The First 1,100 Days Last Forever

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Chapter One

Germ Theory
1850s – Health Care

1:5 Maternal Deaths

Ignaz Semmelweis
1850s – Germ Theory Rejected

John Snow

Erikson Institute
1860s – Father of Germ Theory

Louis Pasteur
1865-1880 – Father of Modern Surgery

Joseph Lister
Health Care – 1850-2020

- 1900 – Medical Imaging
- 1929 – Penicillin
- 1950s – Kidney Transplants
- 1980s – Stem Cell Therapy/Bone Marrow
- 2000s – Antiviral Drugs
- 2000s – Immunotherapy
Chapter Two
The Road to Educational Success
Early experience is the “smoking gun” for both education success and long-term health.

- Things that happen early in life leave biological memories in your body.
- “Gets under your skin”
Brain Architecture

- Major Stages of Brain Development
  - Neural tube formation
  - Cell proliferation
  - Cell differentiation
  - Cell migration
  - Cell connections
  - Synaptic pruning
  - Myelination
The Brain Changes its Structure and Function in Response to Experience

- **Plasticity**
  - The brain is adaptable and can be influenced by positive experiences.
  - The brain is vulnerable and can be harmed by negative experiences.
Toxic
Toxic Stress
The Body’s Response to Stress

- Increase in heart rate
- Increase in blood pressure
- Increase in breathing rate
Cortisol

- Suppresses the immune system
- Impairs memory/shrinks hippocampus
- Impairs selective attention
- Creates anxious behavior
Cortisol

- If exposed to chronic stress, an elevated level of hormone production becomes “normal.”
The Brain Architecture of Anxiety and Fear
The Brain Architecture of Memory and Learning
School Readiness
Executive Function & Self-Regulation

- What are executive functions?
  - Working memory
  - Inhibitory control
  - Attention shifting/cognitive or mental flexibility
Executive Function & Self-Regulation

• Skills associated with planning, reasoning, problem solving
  – Connecting current and past information and actions
Tapping Task
Red
Executive Functions & Self-Regulation

• Executive-function abilities predict academic and social readiness for school

• Over-and-above other child characteristics
  – Intelligence
  – Prior academic knowledge
Kindergarten Social Competence

- 20 year study
- 800 children starting in K
  - 4 locations
- Child’s social skills in kindergarten and how well they were doing in early adulthood
  - Listen to others
  - Share
  - Resolve problems with peers
  - Helpful

Jones et al., 2015
Educational and Employment Outcomes

- Special ed
- Repeated grades
- Graduate from high school on time
- Complete a college degree
- Obtain stable employment
Justice System

Police involvement

Ever in detention facility

Number of arrests for severe offense
Public Assistance

Public housing

Public assistance

Medication for emotional for behavioral issues
Successful Schools
Average Academic Achievement, by Grade
National Average, 2009-2013

Reardon, 2017
Average Academic Achievement, by Grade
Evanston, 2009-2013

- National Average
- Evanston Average

Reardon, 2017
Average Academic Achievement, by Grade
Evanston, 2009-2013

Reardon, 2017
Average Academic Achievement, by Grade
Evanston, 2009-2013

Reardon, 2017
Average Academic Achievement, by Grade
Chicago, 2009-2013

Reardon, 2017
Academic Achievement and Socioeconomic Status
All US School Districts, 2009-2013

Reardon, 2017
Achievement Growth and Socioeconomic Status
All US School Districts, 2009-2013

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Reardon, 2017
How Effective Is Your School District? A New Measure Shows Where Students Learn the Most

By EMILY BADGER and KEVIN QUEALY DEC. 5, 2017
Six Parishes – 5 Year Academic Growth

Example – Expected Academic Achievement

At/Above Proficiency

36%

Standardized Scale Score

With One Additional Year of Achievement Growth

At/Above Proficiency

Standardized Scale Score

58%
With Two Additional Years of Achievement Growth

At/Above Proficiency

77%
With Three Additional Years of Achievement Growth

“We Can’t Afford It”
Public Expenditures on ECE (GDP)

OECD, 2016
"We Can’t Afford It”

- NYC – Amazon Deal:
  - $3,000,000,000
  - 25,000 jobs
  - = $120,000 per job
- Wisconsin and Foxconn:
  - $3,000,000,000
  - 13,000 jobs
  - = $230,769 per job
Return on Investment

Heckman, J. (2007)

Rates of return to human capital investment

Programs targeting the earliest years

- Preschool programs
- K-12 schooling
- Job training

Age

B-3 4-5 6-18 19+ Post School

Heckman, J. (2007)
Chapter Three
It is Time to Innovate
The Father of American Public Education

Horace Mann
Education – 1850-2020
Education – 1850-2020
Health Care – 1850-2020

• 1880s – Germs cause disease
• 1900 – Medical Imaging
• 1929 – Penicillin
• 1950s – Kidney Transplants
• 1980s – Stem Cell Therapy/Bone Marrow
• 2000s – Antiviral Drugs
• 2000s - Immunotherapy
Education – 1850-2020

- 1946 – National School Lunch Act
- 1954 – Brown vs. Board of Education
- 1965 – Elementary and Secondary Education Act
- 1975 – Education for All Handicapped Children Act
- 1990 – Individual with Disabilities Education Act
- 2002 – No Child Left Behind Act
- 2015 – Every Student Succeeds Act
If you were building the system today, would you start at age 5?
Policy Implications
Policy and Program Opportunity

- Home visiting programs
- Universal pre-K (3 and/or 4 year-olds)
- Quality vs. Quantity Child Care
- Expanded subsidies and tax credits for ECE
- Intensive focus on 0-3 (Early Head Start)
- Infant Mental Health Services
- Pay parity between Child Care and Schools
- Paid parental leave
- Universal basic income
Closing Thoughts
Importance of Early Childhood Education
Importance of Early Learning
Importance of Early Childhood Development
Importance of Early Experience
Closing Thoughts

• Invest in in early experience, not just early education
  – Risk stays with you your entire life
  – Be comprehensive (0-5)
• Need to build from prenatal/birth up
  – Not from K-12 down
• It has been 50 years…it is time
1,100 Days
Thank You

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