

Fully Funding Head Start Will Raise Graduation Rates and Cut Crime



A Research Brief by FIGHT CRIME: INVEST IN KIDS

FIGHT CRIME: INVEST IN KIDS is the anti-crime organization of more than 3,000 police chiefs, sheriffs, prosecutors, other law enforcement leaders and violence survivors nationwide. Our members believe that one of the best ways to prevent crime is to give kids the right start in life.

Summary

It is widely recognized that more Americans will need at least a high school diploma to compete in the 21st Century. New data on high school graduation rates show that our schools are often doing very poorly in this regard, even miserably in many places. Rigorous research has established the strong link between high school graduation and reduced crime: increasing graduation rates by 10 percentage points would cut murders and assaults by 20 percent. High-quality pre-kindergarten is one of the few proven strategies for increasing graduation rates and cutting crime. Only half of all eligible children currently receive Head Start due to inadequate funding. Expanding Head Start to make it available to all eligible children, if done right, could increase graduation rates by 10 percentage points for the children served, producing 50,000 additional high school graduates every year, 200 fewer murders and 5,000 fewer assaults.

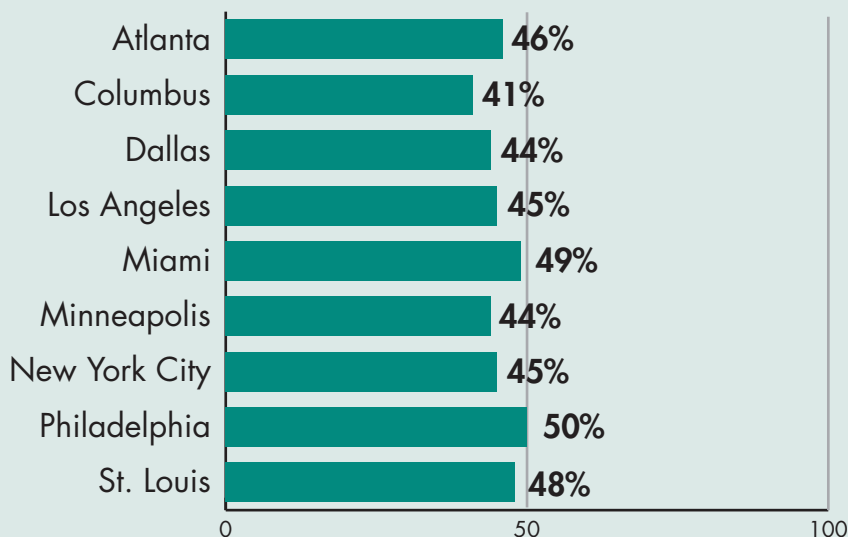
The law enforcement leaders of FIGHT CRIME: INVEST IN KIDS know that increasing graduation rates in America will be crucial for reducing violent crime. It is time to expand and improve Head Start now. Every year that passes adds another year of children at higher risk of dropping out and ending up in prison.

The first accurate measure of graduation rates for every school district in the country shows the situation is worse than previously reported

States and local school districts have been using differing, and sometimes very misleading, methodologies to measure high school graduation rates. Many districts have assumed, without evidence, that students who stopped showing up for class were enrolled somewhere else.

Chris Swanson, one of the leading national researchers on graduation rates, used the Department of Education's census tracking of students and a simple methodology to produce new graduation rates for the Editorial Projects in Education (EPE) Research Center. Then he compared that to the number of students awarded regular diplomas within four years to derive his rates.¹ These results were recently released at a summit in Washington D.C. with First Lady Laura Bush and Education Secretary Margaret Spellings,² and they are easily accessible on the web for every school district.³ The nations' 50 governors have made a commitment to adopt a similar approach for reporting graduation rates.⁴

Selected City School Districts With Graduation Rates of 50% or Less



Editorial Projects in Education Research Center

In 2004, the latest year for which data is nationally available, only 70 percent of students nationwide earned diplomas within four years.⁵ This is much lower than the inflated rates reported by most states and local school districts [See Appendix B for a longer list of figures on each state and selected cities].⁶

Secretary Spellings warned of “dropout factories...where graduation is a 50-50 shot or worse.” She said, “It’s hard to believe such a pervasive problem has remained in the shadows for so long.”⁷

