>Creative</td>
<td>solve new kinds of problems that require us to think about the problem and its elements in a new way (e.g., inventing, designing)</td>
</tr>
<tr>
<td>Practical</td>
<td>solve problems that apply what we know to everyday contexts (e.g., applying, using)</td>
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Drawn from: http://www.edpsycinteractive.org/topics/cognition/intell.html
Part of creative intelligence? *Divergent thinking*

Think of as many uses as possible for a spoon. (90 seconds)

- Fluency (number of ideas)
- Originality (have others used it this way that you know of?)
- Flexibility (e.g., are they all things to wear? Then not flexible)
The Measurement Perspective

- Measuring practical intelligence:
  - Ask students to report on real-life solutions to real-life problems.

- How do you encourage the development of analytical, creative, and practical intelligence?
The Perspective Approach

- Based on Piaget:
  - *Formal operational thought* (hypothetical and deductive reasoning) vs. *postformal operational thought* (shades of meaning)
The Perspective Approach

Perry (1970):

1. **Dualism**: Knowledge is “out there,” teachers have it and learners need to get it from them.
2. **Multiplicity**: Experts don’t have all the answers, so learners accept anything, no matter the source, no matter how contradictory.
3. **Relativism**: Learners realize that although truth is relative, different contexts may require different belief decisions.
4. **Commitment within relativism**: Learners commit to beliefs in a relativistic world.

How do you move students through these stages? Examples of students at different stages?
The Contextual Approach

- What about most of real life where there are no clear answers?!

- Wisdom (Berg & Sternberg, 2003):
  - Balancing interests:
    - Self-interest
    - Others’ interests
    - Institutional interests

  - Environment:
    - Adapt self to environment
    - Adapt environment to self
    - Change environment totally
Wisdom and Sternberg’s Adaptive Behavior Checklist

Which of these do you work on in classes you teach?

Verbal ability:
- Speaks clearly and articulately and is verbally fluent
- Converses well
- Is knowledgeable about a particular area of subject matter
- Studies hard
- Reads widely with high comprehension
- Writes without difficulty
- Sets aside time for reading
- Displays good vocabulary

This and the following 2 slides are drawn from: http://www.edpsycinteractive.org/topics/cognition/intell.html
The Contextual Approach

- Practical problem-solving ability:
  - Which of these do you work on in classes you teach?
    - Reasons logically and well
    - Identifies connections among ideas
    - Sees all aspects of a problem
    - Keeps an open mind and responds thoughtfully to others’ ideas
    - Sizes up situations well
    - Gets to the heart of problems
    - Interprets information accurately
    - Makes good decisions
    - Goes to original sources for basic information
    - Poses problems in an optimal way
    - Is a good source of ideas
    - Perceives implied assumptions and conclusions
    - Deals with problems resourcefully
The Contextual Approach

- Social competence:
- Which of these do you work on in classes you teach?
  - Accepts others for what they are
  - Admits mistakes
  - Displays interest in the world at large
  - Is on time for appointments
  - Has social conscience
  - Thinks before speaking and doing
  - Makes fair judgments
  - Assesses well the relevance of information to a problem at hand
  - Is sensitive to other people's needs and desires
  - Displays interest in the immediate environment
Another great wisdom resource is Ardelt’s free online wisdom scale:

What We Know

- Schaie’s Seattle Longitudinal Study:
  - 1956-2005
  - Participants are currently 22 to 101 years old
  - 6,000 participants total
  - See [http://www.uwpsychiatry.org/sls/](http://www.uwpsychiatry.org/sls/) for more info
What We Know

1. There is **no uniform pattern** of intellectual development—everyone is different
   - IQ is not a useful construct for change in adulthood
2. “Replicable” decline in intelligence doesn’t happen before age 60
   - Numeric ability generally declines first (peaks in 30s)
   - Verbal ability generally declines last (peaks in 60s)
3. There are generational differences in decline
   - Positive environments slow decline
   - Intellectual stimulation slows decline
What We Know

- We need to ask our students to engage in complex tasks to aid intellectual development:

- What level of task complexity do you demand?
  - Unfamiliar and new experiences?
  - Large information load (holding several things in the mind at once)?
  - Interrelated information?
  - Multiple constraints on a solution?
  - Encouraging creative solutions (i.e., are the endpoints multiple and open-ended?)

(Drawn from Campbell, 1988)
Acknowledgement

- This presentation draws heavily from a review of adult intellectual development written by Cynthia Campbell in 2007.
- This presentation was her idea.
- I blame her and thank her in equal measure (well, probably more thank than blame!) 😊
References


