



What Early Experiences for Young Children Are Important?

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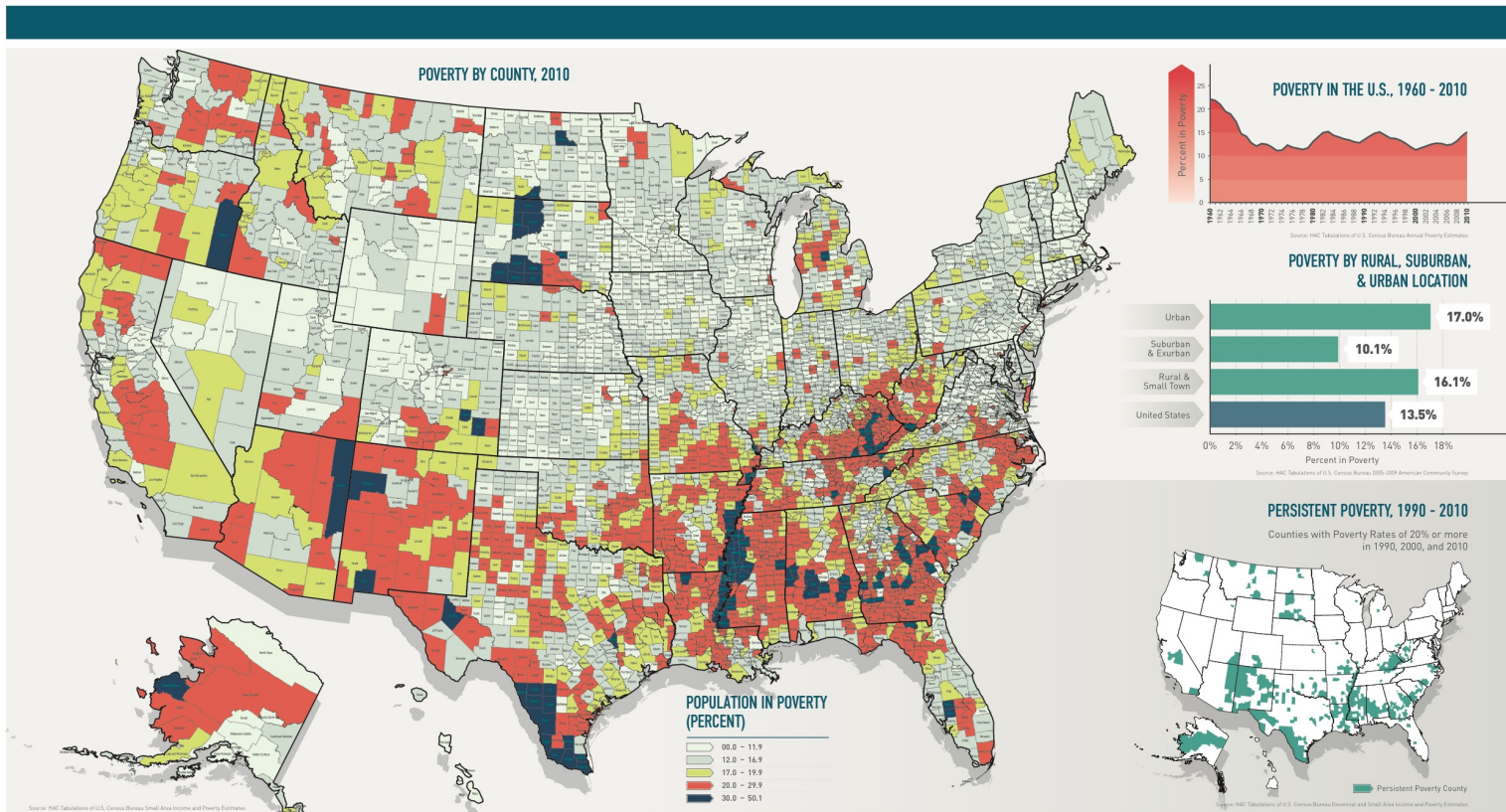
Vanderbilt University

Presentation to the University of Alabama,
Alabama Department of Early Childhood Education

