Upgrading Illinois' Workforce

The Case for Investing in High-Quality Early Education

A report by: AMERICA'S EDGE
Strengthening Businesses Through Proven Investments in Kids

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Acknowledgements

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Who We Are

The business leaders of America's Edge take a critical look at the knowledge, skills and abilities businesses need their employees to have in the 21st century, including the ability to be communicators, collaborators and critical thinkers. Using that analysis, we educate policy-makers and the public about high-quality, proven investments that strengthen businesses, establish a foundation for sustained economic growth, and protect America's competitive edge in a global market place, while helping our nation's children get on the right track.

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Executive Summary

Illinois must expand investments in high-quality early education to develop a world-class competitive workforce within the next 15 years.

The Illinois' P-20 Council, a governor-appointed body charged with developing a quality statewide education system, has set a goal to ensure the state's workers are prepared for the jobs of the future. The Council wants to make sure that 60 percent of Illinois workers have a college or career credential by 2025. But without substantial investments in high quality early learning programs, achieving this goal is highly unlikely. Even now, a half million skilled manufacturing jobs nationwide are unfilled.

In the next decade, the highest-skilled Illinois jobs are expected to grow at more than four times the rate of the lowest-skilled jobs. Positions in science, technology, engineering and math (STEM) are growing particularly fast, and 93 percent of these jobs will require postsecondary education by 2018. Yet today, only 41 percent of working-age adults in the state have an associate's degree or higher.

The state needs a long-term strategy to deal with these increased education demands. To guarantee a deep pool of the skilled workers businesses increasingly need in an innovation-driven global economy, Illinois should heavily invest in its youngest citizens. If it acts now to create the foundations upon which skills are built – early literacy, early math and social skills – Illinois can meet its education goals and ensure its workers are ready for the jobs of the future. These foundations can be developed through high-quality early learning.

Upgrading Illinois' Workforce:

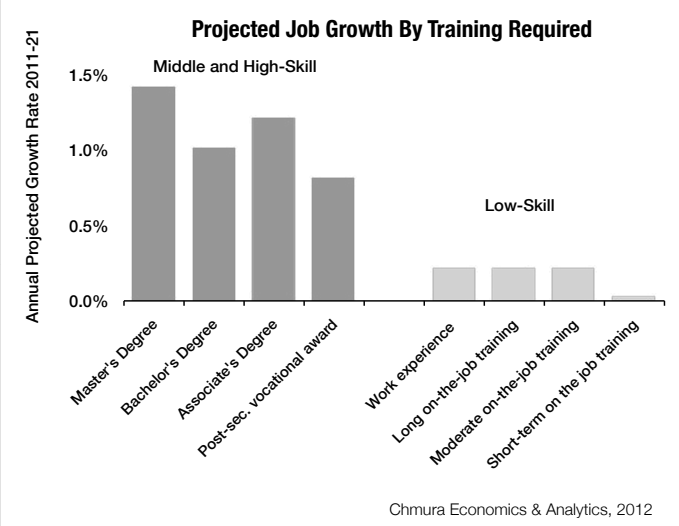
The Case for Investing in High-Quality Early Education

Unprepared Students, Unprepared Workers

Although businesses have always needed workers proficient in the "3 Rs" – reading, writing and arithmetic – today's fast-paced, international marketplace requires even higher proficiency levels in these hard skills. But they are too often lacking, especially among those entering the workforce.

- According to the Nation's Report Card, only 26 percent of Illinois 12th graders are proficient in math and just 40 percent are proficient in reading.[1]
- One out of every five Illinois high school freshmen does not graduate within four years.[2]
- Among those who do graduate, only 23 percent of Illinois 2011 graduates taking the ACT college admissions test met college readiness benchmarks in the four core areas tested – English, math, reading and science. Students were least prepared in science.[3]

> We must invest in programs that promote readiness for the jobs of today and tomorrow, or we will get left behind.
>
> **Sandra Westlund-Deenihan,**
> **President,**
> **Quality Float Works, Inc.,**
> **Schaumburg, IL**



