

Chapter Four



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?

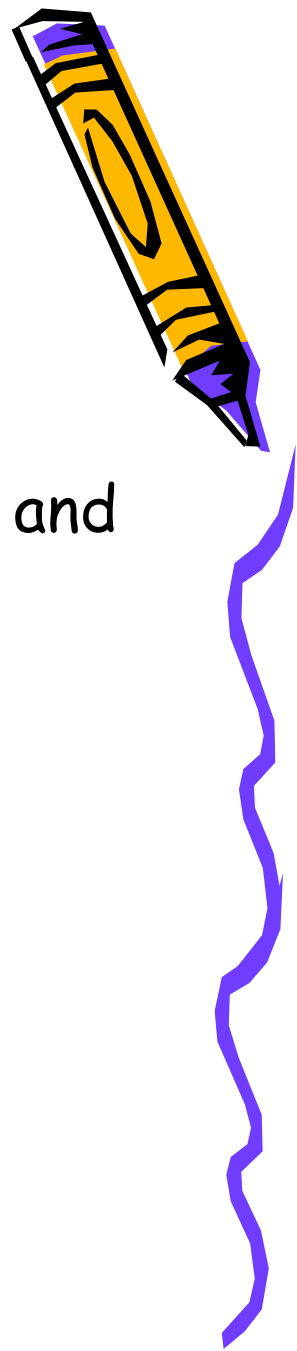
Characteristics of Creative Individuals

- ❑ 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

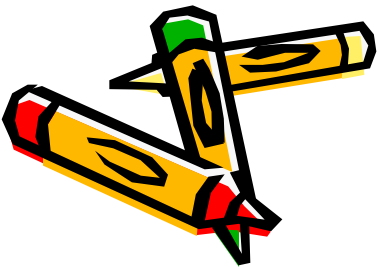
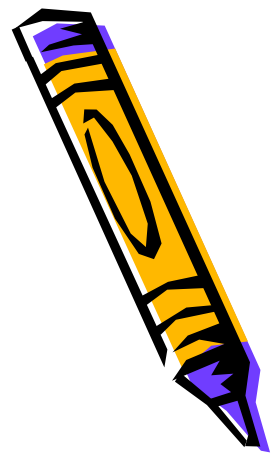
Creativity in your classroom



- 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??