Building Foundations for Children’s School Success

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10 Hallmarks of Children Who Succeed in School

• Eager to learn
• Ask lots of questions
• Work hard and know effort matters
• Have good social-emotional skills
• Can assess their own skills well
• Parents are role models for learning

• Parents promote learning at home
• Family routines support doing well in school
• Parents set and maintain limits
• Schools have high student expectations, support teacher development, and communicate frequently with parents

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Why a Commitment to Improving K-12 Begins in the First 5 Years of Life and Includes After-School and Summer Programs
It is the totality of a child’s experience that lays the foundation for a lifetime of greater or lesser competency.
Seven Essential Transactions for Caregivers with Young Children

1. Encourage exploration
2. Mentor in basic skills
3. Celebrate developmental advances
4. Rehearse and extend new skills
5. Protect from inappropriate disapproval, teasing, and punishment
6. Communicate richly and responsively
7. Guide and limit behavior

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### Abecedarian Preschool Program

**Treatment Group**
- Adequate nutrition
- Supportive social services
- Free primary health care
- Preschool treatment: Intensive (full day, 5 days/week, 50 wks/yr, 5 yrs)
  - “Partners for Learning” curriculum:
    - Cognitive/Fine Motor
    - Social/Self
    - Motor
    - Language
    - Individualized Pace

**Control Group**
- Adequate nutrition
- Supportive social services
- Low-cost or free primary health care

Percent of Abecedarian Sample in Normal IQ Range (>84) by Age (longitudinal analysis)

- **Child Age in Months**
  - 6: Early Intervention 100, Control 93
  - 18: Early Intervention 100, Control 78
  - 36: Early Intervention 95, Control 49

**Source:**
Martin, Ramey, & Ramey (1990)  
Abecedarian Project

MDI or IQ

Early Intervention
Control

Months Assessment
Bayley Scales of Infant-Development
Stanford - Binet

Ramey & Ramey, Preventive Medicine, 1998
## Estimated Influences on IQ

<table>
<thead>
<tr>
<th>Age in Months</th>
<th>Educational Preschool</th>
<th>Maternal IQ&lt;70</th>
<th>Positive Home Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>+7.9</td>
<td>1.0</td>
<td>+4.9</td>
</tr>
<tr>
<td>24</td>
<td>+12.7</td>
<td>-4.3</td>
<td>+5.1</td>
</tr>
<tr>
<td>36</td>
<td>+18.6</td>
<td>-8.2</td>
<td>+8.6</td>
</tr>
<tr>
<td>48</td>
<td>+13.2</td>
<td>-11.7</td>
<td>+8.9</td>
</tr>
</tbody>
</table>

Brief Summary of Abecedarian Results
During Preschool Period

Positive Effects on
• IQ performance
• Learning & cognitive performance
• Language development
• Resilience to non-optimal biological and behavioral conditions
• Social responsiveness
• Academic locus of control
• Maternal education
• Maternal employment

No Effects on
• Maternal attachment
• Parental child rearing attitudes
• Home environments

Decreased Effects
• Incidence of intellectual subnormality

© Ramey & Ramey, 1999
Project CARE

MDI or IQ

Early Intervention

Control

Months Assessment

Bayley Scales of Infant-Development

Stanford - Binet

Ramey & Ramey Preventive Medicine, 1998
THE IHDP INTERVENTION

Adapted from two longitudinal studies of early intervention with MBW, socially disadvantaged children.*

*The Abecedarian Project
Project Care
(2001-2500 grams)

Early Intervention  Control

Arkansas

Einstein

Harvard

Miami

Pennsylvania

Texas

Washington

Yale

Ramey & Ramey (1998), Preventive Medicine
<table>
<thead>
<tr>
<th>Outcome</th>
<th>12mos</th>
<th>24mos</th>
<th>36mos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Development</td>
<td>NS</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Adaptive and Prosocial Behavior</td>
<td>-</td>
<td>-</td>
<td>*</td>
</tr>
<tr>
<td>Behavior Problems</td>
<td>-</td>
<td>-</td>
<td>*</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>-</td>
<td>-</td>
<td>*</td>
</tr>
<tr>
<td>Receptive Language</td>
<td>-</td>
<td>-</td>
<td>*</td>
</tr>
<tr>
<td>Reasoning</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Home Environment</td>
<td>NS</td>
<td>-</td>
<td>*</td>
</tr>
<tr>
<td>Maternal Interactive Behavior</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Maternal Problem Solving</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Infant Health and Development Program

Maternal Education X Treatment Group

IQ at 36 Montl

- Some High School: (n=232) Control (n=162) Early Intervention
- High School Graduate: (n=166) Control (n=104) Early Intervention
- Some College: (n=134) Control (n=63) Early Intervention
- College Graduate: (n=76) Control (n=48) Early Intervention

Ramey & Ramey, Preventive Medicine (1998)
Mean Bayley MDI and Stanford-Binet IQ Scores (corrected for gestational age) at 12, 24, & 36 months of age as a function of maternal IQ group

(Infant Health and Development Program)
Two-Phase Design of Abecedarian Project

Preschool Intervention (N=57)
- School-Age Intervention (N=25)
- School-Age Control (N=24)

Preschool Control (N=54)
- School-Age Intervention (N=24)
- School-Age Control (N=23)

