

WORKFORCE **NARRATIVE PROJECT**

**Investing in the Adult Workforce:
An Opportunity to Improve Children's Life Chances**

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Introduction

Whether to invest in workers through publicly funding job training, education, or other employment-related supports is often guided by an expectation of whether such investments will pay off. A good human capital investment literally makes more money than it costs by increasing workers' skills and productivity. Yet these are not the only benefits that may accrue from such investments. Many workers, although certainly not all, are also parents, and human capital accumulation is an intergenerational process. Improving the educational and employment prospects for parents in the workforce today may also do the same for their children as they enter the workforce tomorrow.

Children of low-skilled parents are, on average, less well prepared when they enter school. Whether measured by parents' incomes or level of education, disadvantaged children have lower levels of early academic skills than other children. A recent national survey suggests that poor children enter school nearly seven months behind their peers in their math and reading skills. Children of mothers without a high school degree enter school performing academically nearly a year and two months behind their peers with college-educated parents.¹

Early skills provide the foundation for later learning.² Consequently, these skill gaps between more and less advantaged children persist throughout childhood and adolescence and ultimately lead to large and lasting effects on children's labor market prospects. Children from disadvantaged families are more likely to drop out of high school, to bear children out of wedlock, and to be idle (neither working nor in school) in early adulthood. For example, about 21% of young adults from low-income families do not complete high school compared with just 4% of those from wealthy families.³ Similarly, about half of children whose parents have not completed a high school degree are not academically qualified to attend a four-year college compared with only 15% of children of college-educated parents.⁴ Not surprisingly, differences in academic preparedness translate into differences in college attendance. About 21% of children whose parents had a high school education enroll in a four-year college compared with 65% of adolescents with college-educated parents. The economic advantages of such higher levels of education are well documented. More skilled and educated workers are more productive, and thus they have higher earnings and greater success in the labor market.⁵

If we invest in low-skilled workers and improve skills and incomes, their children are likely to reap the rewards and be better positioned in the labor market when they enter adulthood. If we fail to invest in today's workforce, we not only forgo an opportunity to possibly increase the productivity of current workers but also the future productivity of their children. Parents are their children's first and best teachers. Without further investments in today's workforce, we fail to prepare tomorrow's workforce.

Investing in Parental Education

By some indications, U.S. children are better positioned today to succeed than in years past. Educational attainment of parents increased substantially between 1975 and 2003.⁶ In this

period, the proportion of children whose mothers had not graduated from high school dropped from 30% to 16%. Yet, despite these improvements, many children grow up with parents that are not well educated and have low levels of skills. Some 20% of the U.S. workforce is functionally illiterate, and rates of high school completion have been on the decline since the early 1990s.⁷

The range of ways in which parents contribute to their children's health and school success are numerous, and the same literacy, numeracy, and problem-solving skills that make good workers may also make for good parents.⁸ Often it is assumed that parental education benefits children indirectly by enabling parents to secure higher-paying jobs. Although this is likely true, we also know that there are many other important ways in which higher levels of parental education will improve children's well-being. More highly educated parents are more likely to provide their children home learning environments that support academic success, for example, by providing rich language and literacy environments and engaging children in learning activities.⁹ They also tend to use teaching strategies with their children that mimic formal instructional techniques, such as asking questions and offering feedback rather than issuing directives.¹⁰ Once children enter school, more educated parents tend to be more involved in their children's schooling and to be better attuned to how their children are performing in school, which may enable them to assist their children if problems arise.¹¹ Taken together, research suggests these factors enable more educated parents to better prepare their children to enter school and to support their children's learning throughout childhood and adolescence.

