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The Effects of Universal Pre-Kindergarten on School Readiness

Megan Royek
Bridgewater State University

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Megan Royek

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Dr. Heather Pacheco-Guffrey, Thesis Advisor
Dr. Andrea Cayson, Committee Member
Dr. Jeanne Ingle, Committee Member

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By Megan Royek

Abstract

Universal Pre-Kindergarten (Universal Pre-K) refers to government-funded preschool programs by the state (Rock, 2018). Universal Pre-kindergarten is an initiative to enhance children's cognitive development and learning before entering kindergarten (Atchison, Parker & Diffey, 2017). Universal Pre-Kindergarten is a controversial topic due to the cost of sending students, which requires funding from the government (Rock, 2018). By conducting research through a literature review, I hope to discover the pros and cons of the effects of universal Pre-K on children's educational trajectories as well as their cognitive development and social/emotional skills. Through research I hope to come to a concrete conclusion supported by evidence about the nature of the impact of universal Pre-K on student learning and development by focusing on the political aspects, and the effects on students of varying socioeconomic status. This data is critical to the Early childhood field because Pre-K is the beginning of education, and not all students attend, which has the potential to impact students' future learning.

Introduction

Currently in our nation there is a debate over whether or not pre-Kindergarten (pre-K) should be required across the United States, and making pre-K universal. The National Association for the Education of Young Children (NAEYC) states that, "'...universal pre-K means that pre-K programs are available to any child in a given state, regardless of family income, children's abilities, or other factors.'" (Rock, 2018). The

Some states are not advocating for a Universal Pre-K program, while others have implemented it. Only thirty-nine states along with the District of Columbia offer varying forms of Universal Pre-K programs, but not every child is eligible to attend, which would not qualify the programs as a complete Universal Pre-K Program (Rock, 2018). In order for a child to be considered for universal pre-k, the program must be offered to every child, regardless of the circumstances. (Rock, 2018). Florida, Georgia, and Oklahoma are presently the only states in the United States that offer complete Universal Pre-K programs for all children old enough to enter Pre-K. (Rock, 2018) The Every Student Succeeds Act (ESSA) provides states with assistance for how to fund Pre-K programs as well as ways states can change to support students as they enter Pre-K the best way possible (Atchison et al., 2017).

Early childhood education is a broad term used to describe any type of educational program that serves children in their preschool years, before they are old enough to enter kindergarten (Preschoolteacher.org, 2019). There are a variety of early childhood programs and services available including public preschool, licensed community-based child-care programs, Head Start, and Early Intervention (EEC, 2019).

What is preschool? What is pre-K?

Prior to discussion regarding universal pre-kindergarten (pre-K) programs, we will examine the different types of pre-K and the overall effects of high-quality pre-K programs, both private and public. There is a difference between Pre-school and Pre-Kindergarten. Pre-school can include children ranging from infants-age 5, where Pre-Kindergarten refers to children ages 4-5 or beginning school a year prior to entering kindergarten (EEC, 2019). Massachusetts district state cutoff dates for children entering

kindergarten; children must be five years old by the cutoff date upon entering kindergarten (Massachusetts Department of Education, 2017).

Does pre-K have curriculum?

In states across the U.S., Pre-K curriculum is implemented, including emergent curricula, which emphasizes students interests rather than pre-determined subjects, though not universally (Mead, 2017). Many states only have pre-K guidelines and not content-based standards (National Center on Early Childhood Quality Assurance, 2016). Each state has a set of standards or frameworks for pre-K and early learning, and the standards and frameworks for each state can be found through the Administration for Children & Families Office of Child Care under the Early Learning Standards and Guidelines (National Center on Early Childhood Quality Assurance, 2016) is the content of what is taught. For pre-K programs the majority of the states offer a form of pre-K standards/frameworks for children ages 3-5 (National Center on Early Childhood Quality Assurance, 2016). 35 out of 50 states, as well as the District of Columbia, provide a foundation for standards or frameworks, including Massachusetts according to the Administration for Children & Families Office of Child Care (National Center on Early Childhood Quality Assurance, 2016). 15 out of 50 States only offer guidelines for pre-K (National Center on Early Childhood Quality Assurance, 2016). The National Institute for Early Education Research (NIEER) released the new criteria and guidance for selecting and adopting curricula and supports to implement curriculum (Mead, 2017).

