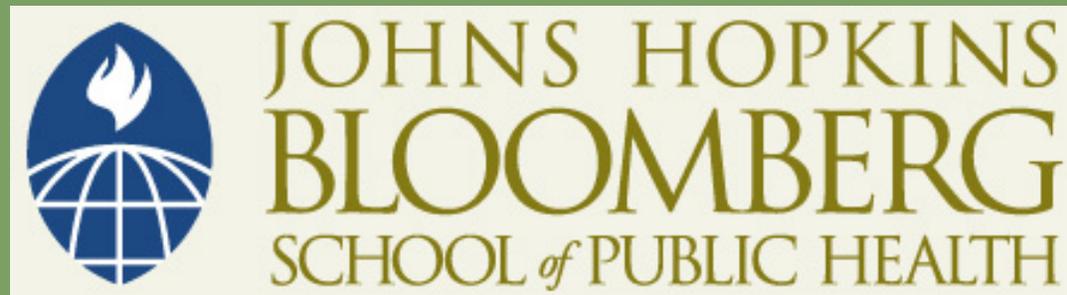


This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike License](https://creativecommons.org/licenses/by-nc-sa/4.0/). Your use of this material constitutes acceptance of that license and the conditions of use of materials on this site.



Copyright 2011, The Johns Hopkins University and Lynne Michael Blum. All rights reserved. Use of these materials permitted only in accordance with license rights granted. Materials provided "AS IS"; no representations or warranties provided. User assumes all responsibility for use, and all liability related thereto, and must independently review all materials for accuracy and efficacy. May contain materials owned by others. User is responsible for obtaining permissions for use from third parties as needed.



JOHNS HOPKINS  
BLOOMBERG  
SCHOOL *of* PUBLIC HEALTH

## Section C

---

### Problem Solving and Attention

# Problem Solving: Preschool/Kindergarten

- Diminished focus on controlling body and attention
- Greater focus on how to accomplish tasks
- Children emerge from kindergarten with the skills to focus, control impulses, and act on new learning for 15 minutes in a group

## Outcomes: Attention/Cognition

- Age 6: organized visual search of new information, simple planning, basic inhibition
- Ages 8 to 10: rapid growth in attention skills and attention accuracy; development of cognitive flexibility
- Ages 10 to 11: cognitive flexibility allows simple hypothesis testing, maintain and shift between sets of information

# Delis-Kaplan Test of Executive Function

- Lower level:
  - Scan for details
  - Sort details into usable bits of information
  - Sort relevant from irrelevant information
- Higher level:
  - Shift between sets of old and new information in order to consolidate the new into the old

# Working Memory and Organization

- Working memory
  - Store information, perform operations on it, organize it, and integrate it into new knowledge
- Operations in working memory
  - Sequential organization
  - Conceptual organization

# Attention and Executive Function

- If you cannot control attention to stay on task, you have a significant handicap in problem solving
- The steps of working memory and organization are dependent on underlying attention and effortful control

# Executive Function Weaknesses in School

- Those who have difficulty with the lower and higher level of EF have increasing problems with each grade because of increased demands for scanning, sorting, organizing, working memory at each age level
- Executive functioning is helped by cognitive development
  - As language skills mature, can “talk through” the steps, guiding focus, and effortful control

# Sequential Organization Weakness: School

- Know the assignment
- Know when it is due
- Have the appropriate study materials to complete work
- Know the directions
- Know where to start the assignment and the steps to complete it
- Gauge the time needed for completion
- Keep focused on the goal until the work is done

## And the Homework Isn't Done Yet

- Gauge how long it will take to check work
- Review the homework for accuracy, quality, and completeness
- Don't leave it under the bed—put it in the backpack
- Take the backpack to school
- Don't leave the work in the backpack in the locker
- Take it out of the backpack to turn in the assignment

## EF Weakness and Social Skills

- Socializing means scanning and reading social interactions with flexibility
  - In other words, “Thinking on your feet.”
- Kids with poor EC—impulsive and too talkative
- Kids who lack cognitive flexibility—lack the intuitive social rules knowledge
- Kids who are rigid problem solvers—lack skills to generalize; are “out of step” with peers

# Home: EF Microcosm of the World

- Child must learn to self-regulate, focus, organize, and solve problems
  - Function as a member of a community
  - Problem solve through responsibilities
  - Respect the greater good

# Home as a Training Ground for EF

- Complete chores to help self and family
- Get up, ready, and out the door
- Self monitor emotions and behavior
- Track personal possessions
- Conform to time limits
- Gauge how long it takes to finish something
- Flexibly move from one activity to the next