- In late 2008, only one-third of surveyed employers nationwide reported that new entrants with four-year college degrees had "excellent" overall preparation for the workforce.
- Only 16 percent of employers nationwide reported excellent overall workforce preparation for those with only a high school diploma.[4]

Just as important as the hard skills are the critical "soft skills" – communication, collaboration, critical thinking and creativity. In a 2010 survey of 2,000 executives conducted by the American Management Association, nine out of ten executives said these soft skills are important to support business expansion, but less than half of those executives rated their employees as above average in those skills.[5]

Preparing for the Jobs of the Future

With weak education outcomes, dissatisfied employers and an increasing emphasis on soft skills, how will the Illinois workforce of the future fare? Data suggest that Illinois

needs to make major changes to keep its workforce competitive with other states and internationally.

Illinois' job growth is highly skewed toward jobs that are either highly skilled (bachelor's degree or above) or middle-skilled (associate's degree, vocational degree or professional accreditation.) The highest-skilled jobs are expected to grow at more than four times the rate of the lowest-skilled jobs.[6]

By 2018, 64 percent of Illinois jobs will require some sort of education or training beyond high school.[7] Currently, 41 percent of Illinois workers ages 25 to 64 have a two-year degree or higher.[8] While others may have training or certificates, it is clear that Illinois needs to keep producing workers with some sort of higher education experience or training in order to keep up with employer demand and future projections.

Required skills and traits for manufacturing

What Was Needed Then...	...And What's Needed Now
• Learning one or two specific technical roles	• Mechanical reasoning, logic, troubleshooting & spatial visualization
• Physical strength & flexibility	• Personal flexibility, communication & cooperation
• Ability to follow fixed, unchanging procedures	• Initiative, persistence & independence
• General attention to production & safety procedures	• Attention to detail, self-control & dependability
• Following orders	• Making independent decisions
• Operating, maintaining, designing mechanical machinery	• Operating computers or computerized machinery & using computers for a wide range of critical functions

Handler et al., 2009

Despite the recession, many occupations are expected to have too few skilled workers to fill the positions. In occupations that are expected to have the highest deficits of skilled workers through 2021, 40 percent of positions require postsecondary education.[9] In some areas like Madison and St. Clair counties, 60 percent of the occupations with the biggest projected worker deficits require postsecondary education.[10]

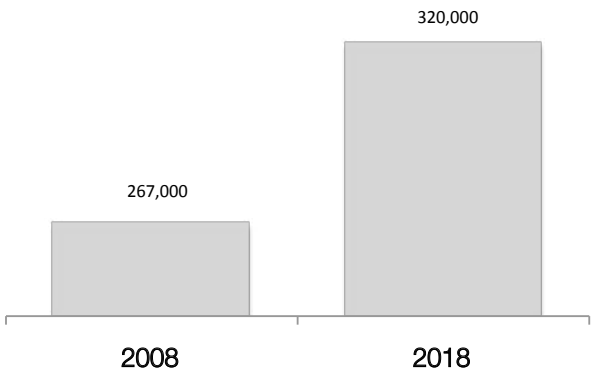
High school or college degrees are not the only preparation employers want. Three out of four executives believe that soft skills will become even more important in the next three to five years because of global competition and the pace of change in the business environment.[11] These skills – like collaboration and creativity – are often established well before children enter the traditional K-12 education system. We need to do more to ensure children learn such crucial skills.

Science, Technology, Engineering and Math (STEM) Occupations Grow

From manufacturing, to banking, to e-commerce to health care services, technology is increasingly central to many jobs. Manufacturing, for example, has shifted to more advanced, computer-assisted production, replacing the manual labor force with automation on the shop floor. To remain viable, workers in manufacturing facilities must now have a technical skill or trade-based skill that machines cannot adequately perform, such as knowledge of mechanical and electrical engineering processes, the ability to operate automated manufacturing systems, and the ability to work with computerized systems and read and write machine programming code.[12]

While nearly one third of all manufacturing jobs nationwide were lost during the recession as a result of these trends,