> "In 2008-2009, NIEER found 18 out of 51 state-funded pre-K programs (35%) had at least one state-approved comprehensive curriculum for use in pre-K. In 2016-2017, this increased to 48% of pre-K programs, 29 out of 61 programs located in 23 states and D.C. An additional six programs had a list of recommended comprehensive curricula; and 11 pre-K programs required all pre-k

> providers in any setting to use a specific comprehensive curriculum (Weisenfeld, 2018, P. 1 & 2)."

Texas, with one of largest preschool programs in the U.S., and Tennessee are among states that do not meet the new NIEER standard (Mead, 2017). Massachusetts currently possesses curriculum frameworks and standards for pre-K, and uses Common Core Standards for curriculum (Massachusetts Department of Education Frameworks, 2018).

Funding for pre-K programs.

Funding of pre-Kindergarten varies. The U.S. federal and state governments funds public pre-school programs while customers pay for private programs directly. Private programs receive their funds elsewhere, therefore private programs charge tuition. According to state regulations of private schools, Massachusetts children requiring special education may pre-pay tuition for no longer than 3 months at any private school (U.S. Dept of Ed, Office of Innovation and Improvement, 2009). Public Pre-K programs are funded 55% federally, 32% by state, and 13% locally (Parker, Diffey, Atchison, 2018). The majority of the federal funds go towards Head Start programs (Parker et al., 2018). Nine states use the K-Grade 12 funding formula to fund their pre-K programs, which include: Colorado, Iowa, Kentucky, Maine, Oklahoma, Texas, Vermont, West Virginia, and Wisconsin. In Maine, Oklahoma, and West Virginia pre-K students, just like kindergarten-12 students, receive the same base amount per-pupil (Parker et al., 2018).

States can use three different types of funding including fund appropriation for programs, block grants, and the state funding formula (Parker et al., 2018).

The majority of pre-K programs are funded through general fund appropriation (Parker et al., 2018). The funding formula, for Kindergaten-12 level, states fund their education system using the funding formula, which is generally a formula that is based on a per-student fund, with other money put towards areas with great needs (Parker et al., 2018). Forty-four states offer state-funded pre-K (Samuels, 2019). Block grants are distributed to locales where an educator service, such as school districts, controls decisions about how the funds are used (Parker et al., 2018). Massachusetts Department of Early Education and Care offers a Universal Pre-Kindergarten grant to provide high-quality prekindergarten programs that help to promote preschool children's school readiness at Kindergarten entry (Department of Early Education and Care, 2018). During the Obama administration, the majority of the growth in state programs came from the federal Preschool Development Grant Program, where 18 states receives $1 billion over four years, including pre-K (Samuels, 2019). It remains to be seen whether states will be able to maintain the same number of preschoolers enrolled following cuts in funding (Samuels, 2019).

Standards and guidance for early childhood education come from professional societies and state agencies.

> "The National Association for the Education of Young Children (NAEYC) is a professional membership organization that works to promote high-quality early learning for all young children, birth through age 8, by connecting early childhood practice, policy, and research." (NAEYC, 2019, About Us, P.1)

Pre-K programs require review and accreditation through the given state. The United States licensing agencies used in child care for each individual state can be found through the National Database of Child Care Licensing Regulations website and includes the state licensure website when each state is clicked on. According to NAEYC, there are over

7000 accredited early learning programs, but less than 10% of preschool, care centers, and kindergarten programs nationwide are able to achieve the accreditation (NAEYC, 2018). Pre-K programs in Massachusetts are required to be licensed through the Department of Education, Early Education and Care, which is a professional licensing society (EEC, 2019).