An obvious avenue to improve parents' education may be to reform and improve our public education system so that youth acquire the job skills they need before they have children. Yet this is not the only, and perhaps not the most effective way to improve parents' education.¹² Evidence suggests that traditional patterns of completing education and beginning a career before starting a family are no longer applicable for large cross sections of the U.S. population. It has become increasingly common for adults to accrue education in a discontinuous fashion, and to extend their schooling well into adulthood.¹³ National estimates suggest that now over 20% of adult women pursue some type of education, and as a result about 27% of all female college students are over age 25.¹⁴ Economically disadvantaged mothers are particularly likely to return to school later in life. Recent studies find that close to 50% of low-income mothers attend school at some point after the birth of their children.¹⁵

One reason why parents, particularly disadvantaged mothers, may return to school is that they realize how difficult it is to provide for their family working low-skill, low-wage jobs.¹⁶ Further education and training holds the promise of a better life for themselves and their children.¹⁷ Yet does such education lead to better opportunities for their children? Furstenberg, Brooks-Gunn, and Morgan's research with poor, black adolescent mothers and their children in Baltimore provides a compelling portrait of the possible benefits.¹⁸ As the children grew up, some fared well, whereas others did not. One key predictor of whether these children had good outcomes was whether their mothers persisted in their schooling or returned to school later in life. If mothers completed more schooling, their children were less likely to drop out of high school or to become teen parents.

Although Furstenberg and colleagues' work is suggestive, to some it may not be entirely persuasive. Parents who obtain more schooling tend to be different from other parents in potentially important ways. For example, they may have higher levels of aspirations or skills to begin with, and these pre-existing differences may be what really matters for their children.¹⁹ This concern has set scholars clamoring for a clever way to disentangle parental education from other key parental characteristics, and to determine whether additional education itself will improve children's well-being. Results from these recent rigorous studies have provided consistent and rigorous evidence that improvements in low-skilled parents' education have positive payoffs for children. Moreover, these links are found across a range of potentially important outcomes, including birth outcomes, school readiness, academic achievement, grade retention, and educational attainment.²⁰ Certainly, a higher birth weight and reductions in grade retention will not drastically change the life course of all disadvantaged children, but these improvements will likely set the next generation off into the labor market on better footing.²¹

On the surface, these findings seem to contradict the findings that came out of the National Evaluation of Welfare-to-Work Strategies Evaluation (NEWS), the evaluation of the Job Opportunity and Basic Skills Program conducted in the 1990s. The program tested the effectiveness of two different approaches to welfare reform. The first approach emphasized a quick entry into the labor market, and was termed the Labor Force Attachment (LFA) approach. The second approach focused on providing participants with the education and training necessary to obtain a good job, and was deemed the Human Capital Development (HCD) approach. Participants were randomly assigned to one of the two program groups or to a comparison group which experienced existing welfare policies. Failure to comply with the programs resulted in financial sanctions, which reduced a participant's cash assistance.²²

After two years, a follow-up study was conducted to assess whether the LFA and HCD program had improved participants employment prospects. The Department of Health and Human Services had the foresight to add a child assessment component to the evaluation in three sites. The contrast between the HCD and comparison-group participants had the potential to reveal the extent to which benefits from education and training spilled over from mother to child. The experimental contrast, however, was not as clear as might be expected. The HCD educational activities were geared to improving participants' abilities to the point that they were sufficiently skilled to find employment. Thus, for many mothers education or training was a short-term endeavor. About 50% of the HCD group participated in education or work-related activities, on average, for about 8 months. In keeping with the program goals, Adult Basic Education (28%) and vocational training (17%) were most common. The control group, however, was not restricted from pursuing educational training on their own, and many did so. About 25% of the control group participated in some type of education, most often college (11%). Consequently, the experiment was not particularly successful in generating an educational advantage among the HCD participants. Two years after the program began, on average, the HCD group had participated in less than two months more education than the comparison group.²³

These relatively high rates of educational participation among the comparison group of AFDC recipients and applicants are not surprising. Recall that other studies have found similarly high rates of education among disadvantaged mothers, suggesting that without any intervention

or programmatic mandate many low-income parents try to improve their education and training. Yet, such a small difference in educational participation between the two groups is problematic if one hopes to estimate the effects of mothers' schooling by comparing their children. As expected, there were no discernable differences between the children of the HCD mothers and of the control-group mothers.