March 27, 2018



POVERTY IN THE UNITED STATES



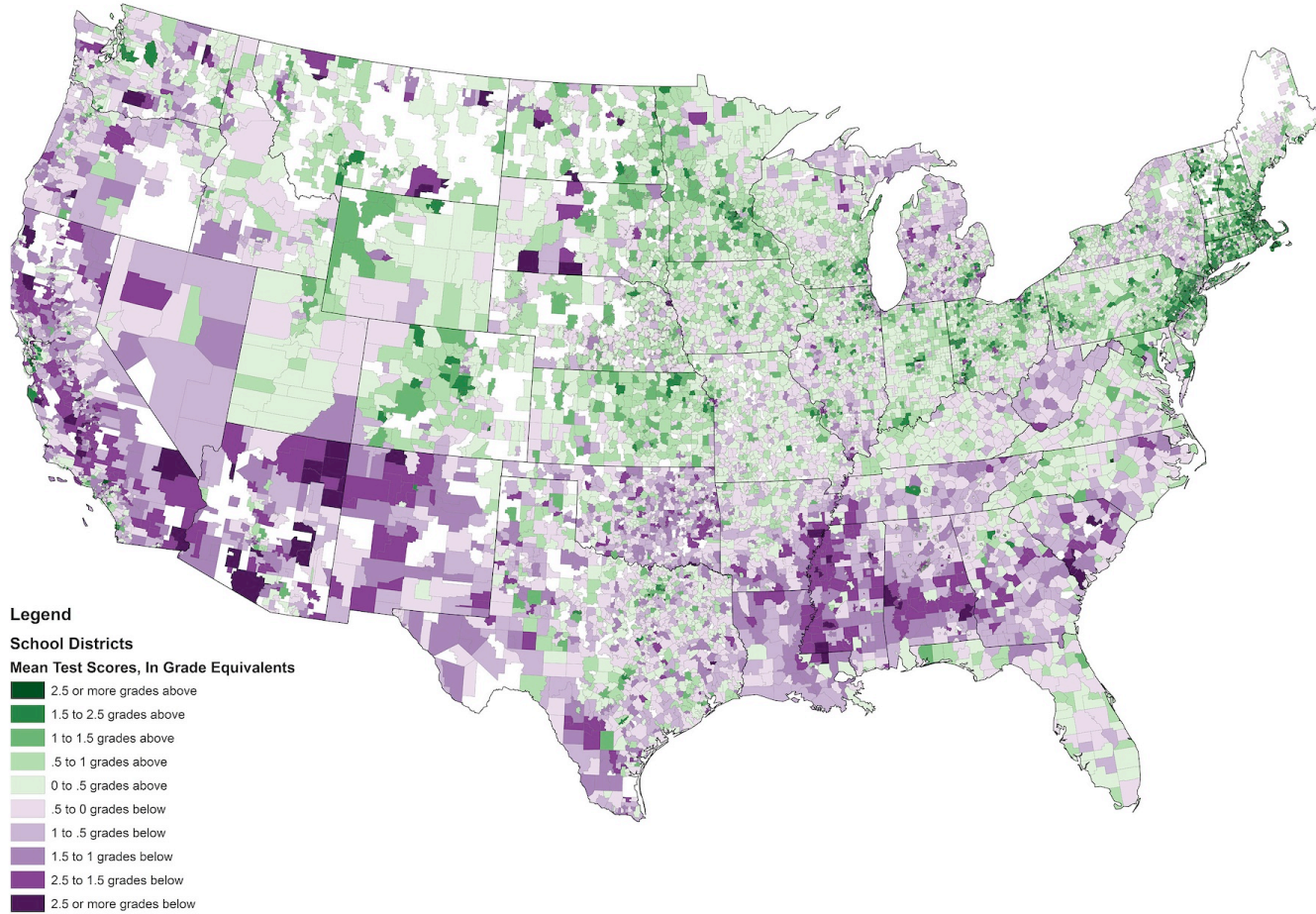
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ABOUT THE DATA
This poster was produced by the Housing Assistance Council (HAC). The information presented derives from HAC tabulations of U.S. Census Bureau data. The Census Bureau uses a set of dollar value thresholds that vary by family size and composition to determine who is in poverty. Poverty status is determined for all people except institutionalized persons, people in military group quarters, people in college dormitories, and unrelated individuals under 15 years old. For more information on poverty estimates please consult the Census Bureau, www.census.gov, or the Housing Assistance Council, 1025 Vermont Avenue N.W., Suite 406, Washington DC, 20005, 202-842-8600. www.ruralhome.org



Average Test Scores, by School District, Grades 3-8, 2009-2013



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Many are suggesting pre-k as the answer: Prepare poor children better prior to school entry



Support for Pre-K Intervention

- “Deep research base” derives from small, boutique studies conducted 50 or more years ago
- Appeal of pre-k intervention is stronger today as the achievement gap grows for children from different income groups
- Heckman and others have promised states immediate and long term benefits from programs for 4 year olds.
- Scaling up is a “concept” not a **defined** set of practices.
 - Original programs bear no resemblance to current state programs
 - Increasingly dominated by public school model



TN-VPK: Typical Statewide Program

- Starting in 1998 with small pilot program, legislation created Voluntary Pre-K program 2005.
- Current program:
 - 935 pre-k classrooms in 135 of the 136 Tennessee school systems across all 95 Tennessee counties;
 - Serving more than 18,000 children.
 - Targeted: FRPL eligibility
 - Meets 9 of 10 NIEER Benchmarks for quality programs
 - 93% of classrooms are in public schools
 - No central, enforceable vision for program
 - No coaching or PD funding with follow through



Research on Statewide Implementation: What Do We Need to Know?

- Immediate post treatment effects (School Readiness) on emergent literacy, language, and math skills; classroom behaviors and social skills
- Sustainability of effects on achievement and school behaviors beyond kindergarten entry
- Enhancements to the program that have the greatest potential for improving effectiveness
- Effectiveness of alternative models for wide implementation

Addressing These Questions: The Vanderbilt Study

- Funded in 2009 by the U.S. Dept. of Education (IES) in response to a joint grant proposal from Vanderbilt's Peabody Research Institute and the TNDOE Division of School Readiness and Early Learning (Grant #R305E090009).
- Three main components:
 - Randomized control trial in oversubscribed schools-- 2 cohorts, 3025 students, 80 schools, 29 districts; tracking through the state data system to 3rd grade and beyond.
 - Intensive substudy of consented children in the full sample-- assessed each year by the research team; 1076 students, 58 schools, 21 districts.
 - Age-cutoff regression discontinuity study-- probability sample of TN-VPK classrooms in 4 regional groups; observations in 155 classrooms and $\approx 5,500$ students assessed at the beginning of PK or K
- Study following the sample through middle school funded in 2014 by NICHD (Grant #1R01HD079461)

Intensive Sub Study (N=1076)

- Two cohorts, two consent procedures
 - Cohort 1 consent rate 46% for participants, 32% for non participants
 - Cohort 2 consent rate 74% for participants, 68% for non participants
 - Children only included if within a school there were both treatment and control group representatives
 - Propensity scores created on baseline variables to assure statistical equivalence between the groups
- 76 randomized applicant lists created at 58 different schools in 21 districts spread widely across the state
- Nineteen of the schools were near cities (10 large cities, 7 mid-size, and 2 small), 11 were in suburbs, 12 were in towns, and 16 were considered rural.
- 70% of control group not in organized program



Immediate Post Treatment Effects (School Readiness) for Intensive Sub Study Sample



Achievement (Cognitive) Outcomes

Woodcock Johnson III Scales

- *Literacy*: Letter-Word Identification, Spelling
- *Language*: Picture Vocabulary, Oral Comprehension, Passage Comprehension (K and 1st grade only)
- *Math*: Applied Problems, Quantitative Concepts, Calculation (K & 1st grade only)
- *Overall WJ Composite*: Mean score across all scales

