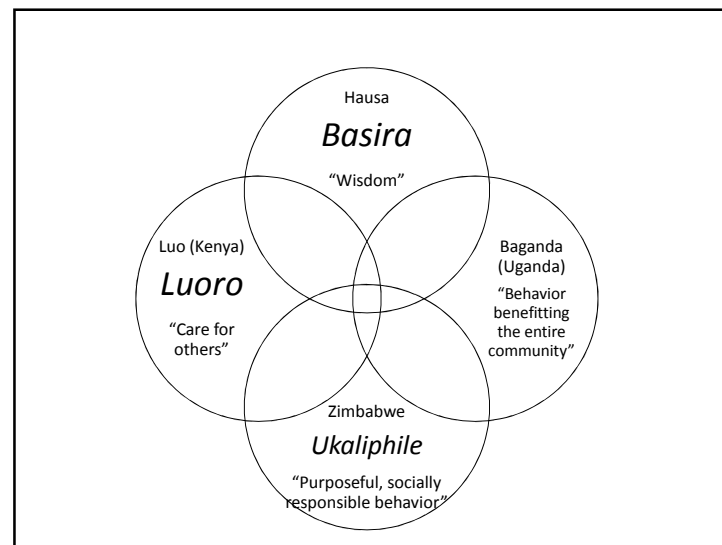
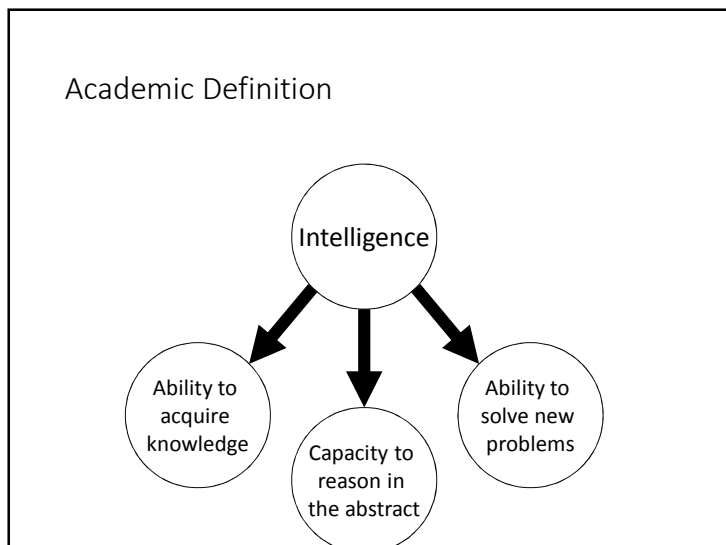


Intelligence and Learning

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- ## Outline
- Definition of Intelligence
 - Traditional African views of intelligence
 - Implicit Theories of Intelligence
 - Influences on Intelligence
 - Perspectives of Intelligence
 - Fluid and Crystallized Intelligence
 - Intelligence as Expertise
 - Improving Intelligence



Implicit Theory of Intelligence

A student's belief about intelligence
Affects how students approach learning

Entity

Theory of Intelligence

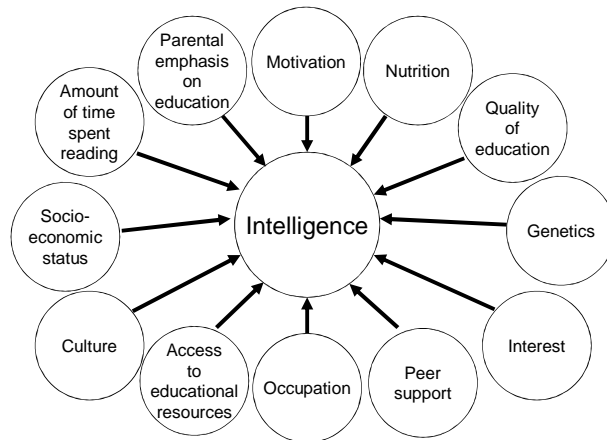
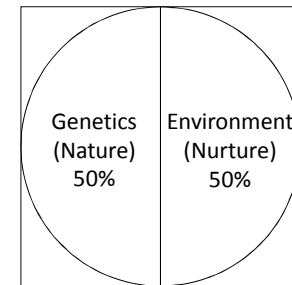
- *Definition:* Ability is stable and beyond an individual's control.
- *Outcome:* Give up when challenged