Fortunately, the NEWWS data could be used for more than just this basic experimental comparison. Subsequent analyses were able to leverage the experimental difference in educational participation to more specifically identify the effects of mothers' educational participation on their children.²⁴ Results indicate that mothers' educational participation was linked to improvements in young children's school readiness and reductions in special education placement or grade retention. Moreover, mothers' educational participation was linked to high-quality home environments, suggesting that this may be the mechanism that explains these effects. In addition, several subsequent non-experimental studies with other large national data sets have confirmed that children's academic skills improve when low-skilled mothers complete additional education.²⁵

Investments in Other Forms of Workforce Development

What about the potential of other forms of workforce development to improve children's life chances? Many workforce investment programs bypass education altogether, focusing instead on transitioning workers into jobs by providing job placement, work supports, enhanced earning incentives, or other forms of assistance. By investing in these programs for current workers will we also improve their children's education or health? Research suggests that whether these types of programs will have positive effects on children depends on whether the programs are successful in improving both parents' employment and family income among disadvantaged populations.

Trends in family poverty have been less sanguine than trends in parental education. Poverty rates have fluctuated with economic cycles, but largely remained unchanged in the recent past, hovering between 16% and 20%. The child poverty rate declined in the mid-nineties as employment and wages for low-educated women improved, and but increased during the economic downturn in the early 2000s.²⁶

Research has found consistent links between family income and children's achievement as well as their success later in life. It is easy to imagine how children are advantaged by their parents' higher incomes. Parents with more money are able to buy a larger range of goods and services for their families, such as prenatal health care, nutrition, and learning opportunities both in the home and outside the home. Financial resources also enable families to live in safe and stimulating neighborhoods and, for older children, provide access to higher-quality schools and a college education.²⁷ It is also easy to imagine how financial hardship and unexpected job loss may be distressing for many parents. Being unable to meet household and other basic expenses may cause some poor parents to feel frustrated, helpless, and depressed.²⁸ This distress may, in turn, lead to less responsive and more harsh and punitive parenting, which hinders the development of children's socio-emotional well-being and academic achievement.²⁹

Simply transitioning workers into the formal labor market may not lead to improvements in family income as increases in parents' earning may be offset by losses in other benefits, such as food stamps. In addition, work-related expenditures, for example, child care and transportation costs, may increase, and thus low-wage work may leave families no better off financially than they when they were when not working.³⁰ Consequently, it should not be a surprise that studies of the effects of parental employment on children suggest that there is little benefit (or harm) to children when their mothers transition into low-wage employment in the absence of additional work supports.³¹

Increases in parental employment when coupled with work supports, particularly wage supplements and subsidized child care, however, do seem to improve young children's achievement.³² A series of experimental welfare reform evaluation studies undertaken during the 1990s provided an opportunity to observe how increases in employment and family income affect poor children's development. Although all of the experimental programs increased parental employment, only some of the programs also supplemented parents' earnings. Preschool and elementary-school children's academic achievement was improved by reforms that increased income, but not by programs that only increased parental employment.³³ Similarly, family income increases that result from expansions of the Earned Income Tax Credit, a credit that provides cash benefits to working poor parents, lead to improvements in children's math and reading achievement.³⁴ On the other hand, job displacements that lead to large losses of family income may have long-term negative effects on children's subsequent earnings.³⁵

The Case for Workforce Investments

The case for investing in children is often made on moral grounds.³⁶ We worry that some children are disadvantaged from the start, whereas others are privileged, and this seems to run counter to our hope that all children have equal opportunities. We hope that assisting children may even the proverbial playing field by giving disadvantaged children a chance to succeed. In contrast, the case for investing in adults most often relies on our economic sensibilities. We seem to expect, if not accept, that not all adults will be well-educated or equally well compensated. Consequently, the most persuasive arguments for investing in adult workers often rest on the economic efficiency of such investments. Adult education and training programs are only useful if they produce tangible benefits to individuals, businesses, and society that exceed their costs, for example, by increasing workforce productivity and decreasing crime or welfare dependence. Such parsing of moral and economic arguments, however, ignores the fact that children's life chances are closely linked to their parents' life chances.