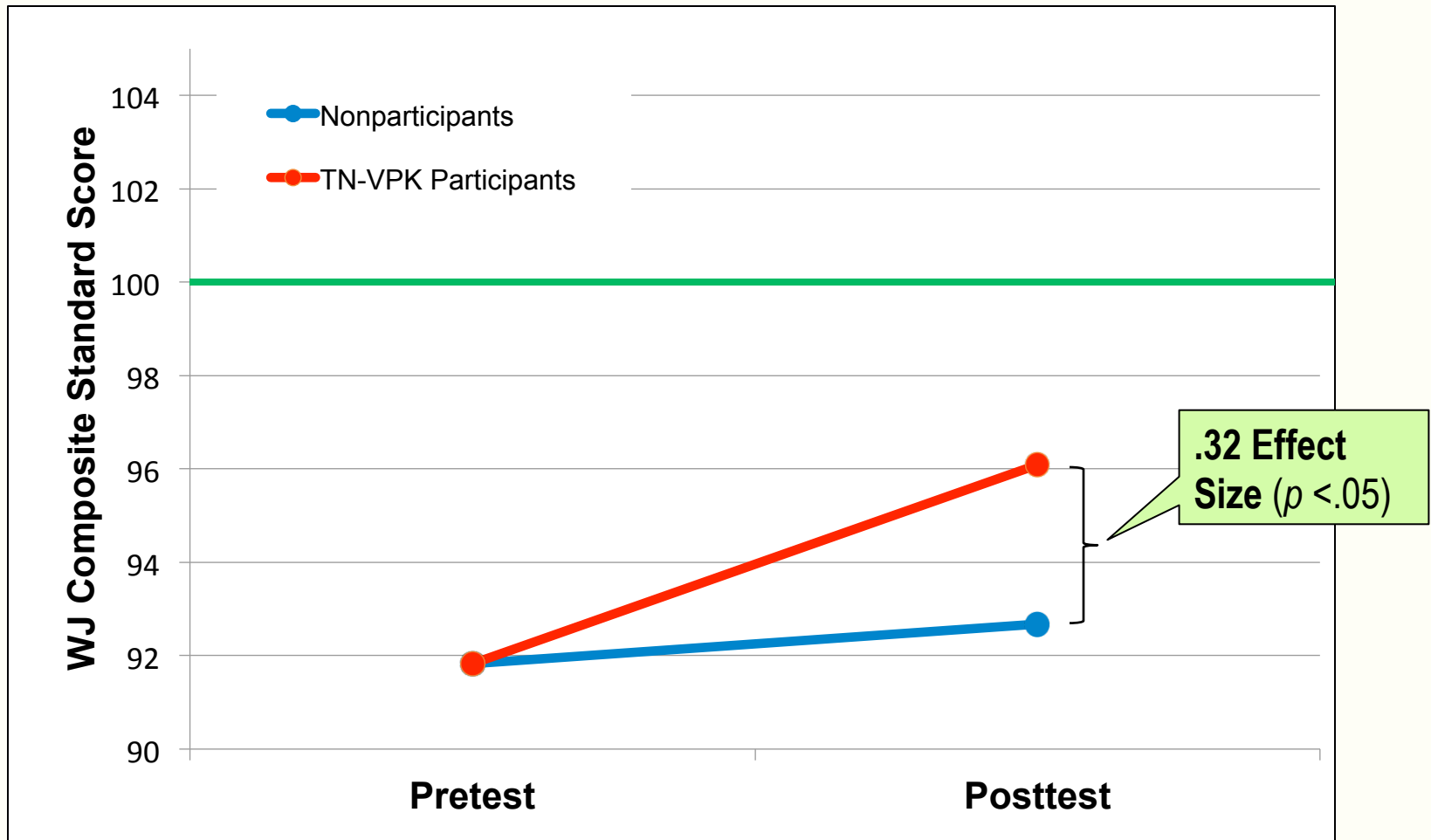


Characteristics of the Children in the ISS Analysis Sample

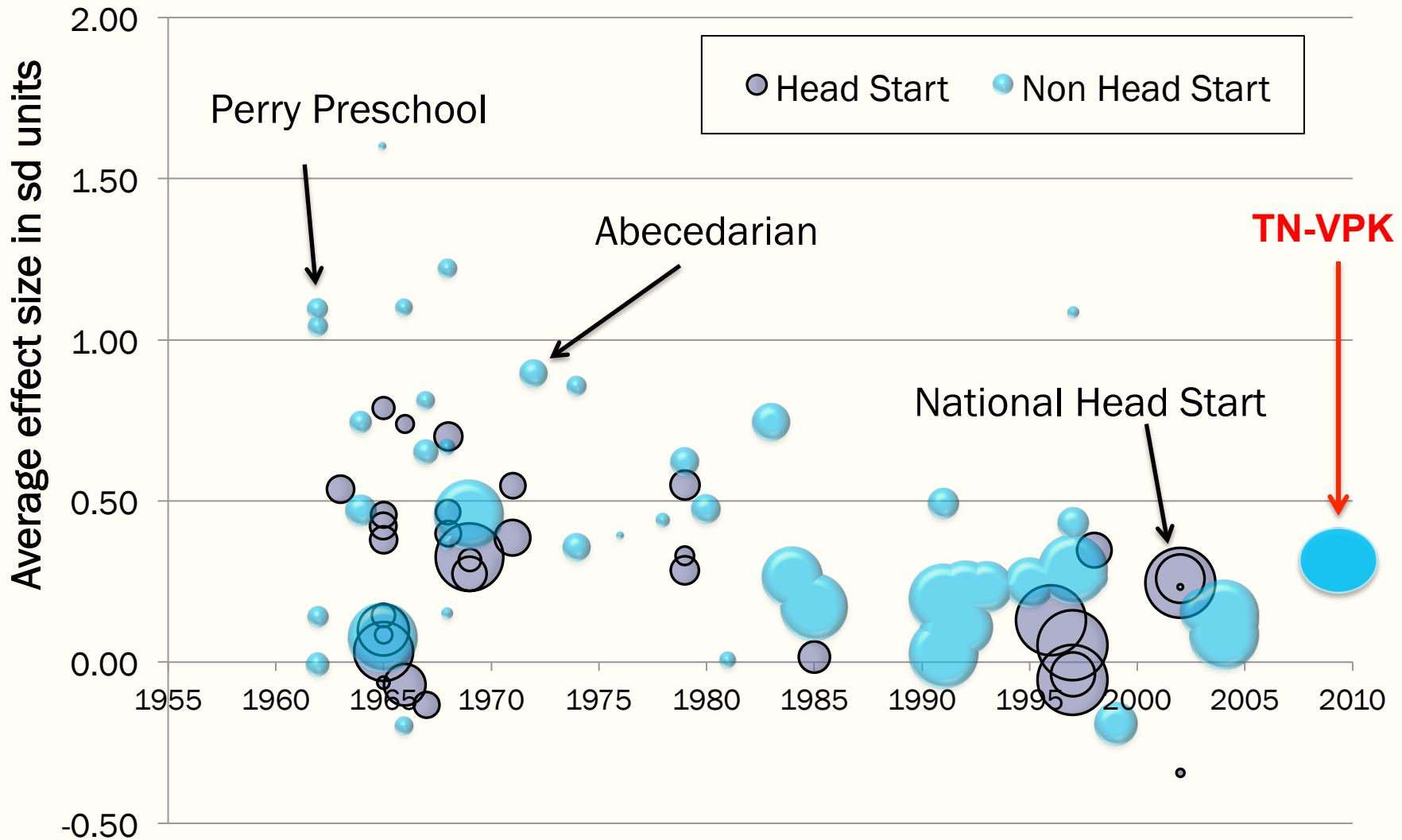
Characteristic	Mean
Age start of pre-k year	4.4
Male	47%
FRPL	100%
Race/ethnicity	
White	65%
Black	21%
Hispanic	14%
Non-native English speaker	15%



