

Executive Function Skills:

A New Frontier for Workforce and Other Human Service Programs That Aim to Build Adult Capabilities

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What are Executive Function Skills?

- Simplest definition: Mental functions (**skills**) that support **goal-directed behavior**
- Skills that help us to set our expectations, take action and manage our behavior to achieve short and long-term goals
- Skills we often think of as “soft skills” – e.g., planning, time management, self-control, persistence

Why the Interest in Executive Function Skills for Adults?

- Modest success, even in the most effective employment programs
- Declining employment among single mothers with high school education or less for most of the last 10 years
- Cash assistance provided to very few families
- Evidence that if we teach “life skills” we can do better
- Two-generation concerns: need to invest in adults to see big improvements in outcomes for kids

Impetus for applying executive function principles to programs for disadvantaged **adults** comes out of a concern for improving outcomes for children

- **Theory of Change Supporting A Focus on Adults**

(Frontiers of Innovation, Harvard Center on the Developing Child)

- Protecting children from the impacts of toxic stress requires **selective skill building**—not simply the provision of information and support—**for the adults who care for them**;
- Interventions that improve the caregiving environment by **strengthening the executive function and self-regulation skills** will also enhance their employability, thereby providing an opportunity to augment child outcomes by strengthening the economic and social stability of the family; and
- Community-based initiatives and **broad-based, systems approaches** are likely to be more effective in promoting healthy development and reducing intergenerational disparities if they focus explicitly on strengthening neighborhood-level resources and capacities that buffer young children from the adverse impacts of toxic stress.

Why Executive Function Skills Matter

Executive Function Skills are critical for:

- Job success – poor executive functions lead to poor productivity and difficulty finding and keeping a job (Prince et al. 2007)
- Cognitive, social, and psychological development
- Success in school and in life
- For mental and physical health

Defining Executive Function Skills: Common Themes, Many Definitions and Constructs

Executive Functions/Skills: (Russell Barkley, 2012)

- Self-directed actions needed to choose goals and create, enact and sustain actions toward those goals - more simply, self-regulation to achieve goals.

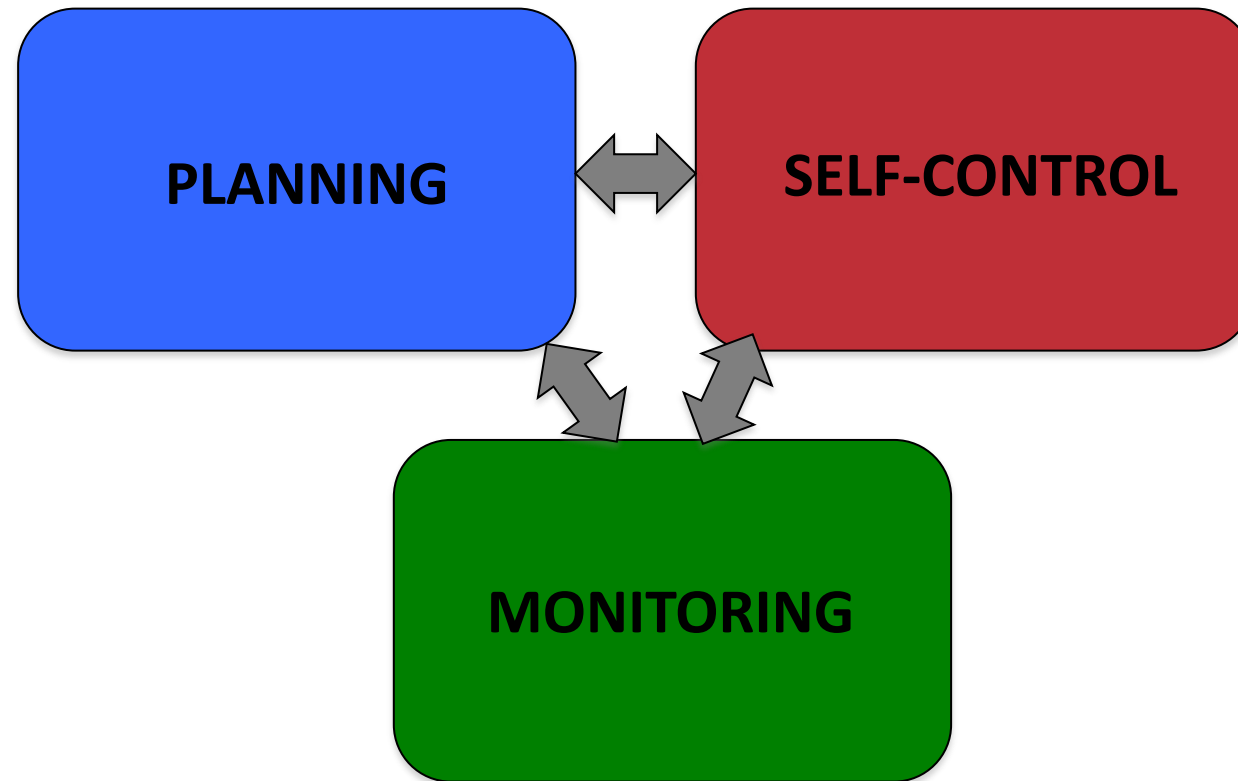
Executive Functioning: (www.nclld.org)

