EARLY CHILDHOOD EDUCATION, ECONOMIC DEVELOPMENT AND THE FORMATION OF HUMAN CAPITAL

Dr. Calvin A. Kent,
Christine Risch, Kent Sowards ,Viktoriya Rusalkina

July 27, 2005

Early Childhood Education (ECE) promotes Economic Development

- ECE is a major industry producing income and employment
- ECE is a major contributor to formation of "human capital" (HC)
- ECE increases the labor pool

Scope of ECE in WV

- Number of establishments
  - Registered Licensed – 4,043
  - Unlicensed – unknown, 60 – 70% of Pre-K children
- Number of Children Served – 115,000 or more full-time or part-time (54% of kids age 0-4 + 60% of kids age 5-9 with working parents)
- Amount of State Spending - ??

ECE is a major industry

- Spending on ECE creates income and jobs.
- Employment in ECE is 6,844
- The child day care industry had $95 million in gross receipts in 2002
  - Comparable industries:
    - Hardware Stores - $98,482,000
    - Heating and AC Equipment Wholesalers - $92,327,000
    - Residential Mental Retardation Facilities - $98,482,000

Multiplier Effect

- Direct
- Indirect
- Induced

This income has multiplier effects of 1.5

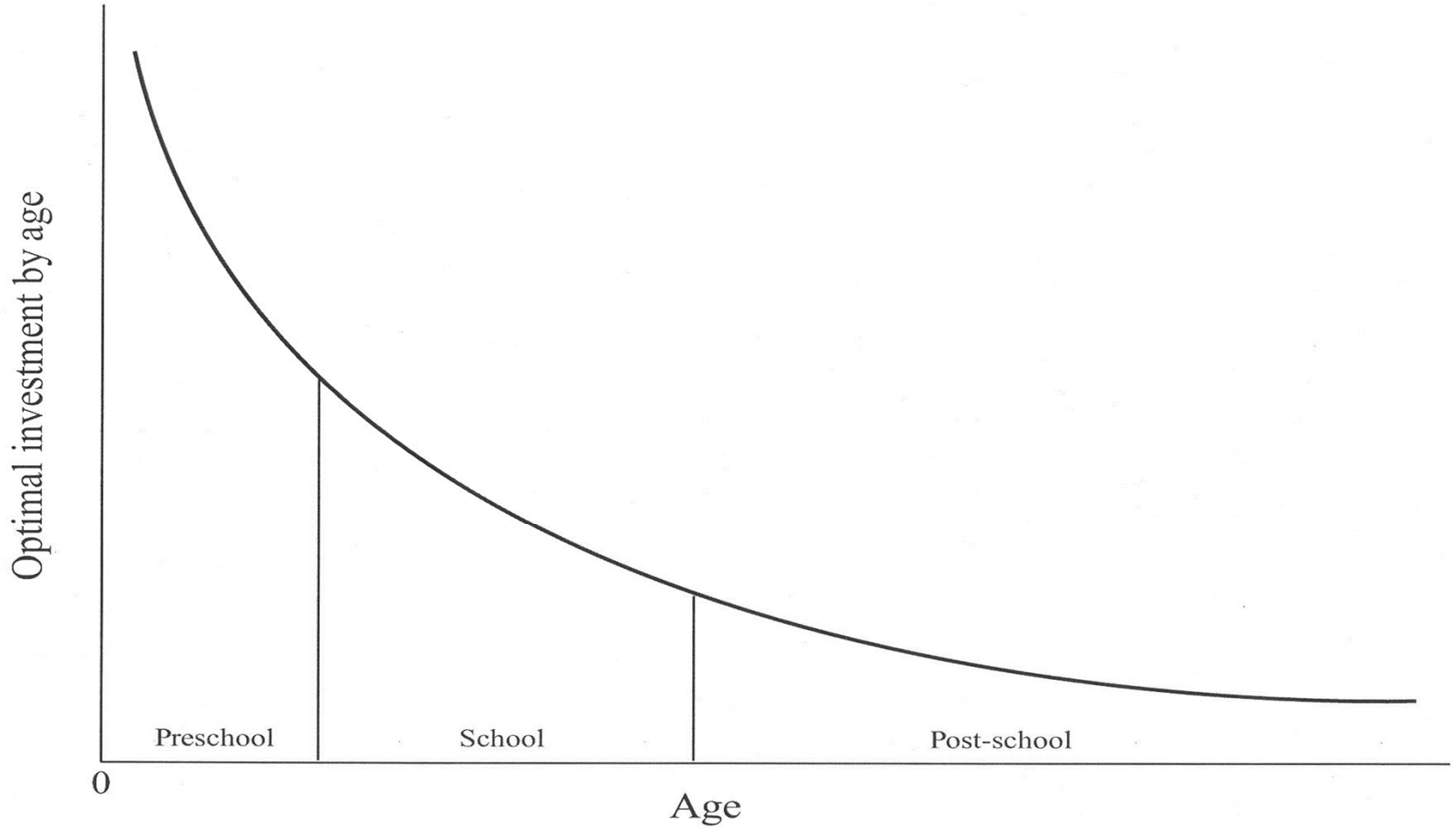
- Another $45 million in spending created by the industry's gross receipts
- Total spending impact is $130 million

