Introduction

- Cognitive development refers to the change in thinking patterns that occurs as one grows older.

- Much of the earlier work on cognitive development in adulthood has been grounded primarily in the work of Piaget.

Theory of Cognitive Development

- The growth of intelligence, which for Piaget, meant the ability to more accurately represent the world and perform logical operations on representations of concepts grounded in the world.

- The theory concerns the emergence and acquisition of schemes of how one perceives the world—in “developmental stages”, times when children are acquiring new ways of mentally representing information.
The theory is considered "constructivist", meaning that we construct our cognitive abilities through self-motivated action in the world.

Other theories:
- Nativist theories -- describe cognitive development as the unfolding of innate knowledge and abilities
- Empiricist theories -- describe cognitive development as the gradual acquisition of knowledge through experience

Piaget's Schemes
- Children use to understand the world through four main periods, roughly correlated with and becoming increasingly sophisticated with age:
  - Sensorimotor period (years 0–2)
  - Preoperational period (years 2–7)
  - Concrete operational period (years 7–11)
  - Formal operational period (years 11–adulthood)

Formal operational stage
- Commences at around 11 years of age (puberty) and continues into adulthood.
- It is characterized by:
  - acquisition of the ability to think abstractly
  - reason logically and draw conclusions from the information available.
- During this stage the young adult is able to understand such things as love, "shades of gray", logical proofs, and values.
Jean Piaget's provided the foundation for other models of cognitive development.

- Neo-Piagetians recognized that people could use formal operational thought in one context and concrete operational thought in another. Hence, cognitive change was not systemwide but localized.
- Second, they introduced the idea of postformal thought; that is, there is development past formal operations.
- These discoveries have implications for adult educators.
  - Adult educators now know that cognitive development occurs in adulthood and that learning affects this development.
  - In addition, the importance of context in adult learning is acknowledged.

Perry's Developmental Scheme

- Used the most often in the study of young adults, most of whom have been college students.
- Based on a study of the thinking patterns of Ivy League White male college students, Perry proposed a model of cognitive development consisting of nine positions, each position representing a qualitatively different way of interpreting learning experiences.

Perry's Scheme for Cognitive Development

- In Stages 1 or 2 (Dualism), students may resist learning information that challenges their established beliefs.
- In Stages 3 and 4 (Multiplicity), students may argue that their answers are just as valid as a teacher's answers for a subjective topic.
- In Stage 5 (Relativism and Procedural Knowledge), students begin to realize that valid disciplinary reasoning methods exist.
- In Stage 6, students begin to realize that they must make choices and commit to solutions and ways of life.
Perry's positions have been used to describe how people view instructors' roles and their own roles as learners.

- Learners at the lowest positions, for example, tend to view instructors as authority figures; their job as learners is to filter out the right answers from the material presented.
- Those at the higher end (if the continuum view knowledge in a contextual sense and search or relationships between ideas; they see instructors more as guides.

In sum, Perry's cognitive development model . . .

- Suggests that individuals move from dualistic (right-wrong) thinking toward dialectical thinking, where student are able to hold contradictory notions in their mind.
- Recent studies have indicated that the model may not account for cultural differences.
- Further, some studies show that older adults may show more dualistic thinking than younger adults.

King and Kitchener: 
Reflective Judgment Model

- Based on Perry's (1970) work
- The current model, there is a progression of seven distinct sets of epistemic assumptions about knowledge and how knowledge is acquired; each set has its own logical coherency, and is called a stage.
- Each successive stage is "posited to represent a more complex and effective form of justification, providing more inclusive and better integrated assumptions for evaluating and defending a point of view."
Reflective Judgment Model Stages

- **Stage 1:** Students use single, undifferentiated categories; no justification concept is needed because there is assumed to be an absolute correspondence between what is believed to be true and what is true. Students do not see discrepancies between two views or see that two people disagree on an issue.

- **Stage 2:** There is a true reality that can be known with certainty but is not known by everyone. Certain knowledge is seen as the domain of authorities, and those who disagree with authorities are wrong. Defending one's point of view is not done to explain the reasons for beliefs but rather to show (by stating them) that one's own beliefs are right and those who believe otherwise are wrong.

- **Stage 3:** Although in some areas even authorities may not have the truth, at some point in the future there will be knowledge from concrete data. In cases where authorities do have answers, beliefs continue to be justified on the basis of the word of an authority.