- Is conscious, purposeful and thoughtful.
- Involves activating, orchestrating, monitoring, evaluating and adapting different strategies to accomplish different tasks.
- Includes an understanding of how people tap their knowledge and skills and how they stay motivated to accomplish their goals.
- Requires the ability to analyze situations, plan and take action, focus and maintain attention and adjust actions as needed to get the job done.

Executive Function Frameworks

Examples from Experts in the Field

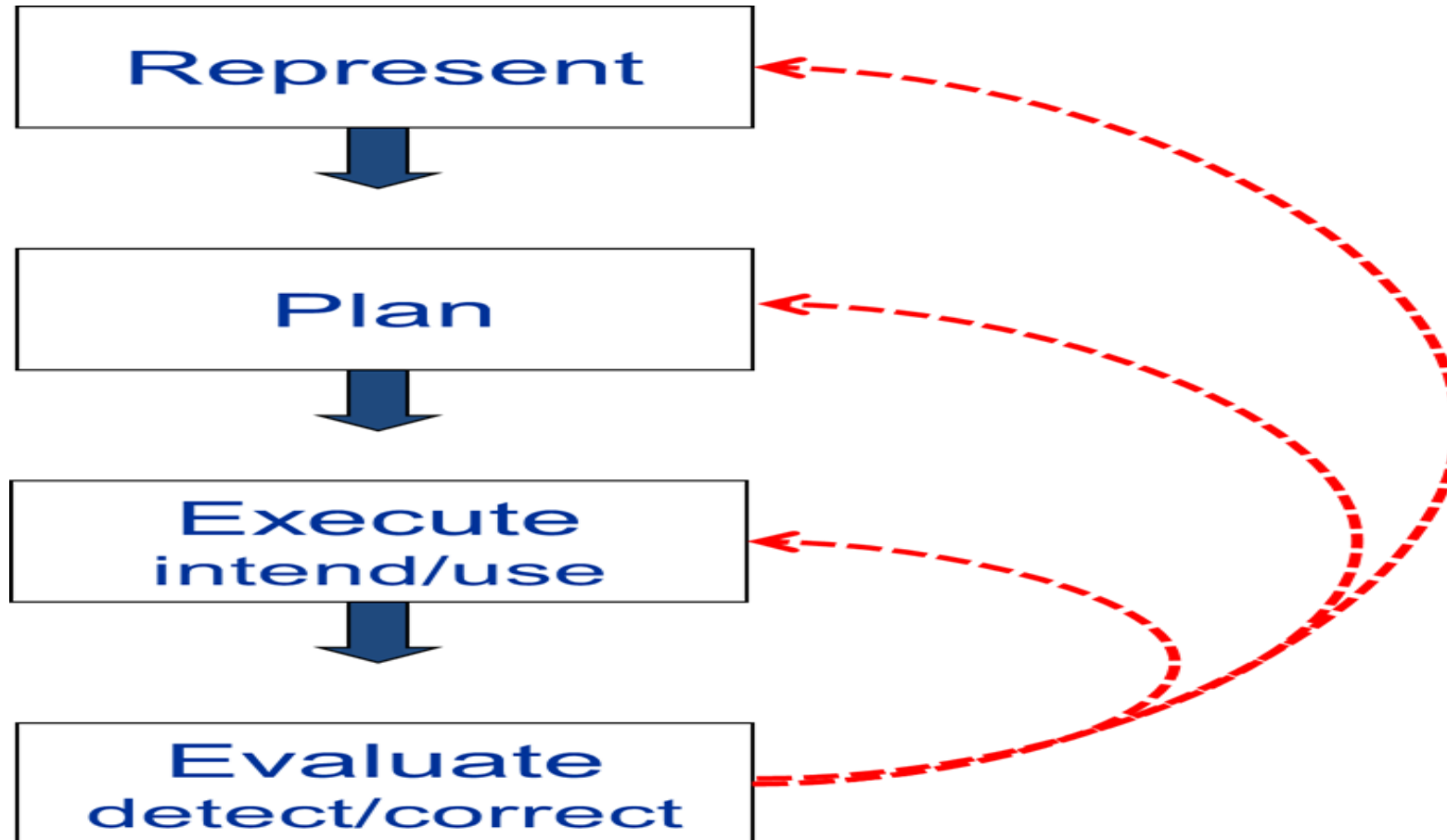
Silvia Bunge, Neuroscientist, University of California at Berkley