ECE produces significant returns to investment in HC

- Returns to education are highest for ECE
- Decline for school programs and job training

** Cunha, Heckman, Lochner, Masterov, May 2005*

Figure 1B
(b) Optimal investment levels



***Cunha, Heckman et al*

Why is ROI in ECE high

- Self Productivity
  - Skills attained at early stages of life increase skill attainment at later stages
- Complementarity
  - Early investment facilitates productivity of later investment

***Cunha, Heckman et al*

Skill formation has a multiplier effect

- Skills at a specific stage of life depend on investment in the child not only at that stage but at previous stages
- Types of Skills
  - Cognitive
  - Non-cognitive

Cognitive

- Language
- Reading
- Mathematics

Non-Cognitive

- Motivation
- Self-Control
- Perseverance
- Dependability
- Consistency
- Self Esteem
- Optimism

Development of skills support each other

- Non-cognitive skills contribute to formation of cognitive skills
- Cognitive skills contribute to the formation of non-cognitive skills
- Overemphasis of one over the other is not sound policy

Other findings

- Gaps in skills appear before schooling begins
- Highest returns for early investment in children of lower income families
- Returns from later schooling are higher for children from higher income families
- On the whole increasing non-cognitive skills produces better results than increasing cognitive skills for both sexes

Cunha, Heckman et al **

Longitudinal Studies

- Study results are over a long period of time
- Indicates impacts on participants and benefits to society

The High /Scope Perry Preschool Program

The program group at age of 40:

- Was more likely to have graduated from high school
- Had significantly higher median annual earnings
- Had a higher percentage of home-owners
- Was more likely to have a savings account

- Had significantly fewer arrests and months in prison
- The public gained $12.90 for every dollar spent on the program
- Experienced higher rates of return for males than females because of impact from reducing crime

The Carolina Abecedarian Study

The children who participated:

- Had higher IQ tests and academic achievement
- Had been less likely to repeat grades
- Had been less likely to be placed in special education classes
- Had been more likely to complete high school
- Had been more likely to attend a four-year college

The Chicago Longitudinal study

Children enrolled :

- Had significantly higher cognitive readiness
- Had lower rates of special education placement
- Were less often retained
- Demonstrated higher math and reading achievement levels

Question: What is "High Quality ECE"

Not clearly defined. Could be a function of:

Inputs

- Age when begin education (0 to 5)
- Time spent per day
- Child-teacher ratio
- Meals/snacks provided
- Curriculum
- Teacher Education
- Environment/facilities

Outputs

- Skill tests
- Non-Cognitive Evaluations
- Observation
- Parental Response

Measuring Outcomes

Education Level	Median annual earnings	Premium over high school graduates (percents)	Premium over high school graduates (dollars)
Professional	$76,356	210%	$51,700
Ph. D.	$66,002	168%	$41,346
Master's	$50,399	104%	$22,952
Bachelor's	$40,939	66%	$12,838
High School (including GED)	$24,656	----	----
9th-12th grade, non-graduates	$18,445	(25%)	($6,211)
Less than 9th grade	$15,801	(36%)	($8,855)

Source: U.S. Census Bureau, March 2002 Current Population Survey

Uses workers age 25+ at time of survey, with earnings in 2001

Conclusions

- ECE creates higher returns from secondary and post secondary education
- ECE must be followed up by quality elementary, secondary and post secondary education for maximum results
- Development of both cognitive and non-cognitive skills have direct impact on employment opportunities.

Conclusions (con't)

- ECE is a major economic driver in WV economy
- ECE has positive impact on a region's economic development

For a copy of this slide show you may visit the following website:

www.marshall.edu/cber