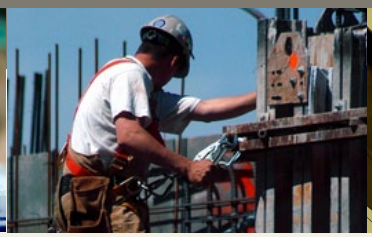
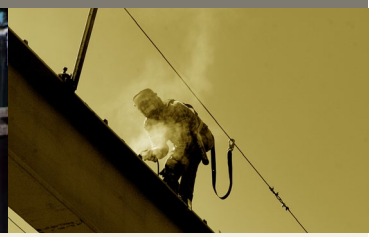
Illinois STEM Jobs Growth



Georgetown Center on Education and the Workforce, 2011

Examples of Middle-Skills Jobs Illinois Can't Live Without:



- EMT
- Firefighter
- Police officer
- Carpenter
- Electrician
- Plumber
- Dental hygienist
- Medical lab technician
- Aircraft mechanic
- Heating and AC installer
- Industrial machinery mechanic
- Machinist
- Legal secretary
- Computer support specialist

National Skills Coalition, 2009

the Manufacturers Institute reported in late 2011 that over half a million manufacturing jobs were unfilled.[13] Their survey showed that that 67 percent of manufacturers have a moderate to severe shortage of available, qualified workers, with even higher shortages in skilled production positions. The inability to find skilled workers is hurting manufacturers' competitive readiness. Seventy-four percent of respondents said that workforce shortages or skills deficiencies in skilled production roles are having a significant impact on their ability to expand operations or improve productivity. These jobs require the most skills and are often the hardest to fill. Over half of those surveyed anticipate the shortage increasing in the next three to five years.[14]

Jobs that are heavily reliant on technology are growing fast. The number of STEM jobs in Illinois is expected to grow by 20 percent between 2008 and 2018.[15] More than half of the fastest growing occupations over the next ten years in Illinois will be jobs that require an education foundation in STEM.[16] Workers often need post-secondary education to capitalize on these types of jobs. In fact, 93 percent of Illinois STEM jobs will require postsecondary education by 2018.[17]

> Illinois must close this skills gap to maintain our competitive edge and economic security.
>
> **Terry Jenkins,**
> **Associate Dean of Workforce Development,**
> **John Wood Community College,**
> **Quincy, IL**

Filling those jobs may be difficult. Just ten years ago, Illinois ranked 24th in the nation in the percent of bachelor's degrees granted in science and engineering.[18] Today, Illinois has fallen to 32nd in the nation.[19] Going in this direction will make meeting Illinois' 2025 goals difficult. Looking forward, 40 percent of the largest gap occupations from 2011 to 2021 in Madison and St. Clair counties require STEM skills or some sort of training or education in medical occupations.[20] Similarly, in Adams County, almost 40 percent of the projected worker shortages over the next decade are for healthcare-related workers.[21]

Middle-Skill Jobs Mismatches

Middle-skill jobs – those that require less than a four-year degree, but more than a high school diploma – account for at least one third of all Illinois jobs.[22] On a state-wide level, there is a rough match between middle-skill workers and middle-skill jobs. But in some areas of the state, there are far too few or too many workers with the right education

and training. For example, the Chicago metropolitan area has a projected deficit of over 90,000 middle-skill workers.[23] In contrast, Madison and St. Clair counties have a surplus of over 13,000 middle-skill workers.[24] It is clear that local employment needs and the skills of available workers are mismatched in many areas of the state.

Demographic changes are also having a profound impact on the workforce. The retiring generation has more education and skills than the generation entering the workforce. New immigrants also tend to have lower education levels than native populations. As a result of these trends and the need for higher education in jobs, Illinois is at risk of facing a major skills gap in the future.

The United States Is Falling Behind

Illinois is not alone. Thanks to technology, more and more American workers are now directly competing with workers from around the world. How U.S. students stack up against students from other countries is, thus, increasingly important – but the United States is no longer on top.