Making pre-K universal would mean that funds, enrollment numbers, or enrollment deadlines do not limit the programs to a set budget or students allowed into the program (Parker, et al., 2018). Vermont and Florida are currently the only two states to offer completely universal programs within the state, meaning that the program is open to anyone in the state, though not everyone enrolls (Parker et al., 2018). Georgia, Illinois, Iowa, New York, Oklahoma, West Virginia, and Wisconsin offer different levels of mostly universal pre-K programs (Parker et al., 2018). Idaho, Montana, New Hampshire, South Dakota, North Dakota, and Wyoming offer pre-K programs through federal, local, and private funding, but these states do not provide state funding for pre-K (Parker et al., 2018). The majority of other states in the U.S. offer various forms of non-universal, state funded pre-K programs (Parker et al., 2018).

Problem

Mandating pre-K programs across the U.S. would require much change. Federal and state funding would need to be increased to provide for the purchase of curriculum, materials and pay for licensed teachers. There would need to be licensing for teachers and training programs to prepare Pre-K teachers to teach students with disabilities and English Language Learners. A developmentally appropriate teacher- to- student ratio would also need to be established to support the needs of the young, Pre-K learners.

Mandating pre-K programs would mean that schools themselves would need to change as well. Schools would need to address the challenges of finding or creating physical space within schools for the additional grade of pre-K students. For example, a school that hosts grades K-5, the school would have to expand by 1/6 to accommodate another grade for pre-K with expectations for the same number of children as are in the kindergarten grade. Schools would also need to solve the challenge of space in the schedules for shared school resources such as specials (art, physical education) in addition to lunchroom and playground time. Additionally, schools would need to address the question of transportation, with schedules and routes just like public school for students in grades k-12.

Standards and curriculum would also be necessary for a pre-K grade. Standards are the benchmarks / frameworks that come from a state or a group of states, for example the Common Core which is used by 34 out of 50 states (Education Week, 2018), including Massachusetts. The Massachusetts History and Social Studies standards are only used in Massachusetts. A wide range of pre-K curriculum is offered in various states, but, as is custom in the U.S., curriculum is not consistent across all states.

Methods

This study began with searching articles on Google Scholar. Information was obtained lawfully, and all studies referenced have been cited in APA format. Information in this literature review was reported accurately and all studies referenced included published works and studies. Studies included did not include names of any students involved in the data collection. Information collected has been used solely to compose this literature review.

Articles about the effects of Pre-K were examined with an a priori theme of school readiness. Searches on Google Scholar included: universal pre-k, universal pre-kindergarten, universal pre-kindergarten New York, cognitive development and universal pre-kindergarten, effects of universal pre-kindergarten on cognitive development, the effect of Woodcock-Johnson achievement test on high school, the effect of universal pre-kindergarten on retention, and NAEP scores in universal pre-kindergarten programs. The selection for inclusion criteria included relevant articles and studies to the topic of Universal Pre-K, including material not older than 2000, and looking at geography of pre-K programs only within the United States. The articles used in this study were directly related to the topic of school readiness in relation to participation in Pre-K and/or Universal Pre-K programs. Qualitative and quantitative studies were included, and all articles and studies related to work that was undertaken solely in the U.S. Research-based evidence from the literature was collected, organized, and analyzed to inform the development of a literature review using the process of pawing and cutting and sorting (Ryan & Bernard, n.d).

By reading and collecting qualitative data from the condensed reading list, focusing on articles relating to the effects of Pre-K programs on school readiness, emergent themes became clear as research progressed. Through meta-analysis of quantitative data, trends in studies were shown through the collected statuses. The overarching method used was constant comparison (Strauss, 1987). Information sought from each article included: (1) What were they [authors] trying to find?; (2) What were their claims?; (3) What was the evidence?; and (4) Conclusions. Information from each article related to each question was copied into a Word Document with identifying

information linking the text to the source article. Common patterns in claims, evidence, and conclusions of the concise list of articles were studied to identify recurring themes. The information related to the questions for each article were coded, cut up and grouped into categories with claims sorted first to seek emergent themes. Data from the articles was grouped and regrouped multiple times to find themes until new themes were no longer discernable. All themes were coded.