Timing of Intervention
- Birth to 8
- Birth to 5
- Ages 5 - 8
- None

BIRTH  5 YEARS  8 YEARS  12 YEARS  15 YEARS  21 YEARS


R = Randomization
Summary of Abecedarian K-2 Transition Program

- Individualized focus on academic and learning activities in school and at home
- Emphasis on reading, mathematics, and writing
- Master Home/School Resource Teachers (12 children and families per teacher)
- Development of an individualized and documented supplemental curriculum for each child
- Explicit attention and action relevant to family circumstances, as needed
- Summer camps with academically relevant experiences

© Ramey & Ramey, 1999
Z Scores and Effect Sizes in Intellectual Performance as a function of Treatment Condition in the Abecedarian Project

Preschool Only \((\bar{x} = 97.7)\)
- Preschool Plus K-2 \((\bar{x} = 96.9)\)
- Control \((\bar{x} = 92.6)\)
- K-2 Only \((\bar{x} = 90.5)\)

Effect size:
- Control: -.0-
- K-2 Only: -.0-
- Preschool Only: .58
- Preschool + K-2: .43

Mean Z-scores:
- WPPSI-5: \(.36\)
- WISC-R-6.5: \(.27\)
- WISC-R-8: \(.18\)
- WISC-R-12: \(.24\)
- WISC-R-15: \(.20\)
Abecedarian Project
Woodcock-Johnson
Age-referenced Reading Standard Scores at age 8

**Reading Achievement**

<table>
<thead>
<tr>
<th>Treatment Groups</th>
<th>N</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>20</td>
<td>-0.20</td>
</tr>
<tr>
<td>K-2 Transition</td>
<td>20</td>
<td>-0.75</td>
</tr>
<tr>
<td>Preschool Only</td>
<td>23</td>
<td>-1.04</td>
</tr>
<tr>
<td>Preschool Plus K-2</td>
<td>24</td>
<td></td>
</tr>
</tbody>
</table>

Where: X = Mean, T = Treatment condition, C = Control condition, SD = Standard deviation

Ramey & Campbell, in *Children in Poverty*, 1992
Abecedarian Project

Percent of Abecedarian Children At or Below the 25th Percentile in Reading and Math Achievement on the Woodcock-Johnson Test

<table>
<thead>
<tr>
<th>Condition</th>
<th>Reading Percentile &lt;=25</th>
<th>Math Percentile &lt;=25</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC</td>
<td>70%</td>
<td>60%</td>
</tr>
<tr>
<td>CE</td>
<td>60%</td>
<td>50%</td>
</tr>
<tr>
<td>EC</td>
<td>50%</td>
<td>40%</td>
</tr>
<tr>
<td>EE</td>
<td>40%</td>
<td>30%</td>
</tr>
</tbody>
</table>

* E = Experimental
  C = Control
First Letter = Preschool Condition
Second Letter = School-Age Condition
The Abecedarian (ABC) Project
Longitudinal Effect Sizes for Reading by Treatment Group

Effect Size in SD Units

Age at Testing

Age 8  Age 12  Age 15  Age 21

K-2  Preschool  Preschool + K-2

The Abecedarian (ABC) Project
Longitudinal Effects Sizes for Mathematics by Treatment Group

Effect Size in SD Units

Age at Testing

Age 8  |  Age 12  |  Age 15  |  Age 21

K-2   |  Preschool  |  Preschool + K-2

Abecedarian Project
Post-High School Education For Teen Mothers

Ramey et al., Applied Developmental Science, 2000
Abecedarian Project

Retention in Grade by Age 15
- Control: 56%
- Preschool: 30%

Placement in Special Education by Age 15
- Control: 48%
- Preschool: 12%

Ramey & Ramey, MR/DD Research Review, 1999
Percent in Skilled Job or Higher Education

Control

Treated

Group

$X^2 (1) = 6.72, p \leq .01$
Age at Birth of First Child

- **Control**
  - Age in Years:
    - 16.5
    - 17.0
    - 17.5
    - 18.0
    - 18.5
    - 19.0
    - 19.5
    - 20.0

- **Treated**
  - Age in Years:
    - 16.5
    - 17.0
    - 17.5
    - 18.0
    - 18.5
    - 19.0
    - 19.5
    - 20.0

Group

\[ F (1, 44) = 6.38, p < .05 \]
Key Findings from Abecedarian Project

(‘Abecedarian’...one who learns the basics, such as the alphabet)

18 MONTHS TO 21 YEARS OLD

Intelligence (IQ)
Reading and math skills
Academic locus-of-control
Years in school, including college
Full-time employment

Grade repetition
Special education placement
Teen pregnancies
Delinquency and incarceration

Plus benefits to mothers of these children (education, employment)

© Ramey et al., 2000
Defining Quality of Early Care and Education

- Adopt a universal definition for all forms of care for all children
- Avoid reliance on structural correlates *only* (such as staff education, ratios)
- Insist on direct observations and validation (with frequent updates)
- Also include information from parents, caregivers, and documented records
Quality of Care Is Multi-faceted

Health & Safety Practices
- Individualized
- Developmentally appropriate
- Frequent

Learning & Language Activities
- Frequent, warm, responsive
- Respectful

Adult-Child Interactions
- Frequent, supportive, informative

Caregiver-Parent Relationship
- Frequent

Quality of Child Care
The Urgent Need for Valid Information

- Who provides care and education
- Who receives care and education
- The quality of care and education
- Total costs of care and education
- Policies and standards
- System of accountability
- Impact of care and education on children and families
The 3 Next (low cost) Steps

- Responsive reading
- Information & pleasant talk
- Linking childcare, school, and parents