The U.S. high school graduation rate ranks in the bottom third of developed nations.[25] On an international test of applied knowledge and skills, the Programme for International Student Assessment (PISA), 15-year-old American students score significantly below the average for industrialized nations in math and trail far behind leading countries like Korea, Japan and Finland in reading and science.[26] Once a leader in math education, U.S. high school students now fall in the bottom half of teenagers from developed countries. The U.S. is getting worse results while spending 40 percent more on education: U.S. spending per student in 2007 was over $10,700, compared to an industrialized-nation average of about $7,600.[27]

> We cannot find enough skilled workers during a difficult economy; this will worsen as companies add jobs as the economy improves.
>
> **Cindy Warke, Executive Director, Gateway Center, Collinsville, IL**

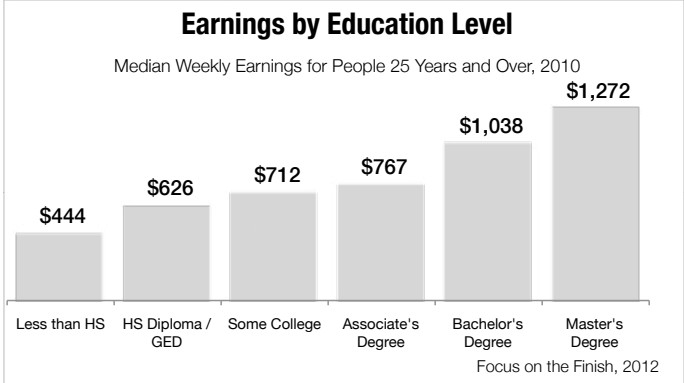
Although higher education attainment in the U.S. has continued to climb, we are not keeping pace with other nations and not growing fast enough to keep up with labor market demand. As recently as 1995, the U.S was tied for first in college graduation rates. But as other countries dramatically improved their college completion rates, the U.S. has fallen to 15th out of 27 industrialized nations – decidedly in the middle of the pack.[28]

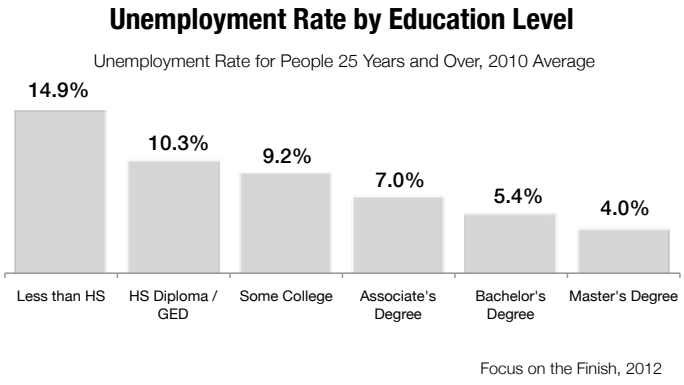
High Cost of the Skills Gap

The lack of a skilled workforce comes at a high cost for individuals, businesses and the economy. Graduating just an extra 1,000 of Illinois' high school dropouts – less than 3 percent of the class of 2011's dropouts – could result in impressive economic benefits. These 1,000 extra graduates would likely:

> Once a leader in math education, U.S. high school students now fall in the bottom half of teenagers from developed countries – behind such countries as Slovenia, Hungary and Poland, and far behind leading countries such as Korea, Japan and Finland.
>
> -Organisation for Economic Co-operation and Development, 2010

- collectively earn $12 million more in an average year than they would have without a diploma;
- spend $1.1 million more each year purchasing vehicles;
- buy homes worth $31 million more by the time they reach the midpoint of their careers;
- support 100 new jobs in the state;
- increase the gross state product by $15 million; and
- increase state revenues by $1.3 million annually through their increased spending and investments.[29]





High school dropouts are so much less productive than high school graduates that each new class of Illinois dropouts will earn $5 billion less over their lifetimes than their high school graduate peers.[30] These staggering earnings losses translate into less spending power, fewer contributions to the tax base and lower productivity. The returns from a college degree are even greater. The average lifetime earnings of an individual college graduate are $2.1 million dollars higher than those of a high school dropout.[31]

