

1-21-2019

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Recommended Citation

Morgan, H. (2019). Does High-Quality Preschool Benefit Children? What the Research Shows. *Education Sciences*, 9(19), 1-9.

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Review

Does High-Quality Preschool Benefit Children? What the Research Shows

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Received: 26 November 2018; Accepted: 17 January 2019; Published: 21 January 2019



Abstract: Despite research showing that high-quality early education can be extremely beneficial, a large percentage of American children do not attend preschool. In addition, children from low-income families are less likely to enroll in preschool and more likely to attend low-quality early education programs. One reason for this outcome involves low spending on early education. In comparison with many industrialized nations, the United States spends little on preschool education, allowing other countries to be ahead in this area. This paper summarizes the findings of research on preschool education. It also offers a few ideas on improving early education programs and reasons for implementing universal preschool.

Keywords: preschool education; inequalities in education; school environment

1. Introduction

Too many children currently do not participate in preschool in the United States. In comparison with other industrialized nations, a low percentage of American children enroll in preschool. The percentage of three- and four-year-old children enrolled in preschool in the United States is not only under the OECD average but also under the percentage of children enrolled at this age level in over 20 countries [1]. In addition, the children needing early education the most are less likely to receive it. According to the U.S. Department of Education [2], only about 40% of children from low-income families enroll in preschool compared with about 60% of their more affluent peers. Although an increasing number of cities and states have invested in early education, at the current rate of progress, it would take decades to provide only half of four-year-olds with state-funded preschool programs [3].

2. Research Methodology and Theoretical Framework

2.1. Research Methodology

This paper documents the need for improving the quality of and access to early education in the United States and consists of theoretical research designed to enhance the understanding of how high-quality early education benefits children and society. In contrast to applied research, which focuses on alleviating concerns in specific situations, theoretical research aims to enhance the understanding of the variables that lead to a problem [4]. The problem this paper explores is the lack of opportunities for children from low-income families to attend high-quality preschool programs. To enhance the understanding of this concern, the findings of some of the most important studies and meta-analyses on early education are discussed. To offer a balanced perspective, the objections that critics raise about implementing universal preschool education are mentioned. The conclusions are based on evaluating the evidence for implementing universal preschool education.

2.2. Theoretical Framework

This research draws on social justice theory to explore the inequities that may result when children from low-income families do not enroll in high-quality preschool. It focuses on how early education can reduce inequalities in power, wealth, and privilege in society. A social justice framework offers a way to address the inequities of a society that favors members of higher socioeconomic status [5]. This framework aims to ensure that all people are treated with dignity and respect and that their opportunities and rights are protected [6].

3. The Benefits of Preschool Education

3.1. Brain Development

Research, especially from neuroscience, suggests that high-quality early education can make a critical difference toward a child's future. It also shows that the benefits of early education depend on the quality of preschool programs [7]. Brain development during the early years is characterized by dramatic growth. Before the age of six, for example, a child's brain typically quadruples in weight and reaches approximately 90% of its adult volume [8].

3.2. Improvement in Later Life Outcomes

Many studies have shown that high-quality preschool education leads to positive outcomes that occur later in life. Professor James Heckman, a Nobel Memorial Prize winner in economics, discussed that high-quality early education enhances high school graduation rates and leads to positive outcomes in employment, crime, and health. He also mentioned that the return on investment for preschool education is greater than what was previously thought [9].

Professor Heckman discussed that investing in birth-to-five early childhood education is a cost-effective method, alleviating the negative effects of poverty on child development and adult opportunity. He referred to two experiments some advocates of universal preschool in the United States allude to when urging for improvement in preschool education: the Carolina Abecedarian Project and the Carolina Approach to Responsive Education. Conducted in the 1970s in North Carolina, these studies compared the outcomes of children from birth to age five placed in a treatment group with those of children who either did not receive preschool education or received lower-quality center-based care. Children who received the treatment were provided with access to health care and early learning opportunities. These studies showed that females receiving the treatment experienced improved high school graduation rates, years of education, and adult employment. The results for males indicated that those in the treatment group experienced lower drug use and positive effects on education and later labor income [10].

These two experiments are not the only studies showing that high-quality preschool programs lead to positive outcomes. The Child Parent Center study, one of the most rigorous studies on early education, revealed that enrollment in preschool leads to many benefits. Operated by Chicago's public schools, this study consisted of a large-scale, long-term experiment beginning in the late 1960s and involved assigning a certified teacher and an assistant to a classroom of 18 children. Like other research, it showed that early education leads to positive outcomes in test scores, crime, special education, and high school graduation [11].

