2/20/2008

Thinking



Module 29

Thinking

Thinking or *cognition* refers to a process that involves knowing, understanding, remembering and communicating.

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Insight

Insight involves sudden novel realization of a solution to a problem. Humans and animals use insight.

Coin problemRemote Associations



Problem Solving

Algorithms:

Heuristics:

Representativeness Heuristic

Judging the likelihood of things or objects in terms of how well they seem to represent, or match a particular prototype.

Availability Heuristic

We make a judgment based on what we can remember, rather than complete data. In particular, we use this for judging frequency or likelihood of events.

△Letter "k" question

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Fixation

Fixation: Inability to see a problem from a fresh perspective. Impediment to problem solving. Two examples are *mental set* and *functional fixedness*.

The Matchstick Problem: How would you arrange six matches to form four equilateral triangles?



Mental Set

A tendency to approach a problem in a particular way especially a way that has been successful in the past.

#A number puzzle#Dot Problem#Orc's and Hobbits

Functional Fixedness

A tendency to think only of the familiar functions for objects.





Modules 31-33



What is Intelligence?

#Intelligence

Capacity for goal-directed and adaptive behavior

involves certain abilities

 \mathbf{X}

X

X

What is Intelligence?

₩IQ is

₭Is intelligence singular or multiple abilities?

Theories of Intelligence

Spearman vs. Thurstone ⊠"g" or multiple components??

Sternberg's Triarchic Theory

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Are There Multiple Intelligences?

% Factor Analysis

➡statistical procedure
➡used to identify

#General Intelligence (g)

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Theories of Intelligence



Origins of Intelligence

%Intelligence Test

△a method of assessing an individual's mental aptitudes and comparing them to those of others, using numerical scores

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Origins of Intelligence Testing

#Mental Age

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Origins of IQ

#Intelligence Quotient (IQ)

△defined originally as

 \square IQ = ma/ca x 100 on contemporary tests

Assessing Intelligence

The Normal Curve



Assessing Intelligence

Stanford-Binet

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⊠revised by Lois Terman at Stanford University

Assessing Intelligence

Wechsler Adult Intelligence Scale (WAIS)
Most widely used intelligence test
Subtests
verbal
performance (nonverbal)

Assessing Intelligence-Sample Items from the WAIS

VERBAL	PERFORMANCE
General Information Similarities Arithmetic Reasoning Vocabulary Comprehension Digit Span	Picture Completion Picture Arrangement Block Design Object Assembly Digit-Symbol Substitution

From Thorndike and Hagen, 1977

Getting Smarter? The Flynn Effect



Second State </tr



Assessing Intelligence

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The Dynamics of Intelligence

#Mental Retardation

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Genetic Influences





Genetic Influences

Genetic Influences

₭ Group differences and environmental impact