Executive Function Frameworks

Examples from Experts in the Field

Phil D. Zelazo, Neuroscientist, University of Minnesota



Executive Function Frameworks

Examples from Experts in the Field
Center on the Developing Child, Harvard University

- **Working Memory:** Ability to hold information in memory while performing complex tasks; incorporates ability to draw on past learning or experience to apply to current situations; critical for reasoning
- **Response Inhibition:** Capacity to think before you act
- **Cognitive Flexibility:** The ability to revise plans in the face of obstacles, setbacks, new information, or mistakes

Executive Function Frameworks

Examples from Experts in the Field

Peg Dawson and Richard Guare, Practitioners

Skills Involving Thinking (Cognition)

Working memory: Ability to hold information in memory while performing complex tasks; incorporates ability to draw on past learning or experience to apply to current situations

Planning/prioritization: The ability to create a roadmap to reach a goal or to complete a task; making decisions about what's important to focus on

Organization: The ability to create and maintain systems to keep track of information or materials

Time management: The capacity to estimate how much time one has, how to allocate it, and how to stay within time limits and deadlines

Metacognition: The ability to monitor oneself; ability to ask oneself – how am I doing or how did I do?

Skills Involving Doing (Behavior)

Response Inhibition: Capacity to think before you act

Emotional control: The ability to manage emotions to achieve goals, complete tasks, or control and direct behavior

Sustained attention: The capacity to keep paying attention to a situation or task in spite of distractibility, fatigue or boredom

Task initiation: The ability to begin a task or activity without undue procrastination and to independently generate ideas, responses, or problem-solving strategies.

Goal-directed persistence: The capacity to have a goal, follow through to the completion of the goal, and not be distracted by competing interests

Cognitive flexibility: The ability to revise plans in the face of obstacles, setbacks, new information, or mistakes

From: *Smart but Scattered* by Peg Dawson, Ed.D. and Richard Guare, Ph.D., 2009

Executive Function Skills in Disadvantaged Adults: What Do We Know?

Not much, but we do know

- Living in poverty during childhood impacts brain development; the impacts from childhood do not suddenly disappear in adulthood
 - But...the brain is malleable and critical “executive function” skills needed to succeed as an adult can be built; very little is fixed
- Not having enough income to make ends meet imposes a “tax” on the brain that leaves fewer cognitive resources to succeed at parenting, education, or work
 - But...the “tax” poverty imposes can be reduced
- Everyone, regardless of income, has executive function strengths and weaknesses

Factors that Impair Executive Functions

- Stress
- Lack of exercise
- Loneliness
- Lack of sleep
- Sadness
- Poor nutrition

If we ignore that someone is stressed, lonely, or not healthy because of poor nutrition, lack of sleep or lack of exercise, those unmet needs will work against that person exercising the executive functions s/he needs to function properly at work and at home.

*Adele Diamond
University of British Columbia*

How Do we Improve Executive Function Skills?