Dragging down our economy and driving up crime

Because high school dropouts are much more likely to be unemployed or working in low-skilled, low-paying jobs, their lifetime earnings are significantly lower than the incomes of high school graduates. Measured by income, high school graduates are more productive. Henry Levin of Columbia University and his colleagues concluded that, over their lifetime, white male high school graduates earn \$322,000 more on average than white male dropouts. All high school graduates will pay, over their lifetimes, an average of almost \$140,000 more in taxes than dropouts. High school graduates will also cost the public on average \$40,000 less in public health expenditures than dropouts.⁸

Dropouts and crime are closely linked. The United States Justice Department reports “68 percent of State prison inmates did not receive a high school diploma.”⁹ Lance Lochner, an economist from the University of Western Ontario, and Enrico Moretti, an economist from the University of California at Los Angeles, studied how increased graduation rates impacted crime. From that research they

concluded that “a 10 percentage point increase in graduation rates would reduce murder and assault arrest rates by about 20 percent.”¹⁰

Improving graduation rates is not easy

Levin and his colleagues conducted an extensive search of programs impacting graduation and “found very few interventions that demonstrably increased high school graduation rates on the basis of rigorous and systematic evaluation.”¹¹ They cited only five programs with rigorous proof that they can improve graduation rates compared to control groups. In part, that small number is because many promising efforts seem to be working but have not yet been rigorously evaluated. It also reflects, however, the reality that it can be hard to turn teens’ lives around once they are already well on their way down the wrong track in life. A low-dosage intervention over a short period of time will not be enough.

One of the successful interventions was for kids in high school, another was for K-12, the third was for children in grades kindergarten through third.¹² Two of the five successful interventions uncovered by Levin, and the approach with the strongest results, started even earlier, in the preschool years. The Child-Parent Center preschool and parent coaching program in Chicago and the High/Scope Perry Preschool and parent coaching program both delivered solid high school graduation results. Head Start is the nationwide program that most closely resembles these two preschool programs for at-risk children.

Evidence suggests Head Start could increase graduation rates by 10 percentage points

Research on Head Start shows it increased graduation rates by 7 percent for children in the program compared to their siblings in other care.¹³ The Child-Parent Centers (CPC) preschool program serving over 100,000 children in Chicago increased graduation by 8 percentage points;¹⁴ while the High/Scope Perry Preschool program increased graduation rates a full 20 percentage points.¹⁵

It is reasonable to assume that Head Start programs following the lessons of the Perry

A ten percentage-point increase in graduation rates would decrease crime:

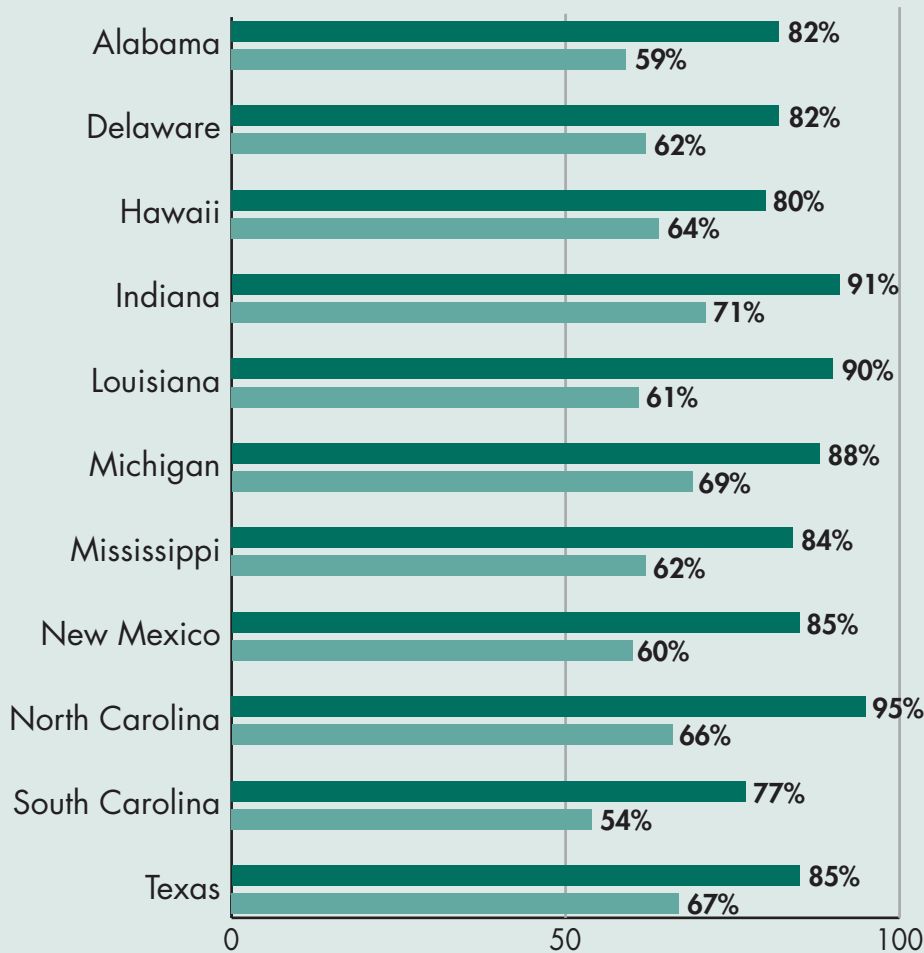
Murder	-20%
Assault	-20%
Motor Vehicle Theft	-13%
Arson	-8%