Much of the early disparities in children's achievement can be traced back to their family experiences before they enter school.³⁷ Parents with higher levels of education and financial resources are better able to provide their children with the types of learning environments that facilitate academic skills and they are able to be more responsive to the social and emotional needs of their children. Put most simply, the difference between growing up in a supportive home environment or not is essentially the difference between have an opportunity to succeed later in life or not.

Many disadvantaged parents recognize that their low skills and financial resources limit their ability to provide their children with the type of opportunities that will facilitate their success. They want their children to do well in school, and they are willing to work hard in order to offer their children a better future. Yet in comparison with more affluent families, disadvantaged parents face numerous challenges when they try to improve their skills and have access to far fewer sources of support.³⁸ Problems of affordability and availability of education and job training programs constrain their ability to make substantial investments in their own education and training. In addition, they face numerous challenges in trying to balance the caregiving demands of being a parent and a student on a tight budget. Consequently, public support for programs that enable parents to pursue further education and training can make a difference not only in a parent's life, but also their children's lives.

Investing in adults will not only provide their children with more opportunities to succeed, but will also reduce the social and public costs of growing up with low levels of skills. Evidence suggests that parents who succeed in completing additional schooling or secure a higher-paying job are likely to have children with better health, schooling, and labor market outcomes.³⁹ These improvements in children's development may translate into substantial economic benefits. Better child health and schooling means that schools will be able to spend less money remediating achievement problems through special education placement or grade retention, both of which are costly to taxpayers. If as a result more children complete high school and pursue postsecondary education, then tomorrow's workers will have better skills, need less subsequent education or job training, and in general be more productive. Higher skills and productivity will likely translate into higher earnings, which in turn will lead to higher tax revenues. Improving the skills of tomorrow's workers is likely to be critical to sustaining the pace of U.S. economic growth, as the increasing education of the workforce which fueled economic growth in the recent past have stalled. As a result, projections suggest that fewer skilled high school and college graduates will be added to the workforce in the future than in the past.⁴⁰ Finally, there is also some good reason to believe that higher levels of education may lead to lower rates of crime and nonmarital births as well as welfare receipt. Although all such cost savings will be realized in the future, long after the investments in current workers are made, these possible benefits should be taken into consideration when estimating costs and benefits of workforce development.

Successful investments in adult workers hold great promise, and the stakes are high. Raising parents' skills and incomes will enable parents to provide home environments that will better prepare their children for school and to be productive members of society. It will reduce the large disparities in opportunities that children face by virtue of their birth. It will also possibly yield substantial economic benefits by reducing the costs associated with educating low-skilled children and preparing the workforce of tomorrow. What if we fail to help parents meet their educational and training goals? Certainly, some parents will persevere and manage to raise their own skill levels without any support, and their children will likely be better off. Others, however, will not, and as a result policymakers will be plagued by the same challenges they face today—costly educational and social welfare systems that try, but often fall short of remedying the multitude of problems that arise from the intergenerational transmission of low skills.