The themes that emerged were (1) short-term effects of Pre-K on cognitive development measures for students entering Kindergarten and (2) long-term effects of Pre-K on academic performance through high school. Student data was generally reported by student demographics. Subthemes of the long-term effects theme were found to include student achievement as measured by assessments administered in later years as well as school retention rates. The Google Scholar articles served as credible data sources to derive and form my thesis conclusion. Through the process of compiling concrete information, the conclusion was formed to answer my proposed question of why is universal pre-K not more widespread? The effect of pre-K programs, including universal pre-K, on the emergent themes reveals the benefits of these programs.

A Priori Theme

School Readiness.

One overall, initial theme prior to research was the effect of Pre-Kindergarten on students' cognitive development related to school readiness. School readiness is defined differently by credible sources including the American professional society National Accreditation of Young Children (NAEYC), federally funded Head Start and local Massachusetts's regulations. NAEYC defines school readiness in terms of factors

regarding the diversity among children's early life experiences as well as inequity, disparity in their development and learning, as well as deeming that school expectations of children entering school [Kindergarten] are appropriate and supportive of children's individual differences (NAEYC Position Statement, 1995). Head Start reflects the standpoint of the U.S. Department of Education with the definition of school readiness as, "…children who are ready for school, families are ready to support their children's learning, and schools are ready for children." (Head Start, 2018, P.1) Head Start also takes into account the physical, cognitive, social, and emotional development to help define school readiness, as well as promoting goal-oriented relationships, equity, and inclusiveness (Head Start, 2018). The Executive Office of Health and Human Services (EOHHS) and Office of Child Care Services (OCCS) discusses school readiness in relation to indicators. The Massachusetts School Readiness Indicators Project (MSRIP) (Executive Office of Health and Human Services & Office of Child Care and Services, n.d.), led by the EOHHS and OCCS, included two indicator groups: (1) Children are ready to learn, which include children's physical and emotional health, language and cognitive skills, and social competence; (2) Families, Schools and Communities are Supportive, Safe and Healthy, which relates to Early Care and Education Programs and Schools Are Ready for Children, transitions, family involvement, self-sufficient families, safe and healthy Communities (Executive Office of Health and Human Services & Office of Child Care and Services, n.d.).

Emergent Themes

Introduction.

Two emergent themes became prominent throughout this research: (1) Short-term effects of Pre-K on school readiness upon entering Kindergarten; and (2) Long-term effects of Pre-K on student academic performance. While school readiness is defined in different ways by various organizations, in this paper, school readiness is operationalized as student achievement on cognitive tests administered upon entry into Kindergarten. The second emergent theme relates to the impact of pre-K on student academic performance in later school years and school retention.

How are the effects of pre-K measured?

The impact of pre-K participation is measured largely by test scores (including literacy, and math skills) (Gormley, Gayer, Phillips &Dawson, 2005; Lazarus, Ortega, 2007; Fitzpatrick, 2008). The most common tests used in the studies referenced include the Woodcock-Johnson Achievement (Gormley & Gayer, 2005; Gormley, Gayer, Phillips & Dawson, 2005; Fitzpatrick, 2008; Lazarus & Ortega, 2007; Woodcock Johnson IV, 2014) and the National Assessment of Educational Progress (NAEP) in reading and mathematics (Fitzpatrick, 2008).

The Woodcock-Johnson Achievement Test includes subtests in print awareness, letter-identification, spelling, and applied problems, which includes math assessments (Woodcock-Johnson IV, 2014). In studies of the effects of Pre-K, data from the Woodcock-Johnson assessment was collected from children after completing pre-K, prior to entering Kindergarten (Gormley & Gayer, 2005; Gormley, Gayer, Phillips & Dawson, 2005; Gormley et al., 2008; Woodcock-Johnson IV, 2014). The pre-math, pre-numeracy and pre-reading skills refer to skills learned prior to kindergarten and are tested by the Woodcock-Johnson before entering kindergarten (Gormley & Gayer, 2005; Gormley et

al., 2005 Woodcock-Johnson IV, 2014). Pre-reading, pre-numeracy, and pre-writing skills necessary are necessary for future school success (Gormley, 2008; Lazarus & Ortega, 2007). The Woodcock-Johnson Achievement tests (also categorized as an IQ test) are valid and reliable assessments used to determine cognitive abilities and achievement for young children and adults. The most recent Woodcock-Johnson Test is the WJ-IV (Woodcock-Johnson IV, 2014)