Incremental

Theory of Intelligence

- *Definition:* Ability is changeable and can be improved with effort.
- *Outcome:* Persist when challenged

Influences on Intelligence: Nature vs. Nurture



Environmental Influences on Intelligence

• Prenatal

- Parental intake of alcohol, smoking, or drugs
- Maternal nutrition
- Perinatal factors

• Family Experiences

- Parents' level of education
- Availability of educational resources
- Amount of reading in the home
- Dialogue between the caregivers and the child
- Variety of experiences available to the child

Environmental Influences on Intelligence

- **School Experiences**
 - Years of formal education
 - Quality of educational experiences
- **Job experiences:** Cognitively demanding jobs increase intelligence

Perspectives on Intelligence: Fluid and Crystallized Intelligence

- **Fluid Intelligence:** Reason abstractly on new problems
- **Crystallized Intelligence:** Accumulation of knowledge and skill in familiar, culturally-relevant domains

Perspectives on Intelligence: Intelligence as Expertise

- **Expert:** Person who has acquired special skills and knowledge in a particular domain
 - Expertise requires an enormous amount of domain-specific knowledge
 - Expertise requires 10 years of intensive, deliberate practice
 - **Deliberate Practice:** Activities designed specifically to improve practice

Intelligence as Expertise for Teachers

- Becoming an expert teacher requires:
 - Intensive study of the body of knowledge necessary for teaching
 - Observation of expert teachers
 - Self-reflection of teaching skills
 - Many years of deliberate practice in teaching (teaching experience)

Improving Intelligence

- **Pregnancy**
 - Fathers and Mothers should avoid smoking, alcohol
 - Mothers should eat nutritious foods
- **Infancy**
 - Provide a variety of materials and books (texts and posters) for the infant to safely explore
 - Talk and sing to the infant and reinforce the infant's vocalizations
 - Read picture books to infants

Improving Intelligence

- **Early Childhood**
 - Encourage children to safely explore the environment
 - Provide a language-rich environment
 - Engage children in discussions
 - Read books *to* children and *with* children
 - Practice and extend children's skills
 - Provide adequate nutrition and health care

Improving Intelligence

- **Adolescence/Young Adulthood**
 - Develop fluid intelligence through problem solving in new situations
 - Develop crystallized intelligence through reading and other learning experiences
 - Develop crystallized intelligence by integrating new knowledge with prior knowledge and experiences
 - Develop expertise by deliberate practice
 - Read, read, read, read, and read some more

Conclusion

- Intelligence is education's most important:
 - **Raw material:** Intelligence is necessary to learn knowledge and skills from formal education
 - **Product:** A high-quality education increases a student's intelligence

Conclusion

- Each classroom and school should be designed to increase students' intelligence through:
 - *Incremental Theories of Intelligence*: Help students understand that intelligence can be improved
 - *Fluid Intelligence*: Provide complex problems for students to solve
 - *Crystallized Intelligence*: Teach for meaningful understanding of knowledge
 - *Intelligence as Expertise*: Provide opportunities for deliberate practice
 - *Social Responsibility*: Help students apply their learning for the benefit of others

Conclusion

- Intelligence does not just consist of memorizing facts, but also problem solving
- There are many different factors that influence each person's intelligence
- Intelligence can change based on environmental supports.
- Intelligence is improved through deliberate practice

Revision

- What is the academic definition of intelligence?
- What are traditional African views of intelligence?
- What are the two implicit theories of intelligence and how do they influence effort toward studying?
- What is the difference between fluid and crystallized intelligence? How can you teach for both in your classroom?
- What does the concept of intelligence as expertise mean? How does it relate to your profession as a teacher?
- What can be done to improve intelligence at all stages of development?