References

- Alexander, K. L., Entwisle, D. R., & Bedinger, S. D. (1994). When expectations work: Race and socioeconomic differences in school performance. *Social Psychology Quarterly*, 57(4), 283-299.
- Astone, N. M., Schoen, R., Ensminger, M., & Rothert, K. (2000). School reentry in early adulthood: The case of inner-city African Americans. *Sociology of Education*, 73, 133-154.
- Black, S., Devereux, P. J., & Salvanes, K. J. (2003). Why the apple doesn't fall far: Understanding the intergenerational transmission of human capital. *American Economic Review*, 95, 437-439.
- Bradley, R. H. & Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual Review of Sociology*, 53, 371-399.
- Bornstein, M.H., Hahn, C. S., Suwalsky, J. T. D., & Haynes, O. M. (2003). Socioeconomic status, parenting and child development: The Hollingshead Four Factor Index of Social Status and the Socioeconomic Index of Occupations. In M. H. Bornstein, & R.H. Bradley (Eds.), *Socioeconomic Status, Parenting, and Child Development* (pp. 29-82). Mahwah, NJ: Lawrence Erlbaum.
- Brody, G. H., & Flor, D. L. (1998). Maternal resources, parenting practices, and child competence in rural, single-parent African American families. *Child Development*, 69(3), 803-816.
- Brooks-Gunn, J., Guo, G., & Furstenberg, F. F. (1993). Who drops out of and who continues beyond high school? A 20-year follow-up of Black urban youth. *Journal of Research on Adolescence*, 3(3), 271-294.
- Caneiro, P., & Heckman, J. (2003). Human capital policy. In J. Heckman and A. Krueger (eds.), *Inequality in America: What role for human capital policies?* Cambridge, MA: MIT Press.
- Card, D. (1999). The causal effect of education on earnings In O. Ashenfelter and D. Card (eds.), *Handbook of Labor Economics*, Vol. 3, Part A, (pp 1801-1863). Elsevier.
- Chase-Lansdale, P. L., et al. (2003). Mothers' transitions from welfare to work and the well-being of preschoolers and adolescents. *Science*, 299, 1548-1552.
- Clark-Kauffman, E., Duncan, G., & Morris, P. (2004). How welfare policies affect child and adolescent achievement. *American Economic Review*, 93, 299-303.
- Conger, R. D., Wallace, L. E., Sun, Y., Simons, R. L., McLoyd, V. C., & Brody, G. H. (2002). Economic pressure in African American families: A replication and extension of the family stress model. *Developmental Psychology*, 38(2), 179-193.

- Currie, J., & Moretti, E. (2003). Mother's education and the intergenerational transmission of human capital: Evidence from college openings. *Quarterly Journal of Economics*, 118, 1495-1532.
- Dahl, G., & Lochner, L. (2005). The impact of family income on child achievement. Cambridge, MA: National Bureau of Economic Research Working Paper No 11279.
- Danziger, S., Heflin, C., Corcoran, M., Oltmans, E. & Wang, H. (2002). Does it pay to move from welfare to work? *Journal of Policy Analysis and Management*, 21, 671-692.
- Davis-Kean, P. E. (2005). The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology*, 19, 294-304.
- Duncan, G., & Brooks-Gunn, J. (1997). *Consequences of growing up poor*. New York: Russell Sage Foundation.
- Duncan, G. and Magnuson, K. A. (2004). Individual and parent-based intervention strategies for promoting human capital and positive behavior. In P. L. Chase-Lansdale, K. Kiernan, and R. Friedman (Eds.), *Human development across lives and generations: The potential for change* (pp.93-135). New York; Cambridge University Press.
- Edin, K., and Lein, L. (1997). *Making ends meet*. New York, NY: Russell Sage Foundation.
- Evans, G. (2004). The environment of childhood poverty. *American Psychologist*, 59, 77-92.
- Fitzgerald, J. (1991). Welfare durations and the marriage market. *Journal of Human Resources*, 26, 545-560.
- Furstenberg, F. F., Brooks-Gunn, J., & Morgan, S. P. (1987). *Adolescent mothers in later life*. New York: Cambridge University Press.
- Guo, G., & Mullan Harris, K. (2000). The mechanisms mediating the effects of poverty on children's intellectual development. *Demography*, 37, 431-447.
- Hamil-Luker, J. (2005). Trajectories of public assistance receipt among female high school dropouts. *Population Research and Policy Review*, 24, 673-94.
- Hamilton, G., Brock, T., Farrell, M., Friedlander, D., & Harknett, K. (1997). *Evaluating two welfare-to-work program approaches: Two year findings on the Labor Force Attachment and Human Capital Development Programs in Three Sites*. Washington, CD: United States Department of Health and Human Services Office of the Assistant Secretary for Planning and Evaluation Administration for Children and Families.