Lochner & Moretti, 2004

States Where Their 2004 Reported Graduation Rates are 25% Higher than the New Rates

High School Graduation Rates:

State Report Cards
EPE Research Center



New Data: Editorial Projects in Education Research Center
Reported rates for states: see Appendix B for each link

989 children in the Child-Parent Center up to age 24 and comparing them with 550 similar children from low-income neighborhoods who were not in the program. It reveals that the children who did not participate in the program were 24 percent more likely to have been incarcerated at least once as an adult, and 39 percent more likely to have a violent crime conviction than the individuals who attended the CPC program.¹⁷

The High/Scope Perry Preschool program showed even stronger results. At-risk children randomly assigned to a control group were five times more likely to have become chronic lawbreakers by age 27 than those assigned to attend the program.¹⁸

Though the number of murders of or by participants in the Perry study is too small to be statistically significant, it is telling that, among the at-risk kids randomly

assigned to the control group and followed up until they were age 40, two were confirmed as murdered, two more were reported as murdered, and three had been arrested for murders, while none of the kids in the program were murdered and one of the kids in the preschool program was arrested for murder: that totals a likely seven murders committed by or against the control group vs. one murder by the participants in the preschool.¹⁹ Clearly high-quality preschool can change both the graduation rates and involvement in crime among at-risk kids.

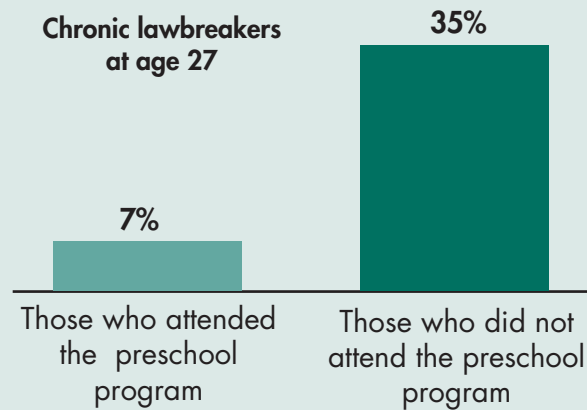
Preschool program and the Chicago programs could improve graduation rates by 10 percentage points. Some of the lessons from those programs are that Head Start centers should continue to improve their parent coaching efforts, teacher quality, social skills training, and their curriculum.¹⁶

But are dramatic drops in murders and assaults, not just increases in graduation rates, possible from quality preschool for at-risk kids? There are no data on murders and assaults by individuals who attended Head Start. New data is available, however, from a study following

assigned to the control group and followed up until they were age 40, two were confirmed as murdered, two more were reported as murdered, and three had been arrested for murders, while none of the kids in the program were murdered and one of the kids in the preschool program was arrested for murder: that totals a likely seven murders committed by or against the control group vs. one murder by the participants in the preschool.¹⁹ Clearly high-quality preschool can change both the graduation rates and involvement in crime among at-risk kids.