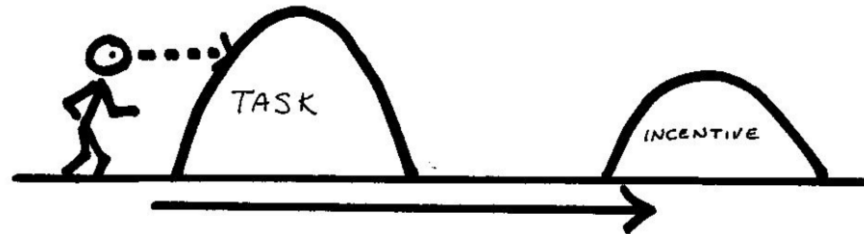
- Work on explicitly building EF skills: break them into small steps, train them, challenge them and practice *in the context in which they will be used*
- Work on reducing things that impair executive functions such as stress, lack of connections and lack of sleep
- Find ways to reduce the demands on executive function skills (e.g., change the environment, provide tools to make the task easier --like using a cellphone app for reminders)

Key Concepts for Improving Executive Function Skills: Motivation

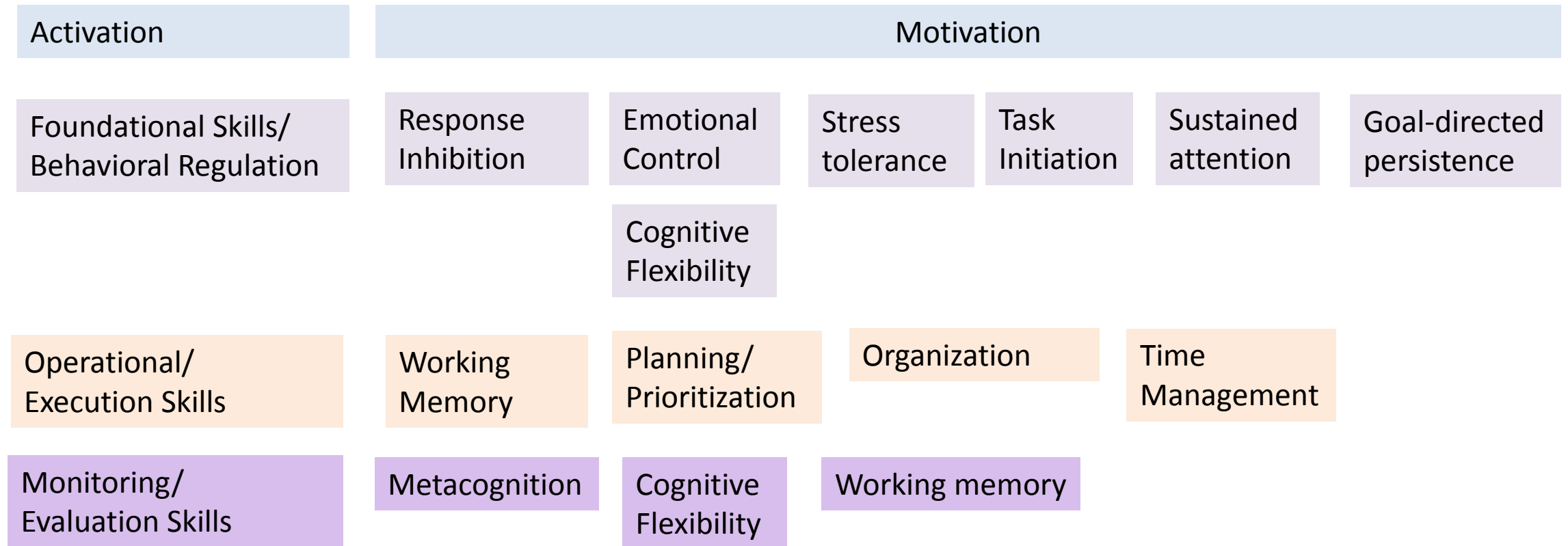
- **Motivation** is a critical building block for understanding and addressing executive function weaknesses.
- What motivates adults:
 - Stress relief
 - Attainable goals and successes
 - Short-term, frequent and immediate incentives
 - Praise for effort
 - Independence and autonomous decision making
 - Having opinions valued
 - Deciding/negotiating what support they will need and having it available