Another noteworthy study involved 123 low-income African-American children. From 1962 to 1967, these children took part in the Perry Preschool Program in Michigan. Research on this program showed that the children in the control group experienced fewer positive outcomes when compared with the treatment group. Those in the treatment group committed fewer crimes and earned more pay later in life [12].

In addition to these early studies, many meta-analyses have shown that participation in preschool can enhance cognitive development [11]. A meta-analysis published in 2010, for example, indicated that preschool attendance improved cognitive outcomes, social skills, and school progress. In all,

123 studies from 1960 to 2000 involving early childhood interventions were analyzed [13]. Another meta-analysis that included the findings of 28 Head Start programs revealed that Head Start improved children's cognitive and achievement outcomes [14]. With regard to quality, research suggests that associations exist between the qualifications of preschool teachers and early childhood outcomes. For instance, a meta-analysis consisting of 32 studies indicated that teachers with a bachelor's degree (BA) had greater positive effects on early education outcomes when compared with the impact teachers with less education had [15].

4. The Current State of Preschool Education

4.1. Problems with Preschool Education

In addition to the concerns previously discussed about preschool education in the United States are other problems that need to be addressed. For instance, children from low-income families are not only less likely to enroll in preschool but also more likely to attend lower quality early education programs [2]. One reason for this situation is that Head Start—the oldest and largest publicly funded child federal program for low-income children and families in the United States—suffers from inadequate funding, making it impossible to provide high-quality services for all eligible children [16]. Another problem with Head Start is that it varies greatly from state to state in quality and access. For example, a recent report indicated that only 36% of Head Start teachers in New Mexico had a bachelor's degree but that over 90% held a BA or higher in the District of Columbia. This report also mentioned that huge differences in access existed between states. For instance, at age three, only 6% of children in Idaho were enrolled, but almost 100% of children in North Dakota were enrolled [16].

4.2. Improvement of Preschool Education

One way to improve early education in the United States is to require programs to use universal minimum standards for learning, such as those that the National Institute for Early Education Research (NIEER) recommends. NIEER evaluates preschool programs using 10 recently revised minimum standards:

1. Early learning standards across multiple domains
2. A well-implemented curriculum that supports learning and development
3. A bachelor's degree for lead teachers
4. Specialized preparation for lead teachers on learning, development, and pedagogy at the preschool level
5. A Child Development Associate (CDA) credential or equivalent preparation for assistant teachers
6. Teacher participation in a substantial number of hours of professional development
7. Class size maximum of 20 children
8. Staff-to-child ratio of 1:10 or less
9. Screening and support services for hearing, vision, dental, and other health areas
10. Continuous monitoring to ensure improvement in practice

NIEER's 10 preschool policy standards are useful for policymakers interested in improving early education quality. They were created using a method that identifies the common features that separate successful organizations from the rest. The standards consist of minimum policies designed to support gains in learning that promote later educational and life achievement [17].

Unfortunately, in 2015, NIEER found that only seven states complied fully with all the standards. One of the major weaknesses with preschool education is the shortage of teachers with appropriate credentials. Although one of NIEER's minimum standards requires a bachelor's degree for lead preschool teachers, only about 60% of programs require it. Another area that needs improvement involves the CDA credential. Only about 40% of programs require assistant teachers to hold this credential. Holding a CDA is important because it ensures that professionals working in preschool

settings have appropriate training. National organizations such as NIEER and the National Association for the Education of Young Children (NAEYC) recommend requiring the CDA for professionals seeking to work with preschool children [3]. In getting a CDA, early childhood professionals need to show that they can perform according to the standards of the Council for Professional Recognition [18], the organization that administers the CDA. These standards include six goals:

1. To create a safe and healthy learning environment
2. To promote intellectual and physical competence
3. To provide positive guidance and support emotional and social development
4. To form productive and positive relationships with families
5. To make sure participants experience a purposeful program responsive to their needs
6. To sustain commitment to professionalism

5. Other Strategies for Improving Preschool Education

5.1. Funding of Preschool Education

In addition to requiring all preschools to adhere to NIEER's minimum standards, early education in the United States needs to be funded adequately. In 2013, an article in the *New York Times* indicated that in comparison with other countries, the United States was spending much less on preschool education. Almost 30 countries were spending more, with only one that was spending less [19]. In addition, the amount spent on preschool education was considerably less than what was spent for K-12 education. Less than half was spent on three- to five-year-olds than what was spent per child in kindergarten through 12th grade.