Quality Pre-kindergarten Cuts Future Crime

At-risk 3- & 4-year-olds randomly excluded from the High/Scope Perry Preschool Program were five times more likely to become chronic offenders (more than four arrests) by age 27.



Schweinhart, et al., 1993

Head Start currently serves less than 50 percent of those eligible for the program each year.²⁰ The program is voluntary, but if Head Start were fully funded it is estimated that more than 500,000 additional children would be enrolled.²¹ With full funding increasing the coverage by more than 500,000 additional children each year, and with continued improvements to the program, it could play a leading role in reducing America’s high school graduation crisis. Full funding would produce an estimated 50,000 additional high school graduates nationwide every year by producing a 10 percentage point increase in graduation rates for the more than 500,000 kids served. Nationwide, the research on arrests shows increasing graduation rates by 10 percentage points would reduce homicides and assaults by 20 percent.²² Applying that formula to the more than 500,000 additional children served by Head Start—who equal 6.4 percent of all American children aged 3 and 4—would produce 200 fewer murders every year and more than 5,000 fewer aggravated assaults than if full funding is not provided [See Appendix A for a detailed explanation of these calculations].

Investments that save money

The research by Levin and his colleagues’ on

the costs and benefits of increased high school graduation rates showed that completing high school improves lifetime income, increases taxes, and reduces health care costs and crime costs dramatically. They calculated that the lifetime public economic benefits of high school graduation averaged over \$200,000 per student.

Separate research shows that the Child-Parent Centers cut crime, special education and other costs so much that the programs saved more than \$10 for every \$1 invested.²³ The High/Scope Perry Preschool program also cut crime, welfare and other costs so much that it saved \$17 (including more than \$11 in crime savings) for every \$1 invested.²⁴ An analysis by Arthur Rolnick of the Federal Reserve Bank of Minneapolis, shows that the annual return on investment in the Perry Preschool program is 16 percent after adjusting for inflation.²⁵ In comparison, the long-term return on U.S. stocks is 7 percent annually after adjusting for inflation.²⁶

Quality Pre-Kindergarten Saves Money

Taxpayers, victims, and participants saved over \$10 for every \$1 invested in the Chicago Child-Parent Centers pre-kindergarten program.



For every \$1 invested

Over \$10 was saved

Renolds & Temple, 2006

Conclusion

The law enforcement leaders of FIGHT CRIME: INVEST IN KIDS call on Congress to fully fund Head Start so it can be improved and reach all the at-risk children who need it. America cannot afford to turn its back on wise investments in Head Start and other effective programs that will increase high school graduation rates and cut crime. The safety and future of all our citizens are at stake.

Appendix A

According to research by Lochner and Moretti, a 10 percentage point increase in graduation rates would reduce murder and assault arrest rates by 20 percent.²⁷ This should translate into reductions of a similar magnitude in murders and assaults, not just arrests for those crimes.

In 2005, there were 14,062 homicide arrests and 449,297 aggravated assault arrests in the United States.²⁸

Reducing homicide arrests and aggravated assaults by 20 percent nationwide, as presented in the Lochner and Moretti research, would have led to reductions of roughly 3,000 homicide arrests and 90,000 assault arrests in 2005.

What role could fully funding Head Start play in achieving such an overall reduction in the future?

Head Start could be expanded to be available to all eligible children from low-income families. Head Start currently serves 780,000 children, close to half of the more than 1,620,000 children who are eligible.²⁹ If it were expanded to be available to all children who are eligible, and assuming 80 percent take advantage of it,³⁰ an additional 514,000 children would receive Head Start.

Research showed Head Start increased graduation rates by 7 percent among the kids it served compared to siblings attending other preschools.³¹ The Chicago Child-Parent Center increased graduation rates by 8 percentage points compared to other similar at-risk children,³² and the High/Scope Perry Preschool program increased graduation rates by 20 percentage points compared to randomly assigned control group children.³³ So it is not unrealistic to assume that new children served by improved Head Start programs incorporating improvements in parent coaching, teacher quality, social skills training and curriculum could increase graduation rates by 10 percentage points.

Ten percentage points applied to 514,000 new children equals more than 50,000 future high school graduates compared to what would be expected without new funding.