Key Concepts for Improving Executive Function Skills: Effort

- Using executive function skills, especially those that are weak, requires significant effort
- Results in rapid energy depletion and susceptibility to doing things the way you've always done them
- Need to modify task demands to match the person's capacity for effortful work



Executive Function Skills Map



Key Elements of an EF-Informed Approach

- **Goal-setting** is the starting point for building executive function skills. Goals provide a concrete representation of what individuals are aiming to achieve.
- **Coaching** is a process of working with individuals on an ongoing basis to help them develop goals and then establish a link between long-term goals and the daily behavior they need to perform to achieve those long-term goals. Coaching is a collaborative, solution-focused, results-oriented and systematic process.
- **Practice.** Executive function skills are built by doing -- by practicing them over and over again -- not by teaching them in a classroom or even individually.
- **Reflection on progress.** A key component of achieving goals and of building executive function skills is reflecting on the outcomes of one's actions and making adjustments when things are not producing the intended results.

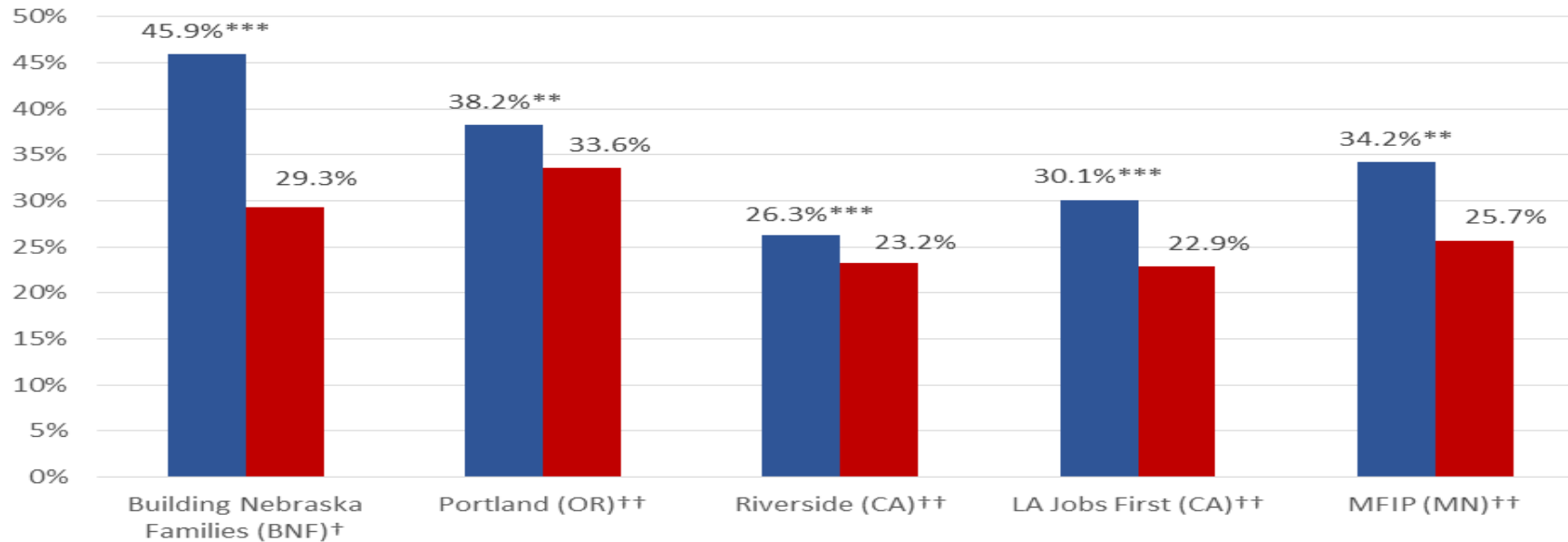
Key Elements of an EF-Informed Approach (2)

- **Scaffolding.** A key strategy for building executive function skills is breaking tasks or skills into manageable chunks and providing a “scaffold” for each chunk. The goal is to develop a series of steps that allows success to beget success.
- **Incentives.** In the context of building executive function skills, incentives are used to reward the behaviors or interim accomplishments that will help individuals to achieve their long-term goals. Incentives help to keep participants motivated long enough to achieve their long-term goals.
- **Accommodations/environmental modifications.** When executive function skills are very weak and time is limited, the best strategy for achieving success may be to acknowledge and accommodate the limitations.
- **Peer support.** Peers can provide support, modeling and a sense of belonging.