The National Assessment of Educational Progress (NAEP) is administered through the National Center for Education Statistics (NCES) within the U.S. Department of Education and the Institute of Education Sciences (IES) (NAEP, 2019). The NAEP is given to students with similar characteristics, such as race, ethnicity, gender, and school location. Results are available nationally for all subjects, including reading, mathematics, science, writing, arts, civics, geography, U.S. history, economics, and technology and engineering literacy. Nationally NAEP is administered for grades 4, 8, and 12, with State administered in just grades 4 and 8, unless specified otherwise (NAEP, 2019).

Retention requires a student in a given grade, for the duration of an entire school year, to repeat the same grade (Anderson, Whipple, Jimerson, 2003). School retention has been used as a form of intervention to help student achievement (Fitzpatrick, 2008; Lazarus & Ortega, 2007). Retention is associated with negative outcomes relating to poor academic achievement, behaviors such as aggression, and overall mental health (Anderson, Whipple, Jimerson, 2003), which can impact students' future success.

Demographics.

Demographics refer to statistical data describing students by their various racial and ethnic membership, socioeconomic status, education level, age, and sex. Students in this study included children referred to as "disadvantaged" (Gormley et al., 2005), are those identified as being ethnic/racial minorities and students of low-socioeconomic status, and children aged 4 through high school age. Both studies of school readiness (Armor, 2014; Assel et al., 2007; Gormley & Gayer, 2005; Gormley, Gayer, Phillips & Dawson, 2005; Gormley et al., 2008) and long-term academic achievement (Fitzpatrick, 2008; Laosa, 2007; Lazarus & Ortega, 2007) presented findings by students' various demographics.

Studies varied in the demographics of student groups they examined. Related studies grouped children primarily by their socioeconomic status. Gormley, Gayer, Phillips and Dawson (2005) identified "disadvantaged" children as those of low economic status and minorities including Black, Hispanic, and Native American children. Students' socioeconomic status was determined by student enrollment in free, reduced, and full price lunch for various studies observing the impact of universal pre-K programs (Assel, Gunnewig, Landry, & Swank, 2006; Gormley et al., 2005; Gormley & Gayer, 2005; Gormley, Gayer & Phillips, 2008; Fitzpatrick, 2008; Lazarus & Ortega, 2007;). Assel et al. (2006) observed Caucasian, and African American children as well as Hispanic children. Gormley, Gayer, Phillips, and Dawson (2005) categorized children by race (Black, White, Native American) and ethnicity (Hispanic). Lazarus and Ortega (2007) compared students who were retained to those who were low achieving but still promoted and this included children of all ethnicities and economic backgrounds.

Emergent Theme 1: Short Term Effects Of Pre-K On School Readiness.

The first emergent theme is the impact of pre-kindergarten on school readiness. The impact of pre-K participation on school readiness is evaluated based on the Woodcock-Johnson test scores of children from varying socioeconomic backgrounds, including students of low-income families and minorities by analyzing the test scores to show gains in school readiness (Assel et al., 2007; Gormley & Gayer, 2005; Gormley et al., 2005; Gormley, Phillips, & Gayer, 2008). The studies reported on impacts on all students' cognitive gains relating to literacy (print awareness, pre-reading, and pre-writing skills) and math (pre-numeracy math skills), including students of varying socioeconomic backgrounds.

The Woodcock-Johnson test score results showed increase in skills, such as print awareness and math, for students including Hispanics, and at risk children (Gormley et al., 2005; Lazarus & Ortega, 2007). The Woodcock-Johnson results showed that students scored the highest in Letter Identification, followed by spelling, and applied problems (Gormley et al., 2005). A study of the effects of the Michigan School Readiness Program (MSRP), a state-funded preschool program targeting at-risk children, found increases in average math scores on the Woodcock-Johnson-III Applied Problems subtest in children who had participated in MSRP (Lazarus & Ortega, 2007). The largest positive effects were found in print awareness (Lazarus & Ortega, 2007). The study done by Georgetown University in the Oklahoma Preschool Program found that for letter-word identification, spelling, and applied problem-solving, gains were higher for Hispanics than children from other backgrounds (Laosa & Ainsworth, 2007).