Such an approach has not reduced the academic achievement gap. Eric Hanushek [20] showed that large gaps existed between white and black students in math and reading and called the failure to narrow this gap further a national embarrassment. According to Professor Hanushek, at the current rate of progress, 250 years would need to pass before the gap in math closes, and 150 years would need to pass for the reading gap to close.

5.2. Salaries and Working Conditions

Other strategies for improving preschool education include increasing the salaries of childcare professionals and improving the working conditions of preschools. In comparison with elementary and secondary teachers with similar qualifications, most preschool teachers are poorly paid. The American Public Health Association [21] reported that at \$23,320, the median salary of preschool teachers is about half the median pay of kindergarten teachers, leading to high turnover rates. With regard to working conditions, low-quality preschools have fewer resources and high student-to-teacher ratios. These schools do not provide enough support for teachers. Such conditions lead to high stress levels and student discipline problems, including suspensions and expulsions [21].

6. Advocates and Critics of Universal Preschool

6.1. Arguments for Universal Preschool

Another way to improve early education is to increase access by implementing high-quality universal preschool. Advocates of this approach offer several reasons for the need of universal preschool education. In addition to creating higher chances for low-income children to succeed in various ways later in life, advocates say that it benefits children from all other socioeconomic backgrounds [11]. For example, it can help middle-income parents because many of them cannot afford to send their children to preschool [21].

Further, without universal preschool, many children are more likely to go to kindergarten with larger differences in academic and social development, thus contributing to an academic achievement

gap. This gap is harder and costlier to close after the preschool years. Universal early education also leads to economic benefits as a result of lowering future crime and unemployment rates. Finally, implementing high-quality universal preschool would allow the United States to offer an early education system similar to those of countries with superior preschool systems. As previously mentioned, many industrialized nations allow more opportunities for their citizens to send their children to preschool. For example, France, Sweden, and Denmark provide a minimum of two years of free early education for all children before they start primary school [21].

6.2. Arguments against Universal Preschool

Although the evidence provided so far suggests that offering universal preschool would benefit American children greatly, critics object to this idea. Some skeptics say that starting universal preschool based on the results of several old studies with a relatively small number of children is problematic because of the challenges associated with finding qualified teachers for large numbers of children [22]. However, in addition to this older research, the meta-analyses previously mentioned include more recent research. Further, studies conducted in the 21st century with large numbers of children showed that children benefit from programs such as Head Start. For example, the Head Start Impact Study involved over 4000 children and revealed that those enrolled in Head Start experienced fewer behavioral problems when compared with their peers not enrolled in this program. This study also found that Head Start improved children's cognitive development [23]. Another notable study with over 1000 children who attended Oklahoma's universal preschool program during the 2002–2003 school year revealed that this program improved children's school readiness [24].

Critics also refer to the results of a preschool program in Tennessee showing that children enrolled in this program had lower test scores, poorer attitudes toward school, and worse work habits by the time they reached the third grade when compared with the children not attending the program. However, William Gormley of Georgetown University responded to this study by suggesting that the outcomes of the program may have been due to the K-3 teachers' lack of knowledge on teaching children who had already completed preschool programs. He also referred to the strong agreement among scholars regarding the improvement in school readiness that early education promotes [25].

Other findings used to critique universal preschool involve the universal, highly subsidized childcare implemented in Quebec in the late 1990s. An evaluation of this program indicated that the children who participated were worse off in aggression, illness, and motor skills [26]. However, several studies on this program revealed some concerns about its quality. For example, only 27% of day care settings were rated "good," and 61% were rated "minimal." The rest (12%) received a rating of "poor." In addition, less than half of care workers held an early childhood education certificate. Each one also worked with an average of 11 children, a higher number than the Canadian Pediatric Society's recommendation of no more than eight children per care worker for three- and four-year-olds [27].

Critics also say that universal preschool would not be necessary if high-quality preschool is available for children from low-income families. Although such an approach to improving preschool education may be beneficial, offering free preschool only to underprivileged children leads to segregated preschools. Segregating students limits learning because low-income children learn more when they interact with peers from diverse economic backgrounds. Children from low socioeconomic families frequently make more academic progress, especially in language, because they tend to have weak academic skills that improve when they interact with peers with stronger skills [28].

7. Policy Recommendations

7.1. High Cost of Preschool

High-quality publicly funded universal preschool can solve many of the problems previously discussed. Many low-income families without access to free preschool cannot afford private early education. In some areas, preschool for a four-year-old is more expensive than in-state college tuition.