- **Stage 3:** This stage involves further differentiation of stage 2 categories into simple concrete systems. Where authorities do not know, people can believe what they want. Assumptions do not reflect an understanding of evidence as an abstraction, a relational concept.
Stage 4: This is the first of the quasi-reflective stages. One cannot know with certainty, and there is the emergence of knowledge as an abstraction, not limited to concrete instances. However, knowledge and justification remain poorly differentiated from each other.

Although students may acknowledge that opinions do not form sufficient basis for developing an argument, “they are not consistent in their use of evidence for this purpose”. Students are likely to be unable to differentiate a theory from evidence for the theory, thus “they cannot perform the necessary mental operations that would allow them to evaluate the theory on its own merits”.

Stage 5: While people may not know with certainty or directly, what is known is always limited by the perspective of the knower—a position sometimes referred to as relativism. The underlying concept of this stage is the ability to relate two abstractions.

In this stage, students can differentiate an event from the interpretation of the event. However, knowledge remains context-bound—the individual has not yet developed the ability to relate several abstractions into an abstract system. Students do recognize that there are alternate theories and that some evidence does not support one theory, but what is missing is “the ability to coordinate the two in a well-reasoned argument”.

Stage 6: Knowing is a process that requires action on the part of the knower, and that knowledge must be understood in relationship to context and evidence.

Students are now able to coordinate the subtle similarities and differences of abstract relationships into intangible systems; they make decisions on the basis of compelling evidence rather than for idiosyncratic reasons.
Stage 7: While "reality is never a given, interpretations of evidence and opinion can be synthesized into epistemically justifiable conjectures about the nature of the problem under consideration".

People in Stage 7 take on the role of inquirers; they are agents involved in constructing knowledge; they recognize that their knowledge claims may later be superseded by others. There also is an ability to integrate several Stage 6 systems (knowledge and justifications about scientific issues, social science issues, etc.) into a general framework about knowing and justification. This allows for a generalization of assumptions and a clarity of judgment that were not present at Stage 6.

Belenky, Clinchy, Goldberger, and Tarule: Women's Ways of Knowing

1. Silence -- a position in which women experience themselves as mindless and voiceless and subject to the whims of external authority.

   They are passive, feel incompetent, and are defined by others.

2. Received knowledge -- a perspective from which women conceive of themselves as capable of receiving, even reproducing, knowledge from the all-knowing external authorities but not capable of creating knowledge on their own.

   They listen to the voices of others; their world is literal and concrete, good or bad.
3. Subjective knowledge -- a perspective from which truth and knowledge are conceived of as personal, private, and subjectively known or intuited.

The locus of truth shifts to the self; intuition is valued over logic and abstraction; here women begin to gain a voice. Half the women in the study were in this category.

4. Procedural knowledge -- a position in which women are invested in learning and applying objective procedures for obtaining and communicating knowledge.

This position takes two forms:
- separate knowing -- the self is separate from the object of discourse, making it possible to doubt and reason
- connected knowing -- there is intimacy and equality between the self and the object of discourse, based on empathetic understanding.

5. Constructed knowledge -- a position in which women view all knowledge as contextual, experience themselves as creators of knowledge, and value both subjective and objective strategies for knowing.

This stage is characterized by the development of an authentic voice.
In the review of the many theories of adult cognitive development, two major themes became apparent:

- Dialectical thinking is important
- Contextual factors are critical in determining how we develop our thinking patterns as adults.

Dialectical thinking allows for the acceptance of alternative truths or ways of thinking about the many contradictions and paradoxes that we face in everyday life.

To be able to engage in dialectical thinking is viewed by some as the only way to navigate our postmodern world successfully.

Bringing in the contextual perspective on adult cognitive development acknowledges that the world around the thinker makes a difference in how adults develop their thinking patterns.

Social, cultural, economic, and political forces help shape both how we think and what kind of knowledge we value.
Wisdom

- Despite the different perspectives from which wisdom is viewed, scholars seem to agree that wisdom involves special types of experience-based knowledge and is characterized by:
  - the ability to move away from absolute truth
  - to be reflective
  - to take action for the common good
  - to make sound judgments related to everyday life.

Assignment

- Read Chapter 14 -- Send in Annotation
- Portfolio of Learning Activities 1-7 due
  - That means dropped off at the site that day
  - For Video-Stream students . . . Emailed to me that day.