Individual Differences: Intelligence, Cognitive and Learning Styles, and Creativity
The Big Picture

- What is intelligence?
- What can a teacher do to make students more intelligent?
- Should teachers adapt to differences in intelligence by grouping students according to ability level?
- What is creativity, and how does it differ from intelligence?
- How can teachers encourage and develop creativity in their students and in themselves?
Characteristics of Creative Individuals

- See problems in new ways
- They persevere when presented with an obstacle.
- Like being creative
- Are open to new experiences
- Are willing to take sensible risks
- Are intrinsically motivated
- Seek out supportive environments
Teaching Students of Varying Levels: Ability Grouping

- Ability Grouping
  - Within-Class Ability Grouping
  - Between-Class Ability Grouping
  - Regrouping
    - Joplin Plan
  - Advantages and Disadvantages
Creativity in your classroom

- Model creativity
- Encourage your students to make assumptions and then question them.
- Encourage sensible risk taking
- Promote persistence
- Allow mistakes
- Provide time and space for students to be creative.
Does creativity differ from intelligence?
What is Intelligence?

- Intelligence
  - capacity for goal-directed and adaptive behavior
What is Intelligence?

- IQ is a score on a test
  - it is not something you have
- Is intelligence singular or multiple abilities?
Are There Multiple Intelligences?

- **Factor Analysis**
  - statistical procedure that identifies clusters of related items (called factors) on a test
  - used to identify different dimensions of performance that underlie one’s total score

- **General Intelligence (g)**
  - factor that Spearman and others believed underlies specific mental abilities
  - measured by every task on an intelligence test
Theories of Intelligence

- Spearman vs. Thurstone
  - “g” or multiple components??

- Sternberg’s Triarchic Theory
  - Analytical Intelligence
    - (book smarts)
  - Creative Intelligence
    - (novel ideas)
  - Practical Intelligence
    - (street smarts)
**Componential Subtheory**
- Metacomponents—used to decide what to do, monitor it while it is being done, and evaluate it after it is done.
- Performance components—used to get things done.
- Knowledge acquisition components—used to learn how to get things done.

RESULT:
**Analytical abilities:** Abilities to analyze, judge, evaluate, compare and contrast.

**Contextual Subtheory**
- Adaptation to existing environments.
- Shaping of existing environments to modify them.
- Selection of different environments.

RESULT:
**Practical abilities:** Abilities to put into practice, apply, use, and implement.

**Experiential Subtheory**
- Solving relatively novel problems.
- Automatization

RESULT:
**Creative abilities:** Abilities to create, discover, invent, imagine, and explore.
Theories of Intelligence

- Gardner’s Multiple Intelligences
  - logical/mathematical
  - linguistic
  - spatial
  - musical
  - bodily kinesthetic
  - interpersonal
  - Intrapersonal

- Talent v. Intelligence??