Higher levels of education can also help protect against unemployment – even in a recession. In 2010, 15 percent of high school dropouts nationwide were unemployed. Those without a diploma who were employed were only making an average of $23,000 per year. In contrast, only 5 percent of those with a bachelor's degree were unemployed, and employed college graduates could expect to make an average of $54,000 per year.[32]

Remedial courses and training to help students catch up and get on track for higher education and training are helpful, but they are expensive and inefficient. Nearly half of recent Illinois public high school graduates transitioning to community colleges enrolled in at least one remedial class. Illinois students who place into remedial coursework are less likely to complete a certificate or associate's degree.[33] The nation loses $3.7 billion annually from the reduced earnings of unprepared students and the remedial education costs from community colleges alone. The true cost of remedial training would also include remedial education at four-year colleges and employer-based remediation – resulting in a much higher cost.[34]

Changing Course

No immediate fix will solve Illinois' skilled worker issues. As the U.S. economy recovers, steps to train or re-train the current workforce must be implemented. But to ensure a lasting reduction of the skills gap, the infrastructure to create a *future* workforce with advanced skills must be put in place. K-12 education reforms like Career Academies – small, industry-oriented programs with a focus on technical skills and postsecondary preparation – can help prepare students for college and better careers. Higher education reforms to increase completion rates are also needed.

But the education and development of a child begins before that child even enters the K-12 education system. The foundations upon which all future learning will be based – including the foundations for the increasingly important soft skills – are built in children's earliest years. Children must be prepared to enter kindergarten ready to learn, so they can succeed in school and ultimately graduate fully positioned to go on to further training or higher education and to develop the skill set Illinois employers require. Unfortunately, many children who start kindergarten behind and unprepared to work well with teachers and peers will only fall further behind with each school year.

Quality Early Learning Is the Answer

High-quality early care and education can help lay the foundation children need for school success and to enter the workforce with the skills employers require, both now

> To bridge the skills gap, we have to start with the building blocks of quality early education.
>
> **B. Brad Billings,**
> **President & CEO,**
> **Blessing Health System,**
> **Quincy, IL**

> The quality of an area's education system, including early education, is a pull for developers.
>
> **Monica Bristow,**
> **President,**
> **River Bend Growth Association,**
> **Godfrey, IL**

and into the future. Without access to high-quality early learning, many children, particularly at-risk children, may be in poor-quality child care that research shows can actually be damaging.[35] Only high-quality programs give disadvantaged children the solid foundation they need to succeed.

Enhanced Skill Levels

The skills children develop in high-quality early learning programs are critical to developing both the hard and soft skills necessary to compete in a global economy. Research shows that these programs help children begin developing critical literacy and math skills. Test scores of children in Oklahoma's pre-k program increased by 52 percent on letter and word identification, beyond the gains that would be expected as a child naturally ages, and their spelling scores increased by 27 percent.[36] Children from families of all income levels showed gains, with the largest gains among low-income students.[37] Similarly, a rigorous study of Tennessee's pre-k program found that overall gains for children who attended were 50 percent greater than for those who did not attend. In oral comprehension and picture vocabulary, participants made twice the gains of those students who were randomly assigned to a wait list.[38]

Research by James Heckman, Nobel Prize-winning economist at the University of Chicago, shows that high-quality early learning not only helps children develop a foundation for reading and math, it also can help them develop the soft skills needed throughout their careers, like how to follow directions, and how to trust and get along with others. Children participating in Oklahoma's pre-k program, for instance, were more able to pay attention and were less timid in kindergarten than comparable children not in the program.[39] These are important precursors to creating a workforce of communicators, collaborators and critical thinkers.