Findings are reported in terms of race and ethnicity according to the various studies measured by the Woodcock-Johnson Achievement within Tulsa's pre-K program. As a result of attending universal pre-K, students in the Tulsa Public Schools were shown overall to have better pre-reading skills, better pre-writing skills, and better pre-math skills upon entering kindergarten measured by the Woodcock-Johnson Achievement (Gormley & Gayer, 2005; Gormley et al., 2005, Gormley et al. 2008). Children from diverse racial and ethnic backgrounds and from diverse socio-economic backgrounds were shown to benefit from the program. Hispanic students benefitted the most though black, white, and Native American students also showed gains from the program (Fitzpatrick, 2008; Gormley et. al, 2008). High quality pre-K programs will increase the school readiness of children from all socioeconomic backgrounds (Assel et al. 2007; Gormley et al., 2008). The Gormley (2005; 2005; 2008) studies showed evidence on school readiness, but did not address the long-term effects.

For Hispanics enrolled in full day pre-K programs, higher scores were shown in language, and cognitive skills (Gormley et al., 2008; Gormley & Gayer, 2005). All groups of children of varying socioeconomic backgrounds, ethnic and racial groups including Blacks, Hispanic, Native American, and White, in Tulsa benefitted (Gormley, 2005, Gormley, 2008). Children who participated in state funded pre-kindergarten programs eighty-five percent growth in print awareness compared to children who had not been enrolled in the programs (Lazarus & Ortega, 2007). The evidence showed that the gains were greatest for children taking part in the free and reduced lunch programs (Gormley et al., 2005; Gormley & Gayer 2005, Gormley et al., 2008; Fitzpatrick, 2008).

Emergent Theme 2: Long term effects of Pre-K on student academic performance.

Long term effects of pre-K programs, including universal pre-K, relate to academic achievement on standardized tests, reduced school retention practices, as well higher graduation rates. Cognitive development as it relates to the National Assessment for Education Progress (NAEP) Achievement tests is one facet that falls under school readiness because it used to assess academic achievement in later years (Fitzpatrick, 2008; Lazarus et al., 2007). School retention relates to pre-K programs and long-term achievement because high quality pre-K programs can reduce retention rates (Fitzpatrick, 2008; Lazarus et al., 2007).

Long-term student achievement.

The effect of universal pre-k can be discussed in different ways, another facet being when children go to school as well as the long-term effects on fourth graders' NAEP scores (Ainsworth et al., 2007; Fitzpatrick, 2008), and retention of students in a grade level (Fitzpatrick, 2008; Lazarus & Ortega, 2007). Pre-K programs that have shown long-term effects are the Perry Preschool as well as the Abecedarian preschool program (Armor, 2014). Only mathematics and reading scores are addressed in this paper. The strongest predictors of later achievement were math, reading, and attention skills observed upon entering Kindergarten (Duncan, Dowsett, Claessens, Magnuson, Huston, Klebanov, Pagani, Feinstein, Engel, Brooks-Gunn, Sexton, Duckworth & Japel, 2006). Universal Pre-K availability was shown to increase both reading and mathematics test scores at fourth grade, using the NAEP scores, as well as the probability of students being on-grade for their age for disadvantaged students, who qualified for free or reduced lunch (Fitzpatrick, 2008, NAEP, 2019).

Retention.

> "Retention is defined as repeating a grade – students are retained when they are required to repeat the grade in which they were enrolled in the previous year." (MADOE, 2006, P.1).