For example, in Washington D.C. and Massachusetts, preschool for a child averages between \$12,781 and \$17,842, more than the \$10,702 and \$7255 in-state college tuition for these areas [29]. This high cost means that even many middle-class families struggle to place their children in preschool. Therefore, many middle-class families would benefit from publicly funded universal preschool as well.

A recent report from the Economic Policy Institute recommended several ways for policymakers to deal with the rise in income inequality that occurred after the Great Recession. One method involved providing the resources needed for all families to have access to high-quality childcare. Another way had to do with ensuring the professionalization of preschool teachers by providing the resources needed to recruit and retain well-credentialed staff and to offer them a competitive salary similar to what K-12 teachers earn [30]. Implementing these strategies will likely solve many of the problems associated with early education in the United States.

7.2. Improvement in K-12 Schools

In addition to improving access to high-quality preschool education, policymakers need to find methods to provide better educational opportunities for children from low-income families after they complete preschool. Although the studies previously discussed indicated that early education can make a crucial difference later in life, other studies indicate that many of the gains children make in preschool are lost unless they attend high-quality elementary schools [31]. Unfortunately, children from low-income families in the United States are not only more likely to attend low-quality preschools but also more likely to attend inferior K-12 schools [32].

8. Conclusions

As a result of advances in research and neuroscience, there is new evidence that indicates that the early years are a critical time for learning and development, providing the foundation for future progress [2]. Unfortunately, the United States is behind most industrialized countries in providing the early education programs that can develop this foundation. In 2013, the Center for American Progress [33] reported that, in comparison with other OECD countries, the United States was far behind in various elements involving early education:

- 26th in enrollment for four-year-olds
- 24th in enrollment for three-year-olds
- 22nd in the age that children start an early education program
- 15th in teacher-to-child ratio
- 21st in total investment in early education relative to country wealth

Considering what is known about the benefits of high-quality preschool, policymakers should refer to these statistics to justify enacting new laws that promote improved access to early education. James Heckman, a distinguished professor at the University of Chicago and a leading researcher on the outcomes of early education, discussed that it benefits disadvantaged children tremendously, improving cognitive and behavioral traits including sociability and motivation. Various studies have shown that when children receive high-quality early education, they benefit later in life by experiencing higher income levels and more success in college.

The costs of not providing high-quality preschool education are high. Julia Isaacs of the Urban Institute in Washington found that over half of poor five-year-olds lack the skills needed to start primary school and mentioned that such deficits are extremely difficult to correct later in life [19]. In addition, providing universal high-quality preschool will likely improve the economy. The increase in high school graduation rates that result from high-quality early education strengthens the economy because high school graduates typically earn more than their counterparts without a high school diploma. This outcome benefits society as a result of an increase in purchasing power. High school graduates are also less likely to receive welfare services and to go to prison. The Alliance of Excellent Education estimated that high school dropouts cost society over \$2 trillion over a span of 10 years [34].

When President Obama was in office, he vowed to deal with the United States' drop in college completion rates by increasing Pell grants and tax breaks. However, Professor Heckman mentioned that this strategy would do little good for children from low-income families. Increasing family income and lowering the price of college is a poor way to offset the consequences of not offering high-quality early education. Such an approach is less effective and more costly than providing high-quality preschool programs [19].

Although advocates of universal preschool face critics who argue that only a limited number of studies show the benefits of early education, the failure to narrow the achievement gap is a good reason to try a new approach. Critics sometimes argue that universal public preschool is not necessary since some families can afford it and since some studies show it may be more harmful than helpful. However, children from low-income families benefit more from universal preschool because it increases their interaction with peers from diverse socioeconomic backgrounds. During the preschool years, children spend a significant amount of time playing with each other and develop more elaborate language and vocabulary skills when they have opportunities to interact with peers with stronger language skills [28].

The studies showing that children in preschool programs did not make academic gains appeared to evaluate low-quality early education programs or programs with teachers lacking knowledge on how to teach children who had completed preschool programs. Recent research on state-funded universal preschool indicated that it has substantial positive effects on low-income children's reading scores and that the academic gains children make from high-quality preschool appear to predict later academic performance and adult outcomes [35]. Many experts agree that combining universal high-quality early education with improved K-12 educational opportunities for low-income students is the best strategy for improving America's education system.

Funding: This research received no external funding.

Conflicts of Interest: Author declares no conflict of interest.

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