TN-VPK Effects at End of Pre-K on the Overall WJ Achievement Composite Score

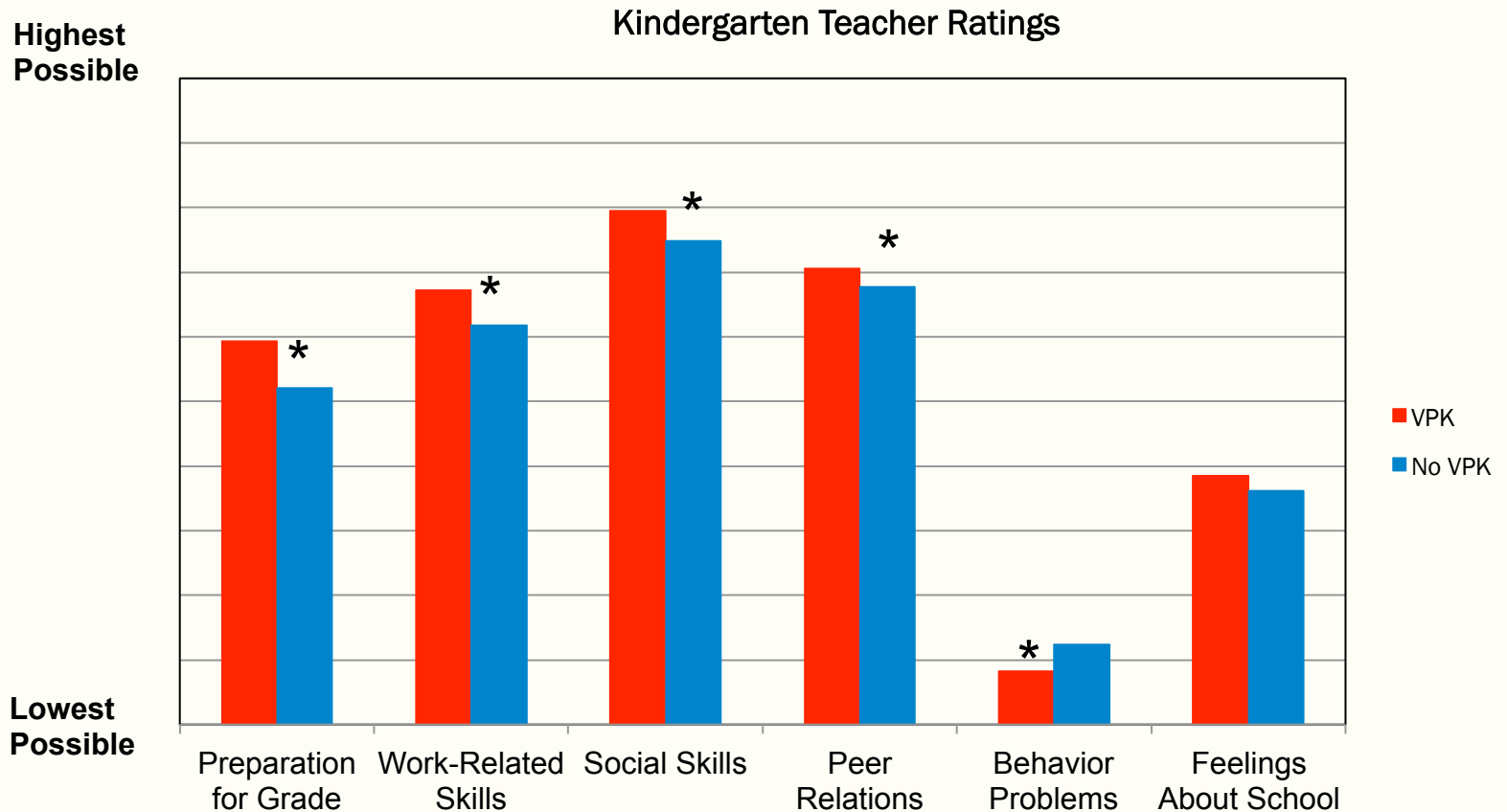


Average Cognitive Impact at End of Pre-K





Non-Cognitive Effects: Teacher Ratings at Beginning of Kindergarten



* Statistically significant at $p < .05$

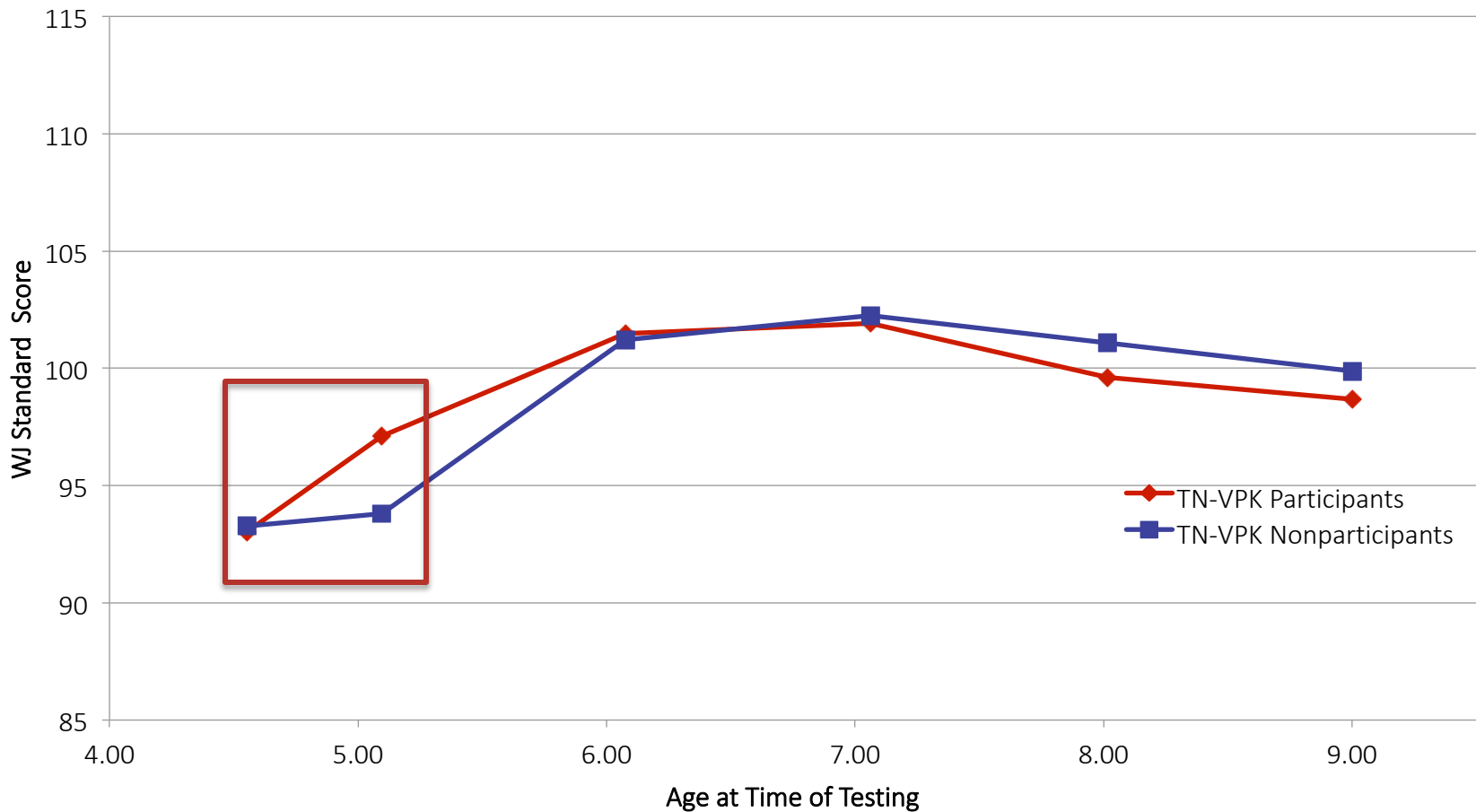


Sustainability Of Effects On Achievement And School Behaviors Beyond Kindergarten Entry for ISS Children



Overall Achievement Advantage Fades

WJ Composite6 Standard Scores (Pre-K through Grade 3)





Teacher Ratings 1st thru 3rd Grade

- 1st grade teacher spring ratings reversed those of Kindergarten teachers
 - VPK children less well prepared for grade level work
 - VPK children had poorer learning behaviors in the classrooms
 - VPK children liked school less well than control children
- These lower 1st grade teacher ratings preceded the downward trend in VPK achievement scores.
- 2nd and 3rd grade teachers rated the children as the same in all these non-cognitive skills.

TNVPK Full Sample

Full Randomized Sample (RCT)

- Oversubscribed schools asked to admit students in order from randomized lists of applicants until seats filled
- 58 schools, 29 districts, 111 randomized applicant lists
- 2990 children*: 1852 admitted to VPK, 1138 not admitted
- Tracking through the state data system to 3rd grade and beyond

Cohort 1: Pre-K 2009-10 (1744)

Cohort 2: Pre-K 2010-11 (1246)

	Attended VPK	Did Not Attend
Assigned to VPK	1609 (87%)	243 (13%)
Assigned to Control	389 (34%)	749 (66%)