Retention has been used a form of intervention to improve academic achievement but it takes a toll on students. Sixth grade students stated that retention caused intense stress levels, and was ranked as one of the most stressful life events (Lazarus et al., 2007). Many studies showed that the initial progress in achievement declined after two or three years after retention (Lazarus & Ortega, 2007).. Lazarus & Ortega (2007) showed that retained students had a lower level of academic achievement than low-achieving students by the end of eleventh grade (Lazarus & Ortega, 2007). Students who were retained have a higher chance of dropping out of high school (Fitzpatrick, 2008; Lazarus et al, 2007). High quality pre-K programs have been identified as effective, empirically- based strategies for preventing retention (Fitzpatrick, 2008; Gormley et al., 2008; Lazarus et al., 2007). If students are more prepared entering kindergarten, they would be less likely to repeat kindergarten (Fitzpatrick, 2008). Though NAEP does not repot on if a child was held back, the age and birth month can be used to determine if a child is on grade level for their age and grade (Fitzpatrick, 2008).

The results pertaining to the effects of pre-K programs on long-term achievement, as measured by standardized test scores or school retention, generate conflicting data. The long-term effects of pre-K programs fade, and the study of the evidence on Universal Preschool stated that, "Neither the national Head Start Impact Study nor the statewide Tennessee program shows long-term effects of preschool." (Armor, 2014, P. 2). Other studies indicate that the most effective way to prevent poor academic outcomes is to

provide quality early intervention such as Universal Pre-Kindergarten programs (Lazarus et al., 2007; Gormley et al. 2008). U.S funds for the retained students could go towards universal pre-K programs that are available to all students (Lazarus & Ortega, 2007). Increased kindergarten readiness can lead to higher achieving students (Lazarus & Ortega, 2007). Learning to read at an early age can prevent retention because students who are slow in reading acquisition experience cognitive, behavioral and motivational affects, and a higher chance of falling behind peers and dropping out (Lazarus & Ortega, 2007). The studies contradict evidence and ideas, indicating that the effects on the long term cannot be determined in this research. Additional studies would be necessary to clarify the results of long-term achievement and success of pre-K programs.

Conclusion

Studies of the impact of pre-K on cognitive gains suggest consistent, positive short-term effects that extend to school readiness for kindergarten. Findings from this research show stronger short-term effects on school readiness for children from disadvantaged (including low-socioeconomic and minorities), and ethnic / racial minorities groups entering Kindergarten.

The data about long-term effects are less clear due to conflicting data in the studies. NAEP scores at 4th grade of children who participated in pre-K programs revealed higher levels of achievement when compared to their non-Pre-K participating peers, suggesting that there is long-term benefit of pre-K participation. Some pre-K programs were shown to have long-term impacts while other programs did not show any later achievement through high school; the effects faded. Universal pre-K programs could

be used as a form of intervention, and benefit students who would be retained. The Woodcock-Johnson revealed that test scores improved across the board, with the greatest academic gains for children from varying socioeconomic backgrounds, including students of low-income families and minorities. The NAEP scores showed the most improvement on reading and math scores in later years for students who attended universal pre-K. The least improvement was shown for White children, though gains were still seen in test scores. School retention is not an effective form of intervention and does not benefit all students, whereas a Universal pre-K program would be open to all children.

To determine the greater effects of Universal pre-K on a larger scale, a larger population would have to be analyzed. Other factors relating to school readiness were not addressed in this study, such as single vs. two-parent households, number of siblings in the family, and teachers' impacts on students' school readiness. The effects of Universal pre-K are worth the cost for children to enter Kindergarten even with the majority of improvement in short term school readiness as opposed to long term. The sort term effects showed great gains for Hispanic students, and students of low-socioeconomic status upon entering Kindergarten. White students tended to show the least improvement compared to students who had not attended universal pre-K programs, though students of all racial/ethnic, socioeconomic groups showed gains in pre-math and pre-literacy skills on the Woodcock-Johnson scores. Regarding the long-term impacts, universal pre-K would benefit students more than retention, though some studies showed that the lasting impacts of pre-K fade. Universal pre-K would benefit students in the long-term, however, because it would serve as a positive intervention as opposed to retention, which has been proved to show numerous negative impacts in the long run on students' cognitive,

behaviors, and mental health. Universal pre-K would be worth the short-term school readiness benefits as well as the long term benefits because the Universal pre-K impacts students more positively over retention, which proposes problems later on for students not solely pertaining to academic achievement.

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