- Haveman, R., & Wolfe, B. (1995). The determinants of children's attainments: A review of methods and findings. *Journal of Economic Literature*, 23, 1829-1878.
- Heckman, J. (2006). Skill formation and the economics of investing in disadvantaged children. *Science*, 312 (5782), 1900-1902.
- Hill, N., Castellino, D. R., Lansford, J. E., Nowlin, P., Dodge, K. A., Bates, J. E. et al. (2004). Parent academic involvement as related to school behavior, achievement, and aspirations: Demographic variations across adolescence. *Child Development*, 75, 1491-1509.
- Jacobs, J. & Stoner-Eby, S. (1997). Adult enrollment in high education and cumulative educational attainment, 1970-1990. *Annals of the American Academy of Political and Social Science*, 559, 91-108.
- Johnson, R. & Schoeni, R. (2007). The influence of early-life events on human capital, health status, and labor market outcomes over the life course. Working paper, University of California, Berkeley.
- Laosa, L. (1980). Maternal teaching strategies in Chicano and Anglo-American families: The influence of culture and education on maternal behavior. *Child Development*, 51, 759-765.
- Lee, V. E., & Burkam, D. (2002). *Inequality at the starting gate: Social background differences in achievement as children begin school*. Washington, DC: Economic Policy Institute.
- Lochner, L., & Moretti, E. (2004). The effect of education on crime: Evidence from prison inmates, arrests, and self-reports. *American Economic Review*, 94, 155-189.
- Love, J. M., Kisker, E. E., Ross, C. M., Schochet, P. Z., Brooks-Dunn, J., Paulsell, D., Boller, K., Constantine, J., Vogel, C., Fuligni, A. S., & Brady-Smith, C. (2002). *Making a difference in the lives of infants and toddlers and their families: The impacts of Early Head Start. Volume 1: Final technical report*. Princeton, NJ: Mathematica Policy Research.
- Magnuson, K. (2003). The effect of increases in welfare mothers' education on their young children's academic and behavioral outcomes. University of Wisconsin-Madison, Institute for Research on Poverty Discussion Paper, 1274-03.
- Magnuson, K. (2006). *The effect of increases in maternal education on children's academic achievement: Evidence from the NLSY*. University of Wisconsin-Madison, under review.
- Magnuson, K.A., & Duncan, G. (2002). Parents in poverty. In Bornstein (Ed.), *Handbook of Parenting* (pp. 95-121). Mahwah, NJ: Lawrence Erlbaum.
- McGroder, S. M., Zaslow, M. J., Moore, K. A., & LeMenestrel, S. M. (2000). *National Evaluation of Welfare-to-Work Strategies impacts on young children and their families two years after enrollment: Findings from the child outcomes study*. Washington, DC: United

States Department of Health and Human Services Office of the Assistant Secretary for Planning and Evaluation, Administration for Children and Families.

- McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *American Psychologist*, 53(2), 185-204.
- Mistry, R., Biensanz, J., & Taylor, L. (2004). Family income and its relation to preschool children's adjustment for families in the NICHD study of early child care. *Developmental Psychology*, 40, 727-45.
- Moffit, R., & Winder, K. (2005). Does it pay to move from welfare to work? A comment on Danziger, Heflin, Corcoran, Oltmans, and Wang. *Journal of the Association of Public Policy and Management*, 24, 399-409.
- Morris, P., Duncan, G., & Kaufman, E. (2005). Child well-being in an era of welfare reform: The sensitivity of transition in development to policy change. *Developmental Psychology*, 41, 919-932.
- Neiss, M., & Rowe, D. C. (2000). Parental education and child's verbal IQ in adoptive and biological families in the National Longitudinal Study of Adolescent Health. *Behavior Genetics*, 30, 487-495.
- Oreopoulos, P., Page, M., & Stevens, A. (2005). The intergenerational effects of worker displacement. Cambridge, MA: National Bureau of Economic Research Working paper 11587.
- Oreopoulos, P., Page, M. & Stevens, A. (2006). The intergenerational effects of compulsory schooling. *Journal of Labor Economics*, 24, 726-60.
- Plug, E. (2004). Estimating the effect of mothers' schooling on children's schooling using a sample of adoptees. *American Economic Review*, 94, 358-368.
- Polakow, V., Butler, S., Deprez, L. S., & Kahn, P (Eds). (2004). *Shut out: Low income mothers and higher education in post-welfare America*. Albany, NY: State University of New York Press.
- Raviv, T., Kessenich, M, & Morrison, F.J. (2004). A mediational model of the association between socioeconomic status and three-year-old language abilities: The role of parenting factors. *Early Childhood Research Quarterly*, 19 (4), 528-547.
- Rich, L. M., & Kim, S. (1999). Patterns of later life education among teenage mothers. *Gender and Society*, 13, 798-817.
- Roderick, M. (1994). Grade retention and school dropout: Investigating the association. *American Education Research Journal*, 31, 729-759.

- Rosenzweig, M. R., & Wolpin, K. I. (1994). Are there increasing returns to intergenerational production of human capital? *Journal of Human Resources*, 29, 670-693.
- Sacerdote, B. (in press). How large are effects from changes in family environment? A study of Korean Adoptees. *Quarterly Journal of Economics*.
- Shin, H. B. (2005). School enrollment—social and economic characteristics of students: October 2003. *Current Population Reports*, U.S. Census Bureau.
- Shonkoff, J. P., & Phillips, D. A. (2000). *From neurons to neighborhoods: The science of early childhood development*. Washington, DC: National Academy Press.
- Sobel, M. E. (1998). Causal inference in statistical models of the process of socioeconomic achievement. *Sociological Methods and Research*, 27, 318-348.
- Stevenson, D. L., & Baker, D. P. (1987). The family-school relation and the child's school performance. *Child Development*, 58 (5), 1348-1357.
- Upchurch, D., Lillard, L., & Panis, C. W. A. (2002). Non-marital childbearing: Influences of education, marriage and fertility. *Demography*, 39, 311-329.
- Zachry, E. M. (2005). Getting my education: Teen mothers' experiences in school before and after motherhood. *Teachers College Record*, 207, 2566-2598.

Endnotes

¹ These data were calculated from the Early Childhood Longitudinal Study, Kindergarten Cohort, by the author with the assumption that children learn approximately a standard deviation of skills in the first year of schooling. The difference for poor children is about 0.7 of a standard deviation and for children of mothers with less than a high school diploma about 0.8. Assuming that kindergartners learn about a standard deviation during the school year and the standard school year calendar includes about 10 months of school, these differences would translate into about 7 and 8 months of school respectively.

² Shonkoff & Phillips, 2000.

³ <http://nces.ed.gov/programs/digest/d03/tables/dt108.asp>

⁴ <http://nces.ed.gov/pubs2001/2001072.pdf>

⁵ Card, 1999.

⁶ Shonkoff & Phillips, 2000; http://nces.ed.gov/pubs2005/nativetrends/ind_5_1.asp.

⁷ *International Adult Literacy Survey, 2002: User's Guide*, Statistics Canada, Special Surveys Division, National Literacy Secretariat, and Human Resources Development Canada (Statistics Canada, Ottawa, Ontario, 2002).