VPK Treated

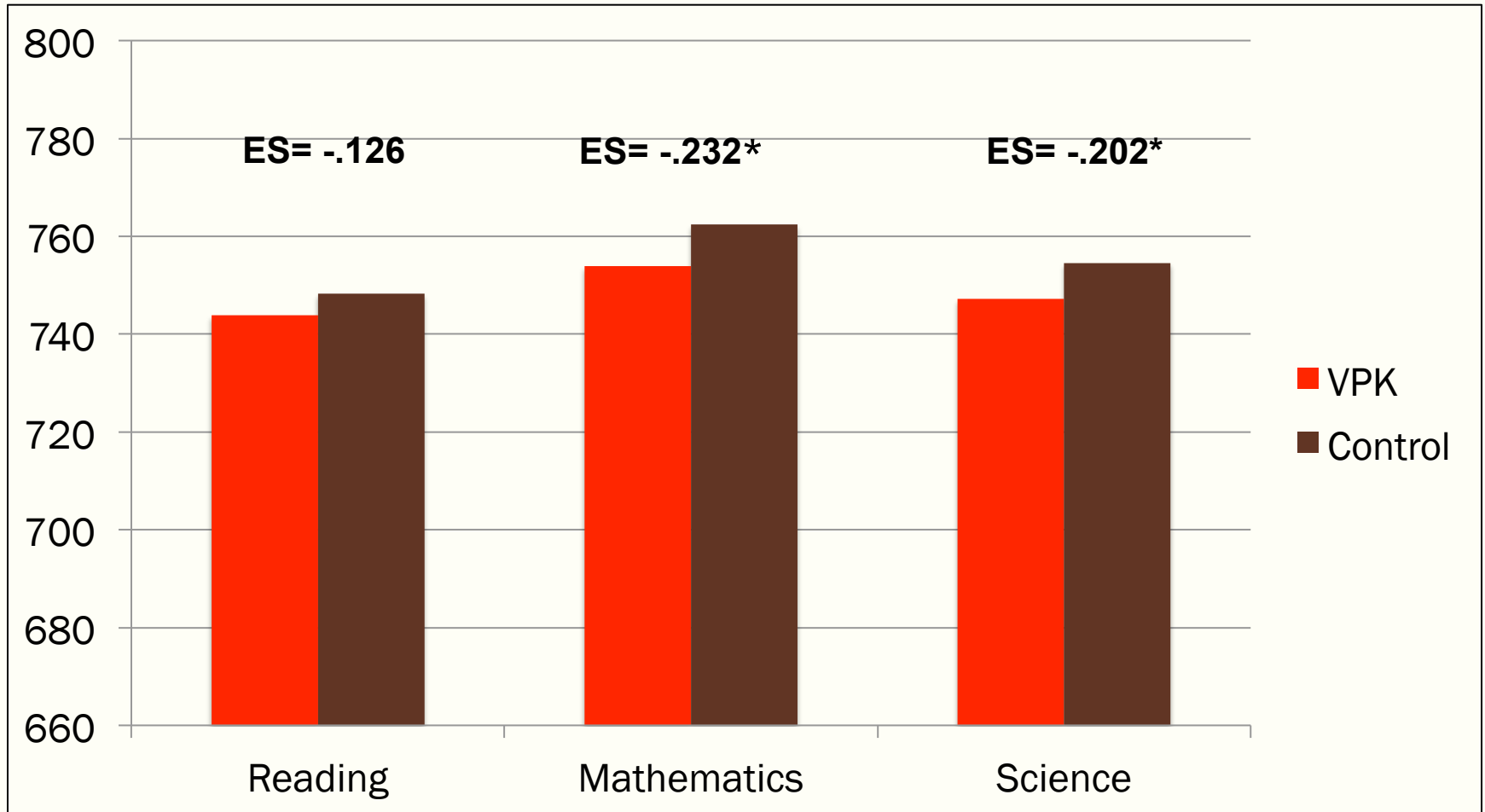


Untreated/Control



Third Grade TCAP Scores: Full Sample

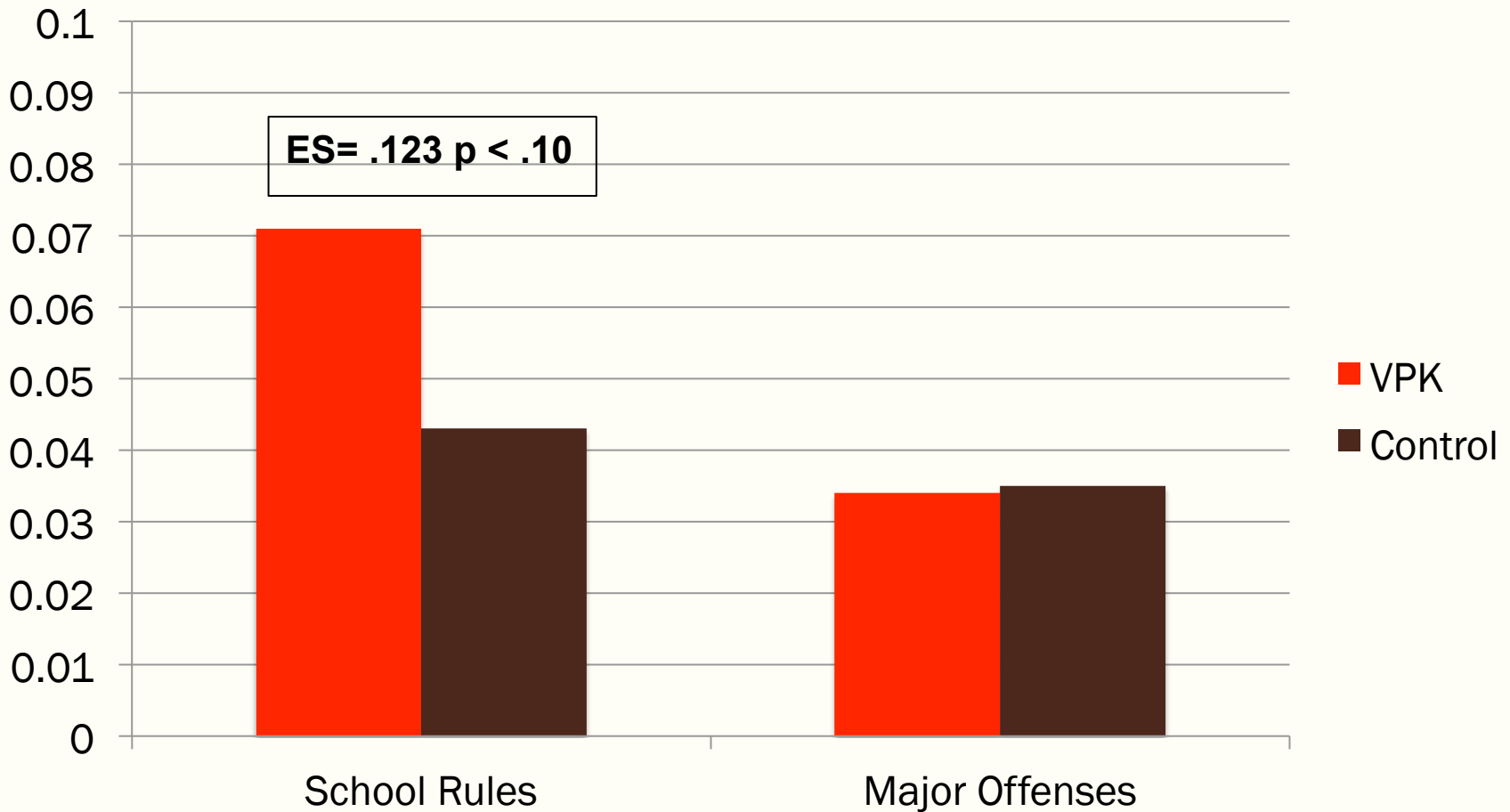
(Treatment on Treated)