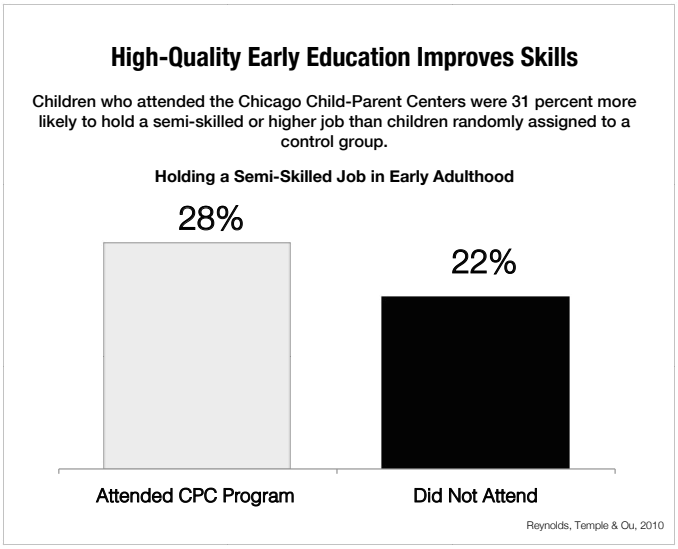
Dr. Heckman also argues that early education is an essential investment because these basic social skills are prerequisites for acquiring further knowledge and skills in school and in the workforce. Heckman says that investing in early education can help prevent "downstream problems in education, health, social and economic productivity that place large burdens on local, state and national budgets, as well as weaken our global competitiveness and security."[40]

Increased School Success

Results from longer-running programs show that the benefits continue as students progress through school. Chicago's Child-Parent Centers have served over 100,000 3- and 4-year-olds since 1967. Researchers found that children attending Child-Parent Centers were 40 percent less likely to need special education or be held back a grade than those children who did not attend. They were also 15 percent less likely to drop out.[41] Similarly, children who attended the model High/Scope Perry Preschool Program in Ypsilanti, Michigan were 44 percent more likely to graduate from high school.[42]

Earnings and Productivity

Higher academic skill levels and more developed soft skills mean more productive adults who can earn more throughout their lives. And enhanced skills and increased productivity can be tied directly to early learning.



- Children who participated in the Child-Parent Center program were 31 percent more likely than their non-participating peers to hold a job considered semi-skilled or higher.[43]

Quality early learning is a key component of ensuring Illinois' long-term economic growth and security.

Christine Riso,
Realtor/Broker,
Baird & Warner,
Naperville, IL

- The children who attended the Perry Preschool program were 22 percent more likely to be employed at age 40.[44]

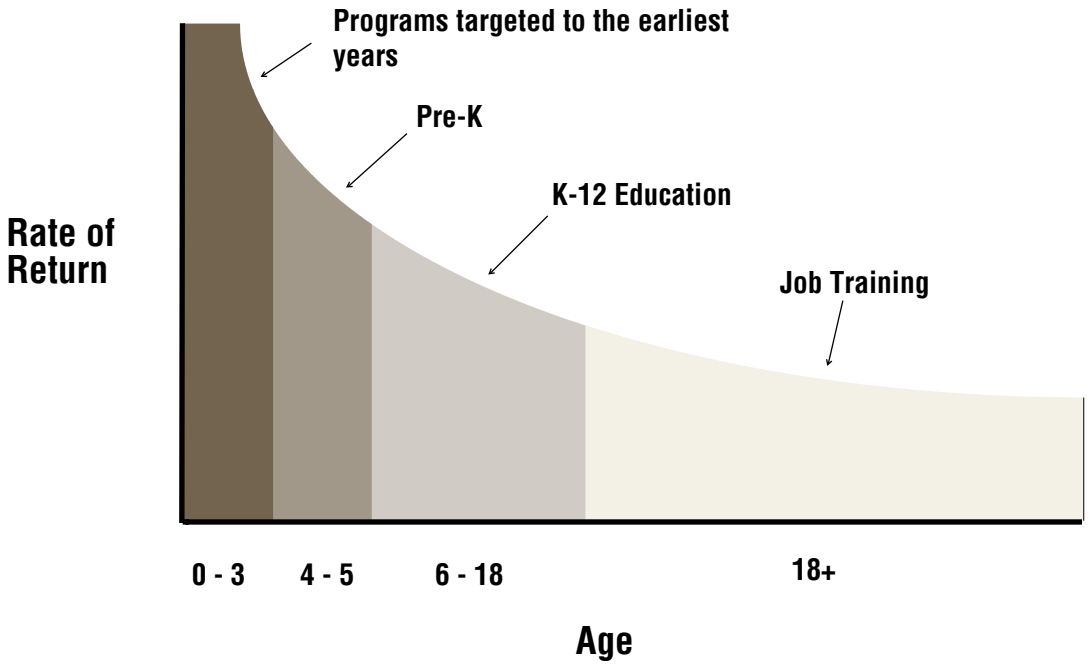
Participants in the Carolina Abecedarian Project had lifetime earnings beyond age 21 estimated to be $37,500 higher than if they had not had access to high-quality early learning. When Abecedarian participants' earnings were assessed at age 30, the difference between participants and those not in the program were still large ($33,000 versus $21,000 in annual earnings), but were not statistically significant.[45]