⁸ Haveman & Wolfe, 1995. Much of the literature focuses specifically on mothers' education rather than parents' education (Bornstein, Hahn, Suwalsky, & Haynes, 2003). This is primarily because mothers are children's primary caregivers, and because for an increasing proportion of children, fathers are not present in the child's home.

⁹ Davis-Kean, 2005; Raviv, Kessenich, & Morrison, 2004.

¹⁰ Laosa, 1980.

¹¹ Alexander, Entwisle & Bedinger, 1994; Brody & Flor, 1998; Hill et al., 2004; Stevenson & Baker, 1987.

¹² For example, very few high school dropout prevention programs have proven successful; see Duncan and Magnuson (2004) for a discussion of this literature.

¹³ Astone et al., 2000; Jacobs & Stoner-Eby, 1997.

¹⁴ Rich & Kim, 1999; Shin, 2005.

¹⁵ Love et al., 2002; McGroder et al., 2000; Rich & Kim, 1999.

¹⁶ Polakow, Butler, Deprez, & Kahn, 2004.

¹⁷ Zachry, 2005.

¹⁸ Furstenberg, Brooks-Gunn, & Morgan, 1987.

¹⁹ Brooks-Gunn, Guo, G. & Furstenberg, F., 1993. Sobel, 1998.

²⁰ Black, Devereux, & Salvanes, 2003; Currie & Morretti, 2003; Neiss & Rowe, 2000; Oreopoulos, Page, & Stevens, 2006; Plug, 2004; Rosenzweig & Wolpin, 1994; Sacerdote, in press.

²¹ Both having a low birth weight and being retained has been linked to lower levels of education or earnings (Johnson & Schoeni, 2007; Roderick, 1994). Research is less consistent as to whether additional education and training for already well-educated parents will benefit children, although some evidence suggests that it is unlikely to do so (Magnuson, 2006; Sacerdote, in press).

²² For a detailed description of the programs, see Hamilton et al. and for further discussion of the Child Outcome Study (COS) see McGroder et al., 2000.

²³ By the time of the five-year follow-up survey, the control group rates of education participation increased to 40%, and there was no detectable difference at all between the control and experimental groups in terms of months of educational participation (Magnuson, 2003).

²⁴ Magnuson, 2003.

²⁵ Rosenzweig & Wolpin, 1994; Magnuson, 2006.

²⁶ <http://www.childtrendsdatbank.org/indicators/4Poverty.cfm>

²⁷ Bradley & Corwyn, 2002; Duncan & Brooks-Gunn, 1997; Evans, 2004; Guo & Harris, 2000; Magnuson & Duncan, 2002; McLoyd, 1998.

²⁸ Conger et al., 2002; McLoyd, 1998; Mistry, Biensanz, & Taylor, 2004.

²⁹ Conger et al., 2002; McLoyd, 1998; Mistry, Biensanz, & Taylor, 2004;

³⁰ Edin & Lein, 1997; see also Danziger et al. (2002) and Moffitt and Winder (2005) for a recent discussion of the economic trade-offs between employment and welfare.

³¹ Morris, Duncan, & Kaufman, 2005; Chase-Lansdale et al., 2003.

³² Morris et al., 2005.

³³ Morris et al., 2005.

³⁴ Dahl & Lochner, 2006.

³⁵ Oreopoulos, Page, & Stevens, 2005.

³⁶ Heckman, 2006.

³⁷ Heckman, 2006.

³⁸ Polakow, Butler, Deprez, & Kahn, 2004.

³⁹ The evidence for better health, achievement, and educational attainment is direct. However, the evidence for labor market and other adult outcomes is indirect, and premised on the realization of increases in academic skills or educational attainment, as these have been linked with earnings (Card, 1999), nonmarital childbearing (Upchurch, Lillard, & Pannis, 2002), crime (Lochner & Moretti, 2004), and welfare receipt (Fitzgerald, 1996; Hamil-Luker, 2005).

⁴⁰ Caniero & Heckman, 2003; Heckman, 2006.