Preschoolers: Intellectual Development

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Characteristics of Preschool Intellectual Abilities

- Children are naturally curious and eager to learn
- **Unidimensional reasoning:** Focus only on one dimension (part) of a problem
- **Private speech:** Use of language to plan and direct their own behavior, particularly in difficult tasks
- **Representational skills:** The ability to represent objects with symbols or models

Limitations of Preschool Children’s Intellectual Development

- Difficulty focusing attention for an extended period of time
- Difficulty using strategies to recall things from memory – Young children can recognize things quite well
- Systematically applying strategies to solve a problem
- Have not had the experience to develop an extensive knowledge-base
- **Young children are gifted learners, but they should not be expected to learn in the same manner as older children**

Mathematics Development

- “High-quality, challenging, and accessible mathematics education for three-to-six-year-old children is a vital foundation for future mathematics learning” (National Association for the Education of Young Children, http://www.naeyc.org/)
Mathematics Skills

• **Classification:** Putting objects or ideas with similar characteristics into groups
• **Seriation:** Ordering objects from smallest to largest
• **Patterns:** Recognize and create patterns
  – Clapping, Beads, Pieces of cloth
• **Geometry:** Shapes

Number Sense

• **Number Sense:** Understanding of number and mathematical operations
  – Counting words
  – Counting objects
  – **Cardinality principle:** Final number represents the number of objects in the set
  – Arabic numerals
  – Compare sets of objects: More/Less
  – Concepts of addition and subtraction (adding means more, subtracting means less)
  – Part/Whole: A whole set of objects is made up of parts

“one”  “two”  “three”  “four”

1  2  3  4

more/addition

less/subtraction
School Readiness

- Set of emotional, behavioral, and intellectual skills needed to successfully learn and grow in school
  - School readiness means that the child is ready to enter a social environment that is primarily focused on education

School Readiness Skills

- Behaviors associated with early school success:
  - Follow daily routines.
  - Dress independently.
  - Work independently with supervision.
  - Listen and pay attention to what someone else is saying.
  - Get along with and cooperate with other children.
  - Follow simple rules.

School Readiness Skills Continued

- Behaviors associated with early school success:
  - Work with puzzles, scissors, colors, biros, etc.
  - Write their own name
  - Count
  - Recite the alphabet
  - Identify shapes and colors.
  - Identify sounds in words and recognize rhyme.

Fostering School Readiness

- Activities that promote school readiness:
  - Read books with the child
  - Spend time with the child, including playing and hugging.
  - Keep a routine for the child, such as mealtimes, naps, and bedtimes
  - Talk to the child.
  - Answer questions from the child.
  - Engage in informal reading and counting activities.
Fostering School Readiness

• Activities that promote school readiness:
  – Promote curiosity by encouraging the child to think about the world around them.
  – Promote play that helps develop creativity and imagination.
  – Practice the alphabet and numbers.
  – Provide opportunities to develop social skills through interacting with other children
  – Encourage behaviors that demonstrate respect and courtesy.
  – Promote responsibility by giving children simple tasks around the house.

Supporting Intellectual Development

**Zone of Proximal Development:** Range of tasks that an individual can not do alone but can accomplish when assisted by a more skilled partner.

Scaffolding

• **Scaffolding:** Assistance that allows children to complete tasks they cannot do independently

  • **Gradual Release of Responsibility Model:** Children gradually take more responsibility for a new skill
    1. Teacher takes most responsibility by modeling and describing
    2. Teacher and child take joint responsibility with the child practicing and teacher providing assistance and feedback
    3. Child takes most responsibility by independently applying new skill

Preschool Children and Technology

• When used properly, technology can foster intellectual development in children

  • Valuable computer programs:
    – **Storyboard software:** Allow children to create stories
    – **Draw/Paint Programs**
    – **Electronic Books**
    – **Writing/Publishing Software**
    – **Practice programs** that teach number facts, spelling, letter recognition and phonics
Educational Television

- Educational television is designed to teach basic literacy and mathematics skills
- American Academy of Pediatrics recommend no more than 1-2 hours per day of quality programming for young children

Revision

- What are strengths of preschool children’s intellectual development?
- What are intellectual skills that young children struggle with?
- What are activities that parents and educators can do to foster school readiness?
- How can parents and educators provide scaffolding for preschool intellectual development?