* $p < .01$

Disciplinary Offenses by Third Grade

Full Sample (Treatment on Treated)





Possible Explanations

1. Kindergarten teachers work with those children with low school entry skills enabling them to catch up.
2. Kindergarten grades (and beyond) are not building on the skills the VPK children come to school with. Momentum is not sustained.
3. Pre-K has become a junior kindergarten experience. By the end of 1st grade, children are burned out.
 - Increasing numbers of pre-k programs operated by the public schools
 - 93% of TN-VPK classrooms are housed in elementary schools
 - Very hard to protect those classrooms from elementary like pressures

There does not appear to be a consistent vision for TN-VPK.

Conclusions

- Scaled up programs are seldom as successful as the original program that gave rise to them
- Pre-k scale up is more difficult because there is no validated vision for what the program should be
- States are defining pre-k components differently, with none of the differences being systematically investigated.
- Serious work is needed within states to develop a vision and to insure uniformity in program quality across the state
- For *existing* statewide programs, no one knows if higher quality standards can be newly imposed or if school districts would comply



ISSUES TO THINK ABOUT



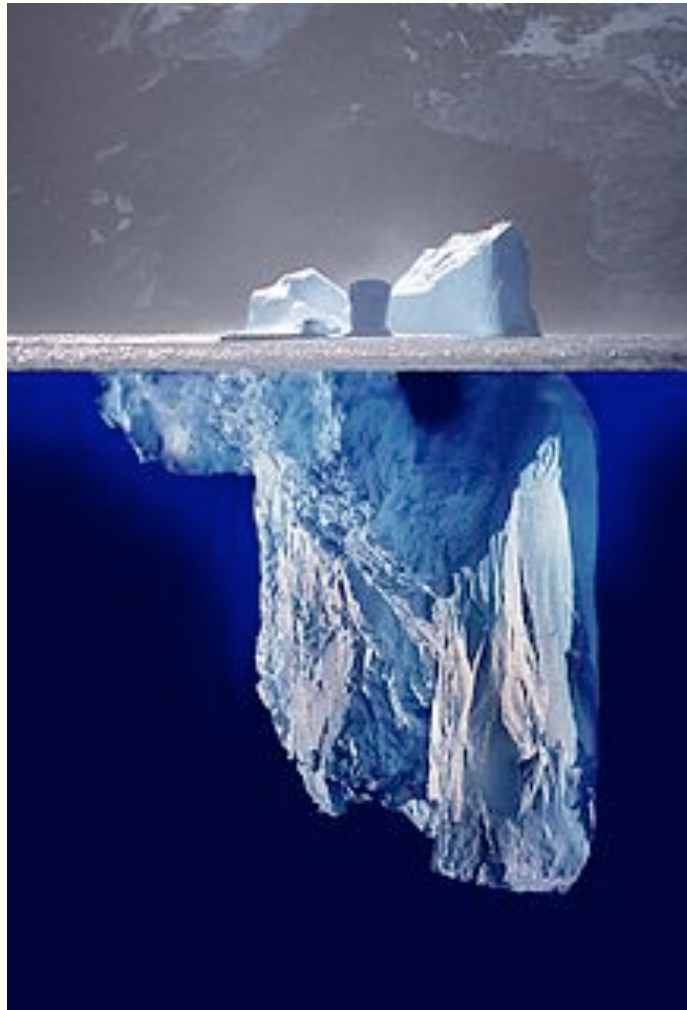
ICEBERG
OF EARLY
CHILDHOOD
COMPETENCIES



Concrete skills:
Letters
Sounds
Numbers
("School Readiness")



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Concrete skills:

Letters
Sounds
Numbers
("School Readiness")

Underlying skills:
Broad vocabulary
Interest in language
Curiosity
Persistence
Attentiveness
Incidental learning
Drive to learn
Predictability



Concrete skills:
Letters
Sounds
Numbers
("School Readiness")