And if graduation rates are going up, homicides and assaults should be coming down for this population too. However, this expansion of Head Start will not impact all children in the United States so it can't be expected to cut homicide arrests by 3,000 and assault arrests by 90,000 as would be possible, according to Lochner and Moretti, if graduation rates increased across America by 10 percentage points. It is being applied to just 514,000 children, or 6.4 percent of all 3- and 4-year-old children in the United States. Thus applying the 6.4 percent to the 3,000 fewer homicide arrests and 90,000 fewer assault arrests if graduation rates improved for all American students equals almost 200 fewer homicide arrests, and well more than 5,000 fewer assault arrests resulting from fully funding Head Start for children who are eligible but not now receiving it.

Whether the exact number of new graduates and the exact number of avoided arrests vary somewhat from this estimate, there is little doubt from the research that increasing Head Start's quality and coverage could dramatically improve graduation rates and decrease crime.

Appendix B

High School Graduation Rates by State & Selected City

Compiled by the Editorial Projects in Education (EPE) Research Center using U.S. Department of Education data for 2004 from an annual census of public schools. For comparison, state rates reported as part of No Child Left Behind are presented for 2004 (or year noted).

Location by State (Alabama - Iowa)	Cities with rates of 50% or less		States with differences in rates of 25% or more		Year for State
	EPE Research Center Rate for 2004	State Reported Rate	How much higher: State Rate Divided by EPE rate	Year for State	
Alabama	59%	82%	39%	04-05	
Birmingham	39%				
Alaska	65%	67%	4%	02-03	
Anchorage	71%				
Arizona	68%	77%	13%	03-04	
Phoenix	58%				
Arkansas	72%	82%	13%	03-04	
Little Rock	61%				
California	71%	85%	20%	03-04	
San Francisco	73%				
Los Angeles	45%				
San Diego	62%				
Colorado	75%	82%	10%	03-04	
Denver	46%				
Connecticut	80%	89%	11%	03-04	
Hartford	37%				
Bridgeport	61%				
Delaware	62%	82%	32%	03-04	
Wilmington (Red Clay Consol.)	55%				
Washington D.C.	58%	70%	21%	05-06	
Washington D.C.	58%				
Florida	61%	69%	13%	03-04	
Miami (Dade County)	49%				
Tampa (Hillsborough County)	75%				
Jacksonville (Duval County)	50%				
Georgia	56%	65%	17%	03-04	
Atlanta	46%				
Fulton County	67%				
Hawaii	64%	80%	26%	03-04	
(Hawaii has one statewide district)	64%				
Idaho	77%	87%	13%	03-04	
Boise	81%				
Illinois	76%	88%	16%	05-06	
Chicago	52%				
Indiana	71%	91%	28%	02-03	
Indianapolis	49%				
Iowa	81%	90%	11%	03-04	
Des Moines	65%				

Location by State (Kansas - New Mexico)	Cities with rates of 50% or less		States with differences in rates of 25% or more		Year for State
	EPE Research Center Rate for 2004	State Reported Rate	How much higher: State Rate Divided by EPE rate	Year for State	
Kansas	74%	88%	19%	03-04	
Topeka	39%				
Wichita	60%				
Kansas City	49%				
Kentucky	70%	82%	16%	03-04	
Louisville (Jefferson County)	64%				
Louisiana	61%	90%	47%	03-04	
New Orleans	56%				
Baton Rouge	71%				
Maine	76%	87%	14%	05-06	
Portland	74%				
Maryland	75%	84%	12%	03-04	
Baltimore	35%				
Massachusetts	73%	80%	9%	05-06	
Boston	57%				
Michigan	69%	88%	27%	04-05	
Detroit	25%				
Minnesota	79%	90%	14%	05-06	
Minneapolis	44%				
Mississippi	62%	84%	35%	03-04	
Jackson	43%				
Missouri	75%	77%	2%	03-04	
St. Louis	48%				
Montana	76%	83%	9%	03-04	
Billings	76%				
Helena	77%				
Nebraska	80%	87%	9%	03-04	
Omaha	55%				
Lincoln	77%				
Nevada	54%	67%	24%	03-04	
Las Vegas (Clark County)	53%				
Reno (Washoe County)	50%				
New Hampshire	76%	*	*		
Concord	84%				
Manchester	72%				
New Jersey	83%	91%	10%	03-04	
Newark	56%				
New Mexico	60%	85%	42%	04-05	
Albuquerque	61%				
Santa Fe	52%				