- **Crittenton Women’s Union Mobility Mentoring Program (public housing)**
 - Bridge to Self-Sufficiency scaffolding, clear goal-setting and outcomes measurement, tangible rewards, EF skill-building coaching, peer support and leveraging social networks
- **New Haven Mom’s Partnership (public housing)**
 - Cognitive Behavioral Therapy intervention, incentives, peer support, cell phone app, developing a workforce component
- **Public Consulting Group – San Diego demo (TANF employment services)**
 - Employment-related coaching, healthy living workshops, exercise for a cohort of participants

Evidence that moving in new directions could yield positive results (1)

Impacts of Select Employment Programs on Stable Employment



Note: */**/** Significant difference from zero at the .10/.05/.01 level, two-tailed test

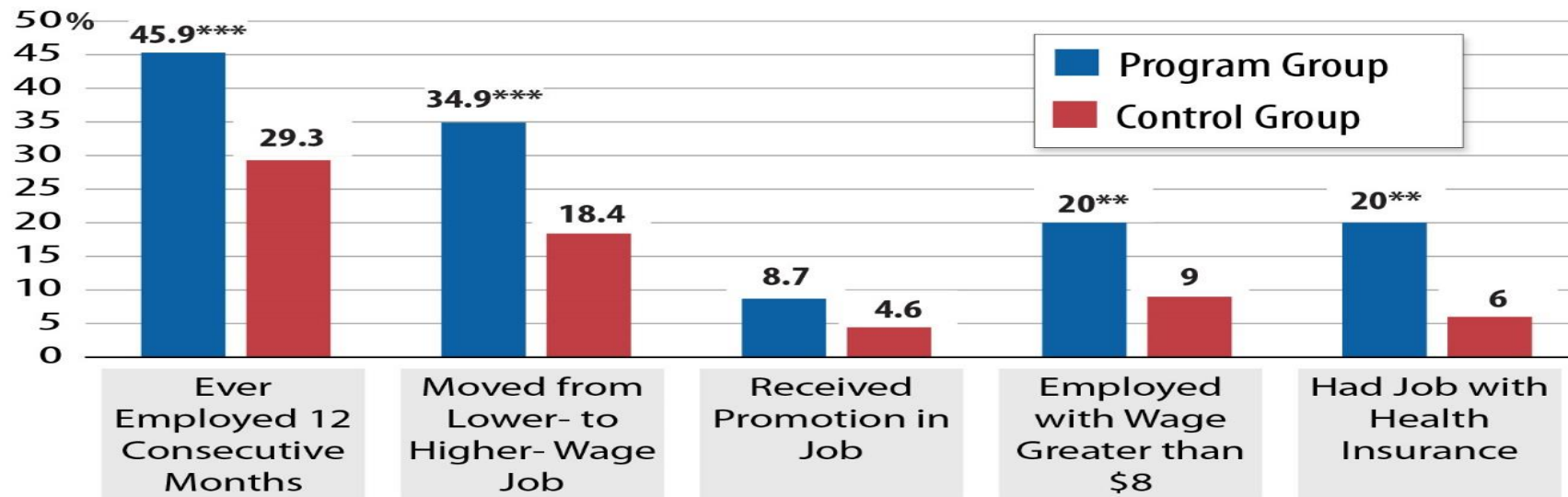
[†] Employed 12 consecutive months

^{††} Employed 4 consecutive quarters

■ Treatment ■ Control

Evidence that moving in new directions could yield positive results (2)

Impact of Building Nebraska's Families (Individualized Life Skills Education Home Visiting Program) on TANF Recipients with Substantial Barriers



Note: */**/** Significant difference from zero at the .10/.05/.01 level, two-tailed test.

Source: Mathematica Policy Research, Inc., "Teaching Self-Sufficiency Through Home Visitation and Life Skills Education."

For more information

- www.buildingbetterprograms.org (Executive Function and Webinar Tabs)
- Pavetti@cbpp.org