Focus of Pre-K Programs

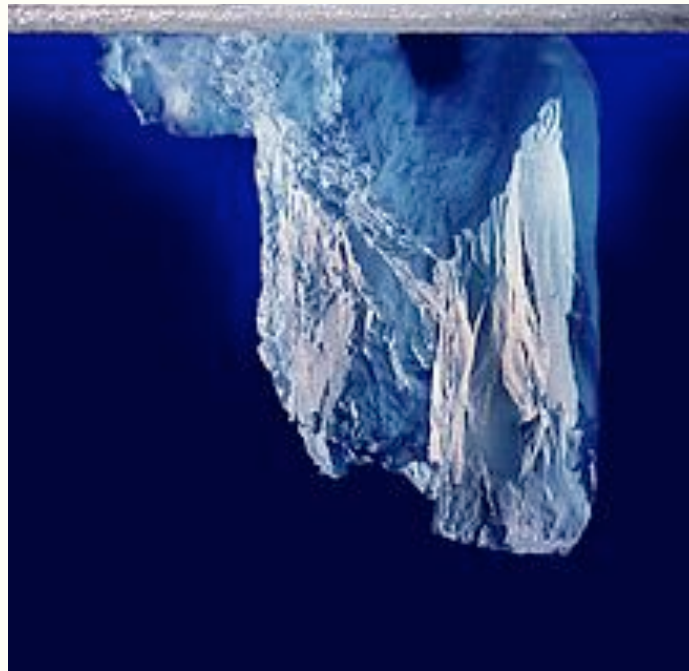
Teaching approaches:
Whole group Instruction
Teacher directed learning
Rigid control
No outdoor play/free time

THESE
SKILLS
FADE

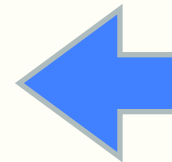


Focus of Economically Secure Families

Extended conversations (adults and children) Predictable routines Positive responses
Freedom to choose (within defined limits) Enrichment activities Rewards for creativity
Time to focus Book reading Adult scaffolding
Support for risk taking



Underlying skills:
Broad vocabulary
Interest in language
Curiosity
Persistence
Attentiveness
Incidental learning
Drive to learn
Predictability





THESE SKILLS SUPPORT LEARNING THROUGHOUT SCHOOL



Underlying skills:
Broad vocabulary
Interest in
language
Curiosity
Persistence
Attentiveness
Incidental learning
Drive to learn
Predictability



**THE IMPORTANT ISSUE IS HOW TO
BUILD THOSE UNDERLYING SKILLS
FOR CHILDREN IN LESS
ECONOMICALLY SECURE FAMILIES**



Broaden and Build

- Positive emotions link to wider range of thoughts and actions
- Positive emotions loosen the hold that a negative emotion might have on individual's mindset.
- Positive emotions protect from the cardiovascular sequelae of negative emotions
- **Biobehavioral synchrony:** shared positive emotional connections create mirroring across people's behaviors, bodies and brains

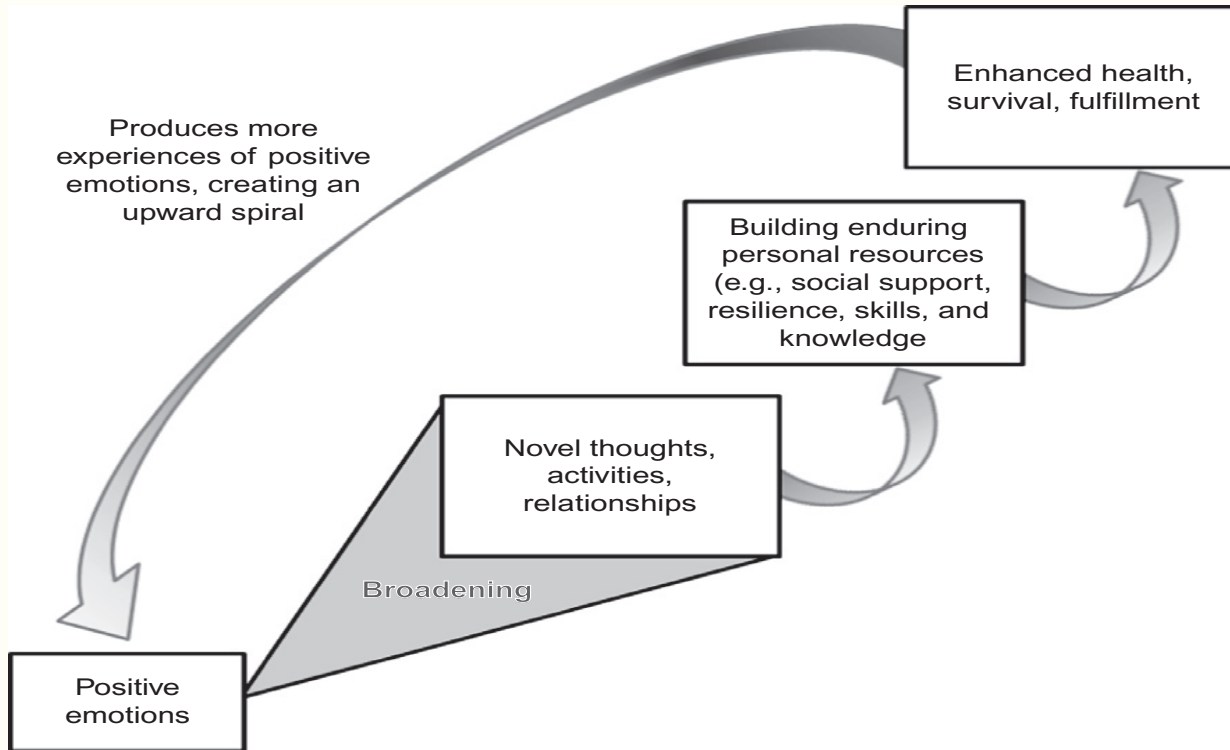


Figure 1.1 The broaden-and-build theory of positive emotions. *Adapted from Fredrickson and Cohn (2008, Fig. 48.1)*

Frederickson, B. (2013). Positive emotions broaden and build. *Advances in Experimental Social Psychology*, 47, 1- 53, <http://dx.doi.org/10.1016/B978-0-12-407236-7.00001-2>



Improving Life Chances

- Reduce inequality in spending on
 - Health care
 - Schools
 - Neighborhoods
 - Services
- Emphasize unity instead of separateness (“us” vs “them”)
- Create joyful places for children to learn and grow, especially pre-k through grade 3



DISCUSSION/QUESTIONS



More information available at:

<https://my.vanderbilt.edu/tnprekevaluation/>

<https://my.vanderbilt.edu/mnpspartnership/>

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