Endnotes:

- 1 To easily find the graduation rate for any individual school district, city, or state, see: <http://www.edweek.org/ew/toc/2007/06/12/index.html> (type in mapping tool, select the EdWeek maps button, and type in information to find a district).
- 2 De Vise, D., (May 10, 2007). New figures show high dropout rate: Federal officials say problem is worst for urban schools, minority males. *The Washington Post*, A6.
- 3 To easily find the graduation rate for any individual school district, city, or state, see: <http://www.edweek.org/ew/toc/2007/06/12/index.html> (type in mapping tool, select the EdWeek maps button, and type in information to find a district).
- 4 National Governors Association, (2006). *Implementing graduation counts: State progress to date*. Retrieved from the Internet on June 4, 2007 at <http://www.nga.org/portal/site/nga/menutem.9123e83a1f6786440ddcbbe501010a0/?vgnxtoid=930804493f5bc010VgnVCM1000001a01010aRCRD>
- 5 To easily find the graduation rate for any individual school district, city, or state, see: <http://www.edweek.org/ew/toc/2007/06/12/index.html> (type in mapping tool, select the EdWeek maps button, and type in information to find a district).
- 6 Each state issues its own results. For the links to each individual state No Child Left Behind State Report Card, see Appendix B in this report.
- 7 De Vise, D., (May 10, 2007). New figures show high dropout rate: Federal officials say problem is worst for urban schools, minority males. *The Washington Post*, A6.
- 8 Levin, H., Belfield, C., Muennig, P., & Rouse, C., (January 2007). *The costs and benefits of an excellent education for all of America's Children*. Columbia University. Retrieved from the internet on 6-1-07 at www.cbse.org/media/download_gallery/Leeds_Report_Final_Jan2007.pdf
- 9 Bureau of Justice Statistics, United States Department of Justice, (January, 2003). *Education and corrections populations*. Retrieved from the internet on 6-1-07 at <http://www.ojp.usdoj.gov/bjs/abstract/ecp.htm>
- 10 Lochner, L., & Moretti, E. (2004). The effect of education on crime: Evidence from prison inmates, arrests, and self reports. *The American Economic Review*, 94(1), 155-189.
- 11 Levin, H., Belfield, C., Muennig, P., & Rouse, C., (January 2007). *The costs and benefits of an excellent education for all of America's Children*. Columbia University. Retrieved from the internet on 6-1-07 at www.cbse.org/media/download_gallery/Leeds_Report_Final_Jan2007.pdf
- 12 The only high school program Levin and his colleagues cited from their search was *First Things First*. That effort involves comprehensive school reform with small learning communities, dedicated teachers, family advocates and changes in teaching methods. Increasing K through 12 teachers' pay by 10 percent produced demonstrable results, so did reducing class sizes for children in kindergarten through third grade from 25 to 15 children. Levin also cited two preschool programs discussed in the text. A graduation program that another experienced researcher on this issue, Mark Dynarski of Mathematica Policy Research, cited as working to keep teens in school longer is *Check and Connect*. Students in *Check and Connect* are assigned program staff monitors who regularly review their academic performance and school attendance and intervene (enlisting family, school staff, and community service providers) when problems are identified. For a summary of evaluations on *First Things First*, see: Quint, J., Bloom, H.S., Black, A.R., & Stephens, L. (2005). *The challenge of scaling up educational reform: Findings and lessons from First Things First*. New York: MDRC. Retrieved on June 12, 2007 from <http://www.mdrc.org/publications/412/full.pdf> For the study showing teacher salary increases improve graduation rates see: Loeb, S., & Page, M.E. (2000). Examining the link between teacher wages and student outcomes: the importance of alternative labor market opportunities and non-pecuniary variation. *The Review of Economics and Statistics*, 82(2), 393-408 For the study on K – third grade class sizes see: Finn, J.D., Gerber, S.B., & Boyd-Zaharias, J. (2005). Small classes in