Children who participated in the Perry Preschool earned 36 percent more at age 40 than children left out. This produced a range of meaningful impacts on their lives. For example, at age 40, 80 percent of the males who attended Perry owned a car compared to just 50 percent for the males left out of the program.[46]

Children in the Abecedarian program were four times more likely to be enrolled in a four-year college or university at age 30 than children left out of the program – which is good news for businesses and the economy.[47] As noted earlier, more education is associated with lower unemployment – something that became increasingly clear during the recent economic recession.

Similarly, increased education is associated with increased productivity, which can strengthen our economy. According to research by the Organisation for Economic Co-operation and Development (OECD), each year of additional education in OECD countries is associated with a 4 to 7 percent increase in per capita output.[48] One additional year of schooling also leads to an 8.5 percent increase in manufacturing productivity, and more than a 12 percent productivity increase in other industrial sectors.[49]

Rate of Return to Investments in Human Capital



Adapted from
The Heckman Equation, 2010

Early Care and Education in Illinois: Challenges and Opportunities

Illinois manages a patchwork of federal and state funds to provide pre-kindergarten. Yet, due to a lack of funding, high-quality early care and education programs are currently out of reach for most of Illinois' children. Head Start provides pre-kindergarten services for 37,500 children ages 3 to 5 using federal funds.[50] The Child Care and Development Block Grant serves over 160,000 children with a mix of federal and state funds.[51] States are required to provide matching funds and can use these resources to help low-income families pay for early education and after-school services while parents are employed, attending educational or training programs or looking for work.[52]

Illinois' Preschool for All initiative serves approximately 22 percent of 3- and 4-year-olds through half-day programs in 101 out of 102 counties in the state.[53] According to the National Institute for Early Education Research's (NIEER) annual assessment of state preschool programs, Preschool for All program meets 9 of the 10 ten components of NIEER's minimum quality standards checklist.[54]

The need for early care and education programs in Illinois is substantial, since most young children are still not served by publicly funded programs. Approximately two-thirds of Illinois' 3- and 4-year-olds are not enrolled in publicly funded pre-kindergarten or Head Start.[55]

Many parents cannot afford quality child care settings, and some can only afford to put their children in a poor-quality setting, which may not adequately support children's development and learning and prepare them for school and workforce success. Illinois has taken an important step toward ensuring quality by establishing the Quality Counts Rating System (QRS). This system encourages early care and education program providers to participate in a voluntary review and rating process based on a number of quality indicators.[56] Research from other states shows this approach can improve quality.[57]

As the economy recovers and we strive to ensure long-term economic security, increasing the education levels of our young people may better allow the U.S. to weather future economic downturns. The first step toward that goal is quality early learning.

Conclusion

Illinois is falling behind when it comes to preparing its future workforce to compete successfully in a global economy. To stem this tide and close the growing skills gap, policy-makers should make sure we are spending our education dollars on what really works. Quality early care and education is the foundation upon which success in school and later in the workforce is built. Policy-makers must support high-quality preschool to support Illinois' future.

> Over time, high-quality early education programs for at-risk children can save as much as $16 for every dollar invested. That is a return on investment that is unmatched by almost any other public investment.
>
> -Schweinhart et al., 2005

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