the early grades, academic achievement, and graduating from high school. *Journal of Education Psychology*, 97(2), 214-23. To see a summary of the results from evaluations of *Check and Connect*, see: U.S. Department of Education-What Works Clearinghouse. (2007). *Check & Connect*. Retrieved on June 7, 2007 from http://www.whatworks.ed.gov/PDF/Intervention/WWC_Check_Connect_092106.pdf For the original studies, see: Sinclair, M.F., Christenson, S.L., Evelo, D.L., & Hurley, C.M. (1998). Dropout prevention for youth with disabilities: Efficacy of a sustained school engagement procedure. *Exceptional Children*, 65(1), 7-21; and, Sinclair, M.F., Christenson, S.L., & Thurlow, M.L. (2005). Promoting school completion of urban secondary youth with emotional or behavioral disabilities. *Exceptional Children*, 71(4), 465-482.
- 13 Garces, Thomas & Currie found that Head Start increased graduation rates by 7 percent (p = .06). Garces, E., Thomas, D., & Currie, J. (2002). Longer-term effects of Head Start. *The American Economic Review*, 92(4), 999-1012.
- 14 Reynolds, A.J., & Temple, J.A., (2006, January 20). *Prevention and cost-effectiveness in early intervention: A 20-year follow-up of a Child-Parent Center cohort*. Minneapolis, McEvoy Lecture Series on Early Childhood and Public Policy, Humphrey Institute of Public Affairs, University of Minnesota.
- 15 Schweinhart, L.J., Montie, J., & Xiang, Z., Barnett, W.S., Belfield, C.R., & Nores, M. (2004). *Lifetime effects: The High/Scope Perry Preschool study through Age 40*. High/Scope Educational research Foundation. Ypsilanti MI: High/Scope Press.
- 16 The Perry Preschool program and the Child-Parent Center programs had a heavy emphasis on coaching the parents, not just teaching the children. They also had teachers with Bachelors degrees, social skills training and effective curriculums. See: Reynolds, A. J., Temple, J. A., Robertson, D. L., & Mann, E. A. (2001). Long-term effects of an early childhood intervention on educational achievement and juvenile arrest. *Journal of the American Medical Association*, 285(12), 2339-2380; and Schweinhart, L.J., Montie, J., & Xiang, Z., Barnett, W.S., Belfield, C.R., & Nores, M. (2004). *Lifetime effects: The High/Scope Perry Preschool study through Age 40*. High/Scope Educational research Foundation. Ypsilanti MI: High/Scope Press.
- 17 Reynolds, A.J., Temple, J.A., Ou, S., Robertson, D.L., Mersky, J.P., & Topitzes, J.W., et al. (2006). *Effects of a school-based, early childhood intervention on adult health and well being: A 20-year follow up of low-income families* (ECRC Discussion Paper 102). Minneapolis, MN: Early Childhood Research Collaborative.
- 18 Schweinhart, L. J., Barnes, H. V., & Weikart, D. P. (1993). *Significant benefits: The High/Scope Perry Preschool study through age 27*. Ypsilanti, MI: High/Scope Press.
- 19 Schweinhart, L.J., Montie, J., & Xiang, Z. (2004). *Lifetime effects: The High/Scope Perry Preschool study through Age 40*. High/Scope Educational research Foundation. Unpublished Manuscript. This anecdotal information is also based on a personal communication with Lawrence Schweinhart, President of the High/Scope Educational Research Foundation, on October 13, 2004.
- 20 Children's Bureau, United States Department of Health and Human Services, (2007) *Head Start program fact sheet: Fiscal year 2007*. Retrieved from the internet on June 4, 2007 at <http://www.acf.hhs.gov/programs/hsb/research/2007.htm>
- 21 FIGHT CRIME: INVEST IN KIDS assumes for these estimates that the take-up rate (the proportion of eligible children who participate in the program) among children eligible for Head Start would be 80 percent. This estimate falls within the range of assumptions early childhood research and policy experts typically make when projecting preschool enrollment figures and is consistent with what policy advocates in Washington commonly project as full enrollment for Head Start. For example, while program enrollment estimates for state preschool programs by Julia Isaacs of Brookings were 60 percent for three-year-olds and 75 percent for four-year-olds, Steven Barnett and Kenneth Robin who are with the National Institute for Early Education Research estimate a 95 percent enrollment rate. It may be necessary to make changes to transportation opportunities and the hours of operation at many Head Start centers in order to achieve an 80 percent take-up rate. See: Isaacs, J.B., (January 2007). *Cost-effective investments in children*, Washington D.C., The Brookings Institution; and, Barnett, W.S., & Robin, K.B., (2006). *How much does quality preschool cost?*, National Institute for Early Education. Retrieved from the internet on June 7, 2007 at <http://nieer.org/docs/?DocID=136>
- 22 Lochner, L., & Moretti, E. (2004). The effect of education on crime: Evidence from prison inmates, arrests, and self reports. *The American Economic Review*, 94(1), 155-189.
- 23 Reynolds, A.J., & Temple, J.A., (2006, January 20). *Prevention and cost-effectiveness in early intervention: A 20-year follow-up of a Child-Parent Center cohort*. Minneapolis, McEvoy Lecture Series on Early Childhood and Public Policy, Humphrey Institute of Public Affairs, University of Minnesota.
- 24 Schweinhart, L.J., Montie, J., & Xiang, Z. (2004). *Lifetime effects: The High/Scope Perry Preschool study through Age 40*. High/Scope Educational research Foundation. Unpublished Manuscript.
- 25 Rolnick, A., & Grunewald, R. (2003). *Early childhood development: Economic development with a high public return*. Retrieved on April 26, 2007 from <http://www.minneapolis-fed.org/pubs/fedgaz/03-03/earlychild.cfm>
- 26 Farrell, C. (2002, November 22). *The best investment: America's kids*. Retrieved on April 26, 2007 from http://www.businessweek.com/bwdaily/dnflash/nov2002/nf20021122_0334.htm
- 27 Lochner, L., & Moretti, E. (2004). The effect of education on crime: Evidence from prison inmates, arrests, and self reports. *The American Economic Review*, 94(1), 155-189.
- 28 Federal Bureau of Investigation. (2006). *Uniform crime report*. Retrieved on June 7, 2007 from http://www.fbi.gov/ucr/05cius/data/table_29.html
- 29 Children's Bureau, United States Department of Health and Human Services, (2007) *Head Start program fact sheet: Fiscal year 2007*. Retrieved from the internet on June 4, 2007 at <http://www.acf.hhs.gov/programs/hsb/research/2007.htm>
- 30 FIGHT CRIME: INVEST IN KIDS assumes for these estimates that the take-up rate (the proportion of eligible children who participate in the program) among children eligible for Head Start would be 80 percent. This estimate falls within the range of assumptions early childhood research and policy experts typically make when projecting preschool enrollment figures and is consistent with what policy advocates in Washington commonly project as full enrollment for Head Start. For example, while program enrollment estimates for state preschool programs by Julia Isaacs of Brookings were 60 percent for three-year-olds and 75 percent for four-year-olds, Steven Barnett and Kenneth Robin who are with the National Institute for Early Education Research estimate a 95 percent enrollment rate. It may be necessary to make changes to transportation opportunities and the hours of operation at many Head Start centers in order to achieve an 80 percent take-up rate. See: Isaacs, J.B., (January 2007). *Cost-effective investments in children*, Washington D.C., The Brookings Institution; and, Barnett, W.S., & Robin, K.B., (2006). *How much does quality preschool cost?*, National Institute for Early Education. Retrieved from the internet on June 7, 2007 at <http://nieer.org/docs/?DocID=136>
- 31 Garces, E., Thomas, D., & Currie, J. (2002). Longer-term effects of Head Start. *The American Economic Review*, 92(4), 999-1012.
- 32 Reynolds, A.J., Temple, J.A., Ou, S., Robertson, D.L., Mersky, J.P., & Topitzes, J.W., et al. (2006). *Effects of a school-based, early childhood intervention on adult health and well being: A 20-year follow up of low-income families* (ECRC Discussion Paper 102). Minneapolis, MN: Early Childhood Research Collaborative.
- 33 Schweinhart, L.J., Montie, J., & Xiang, Z. (2004). *Lifetime effects: The High/Scope Perry Preschool study through Age 40*. High/Scope Educational research Foundation. Unpublished Manuscript.