PLAYGROUND IDEAS

The Case For

By Peter Kellock, Illustrations by Adelaide Daniell & LiveStories

Acknowledgements

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-Peter Kellock

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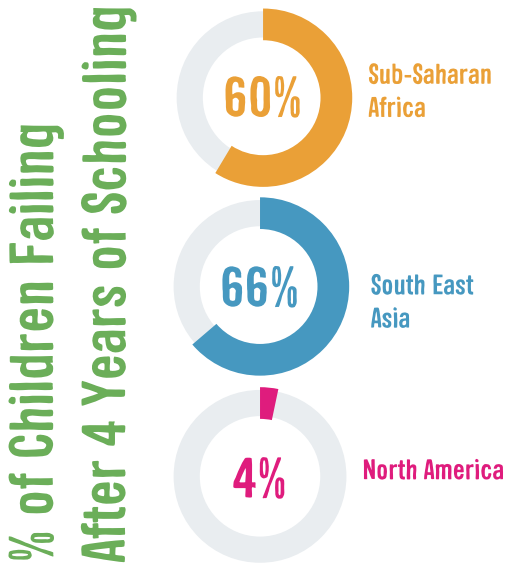
Executive summary

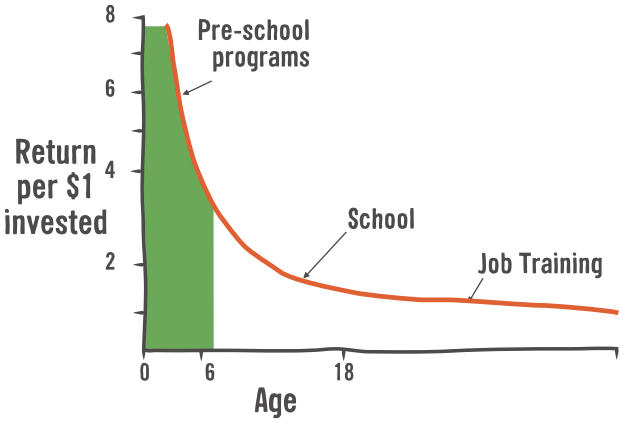
Today over 90% of the world's primary age children attend school. But sadly for many children across the globe, the education they are receiving is failing to equip them with even the most basic skills. In some parts of the world up to two-thirds of children are failing to reach the minimum benchmarks of learning.



(UNESCO, 2014, Paris)

For millions of children throughout the developing world, school is largely characterized by overcrowded classrooms, poorly trained teachers, and rote learning. Millions of disadvantaged children in under-resourced education systems enter adolescence ill equipped to gain employment or escape cycles of poverty in adulthood.

Rates of Return to Human Development Investment Across all Ages



(Cameiro & Heckman, 2003)

Multiple 20-40 year longitudinal studies have demonstrated a profound impact of play based interventions in the education and long-term life outcomes of children living in poverty. In addition, these interventions have resulted in significant economic gains both for the individuals and for society as a whole.

Research on play interventions show that it results in significantly raised IQs, greater levels of education attainment, higher rates of employment, and increased wages.

Disadvantaged children in Jamaica who were provided with additional early play stimulation resulted in their average earnings increasing by 42% 20 years later compared to other children.

RAISE EARNINGS BY

42%

Where play-based approaches in pre-schools were trialled, participants 20 years later completed an average of almost one full year more of schooling, achieved a 44% higher high school graduation rate, while the percentage with bachelor degrees increased by 17%.

INCREASE HIGH SCHOOL GRADUATION BY

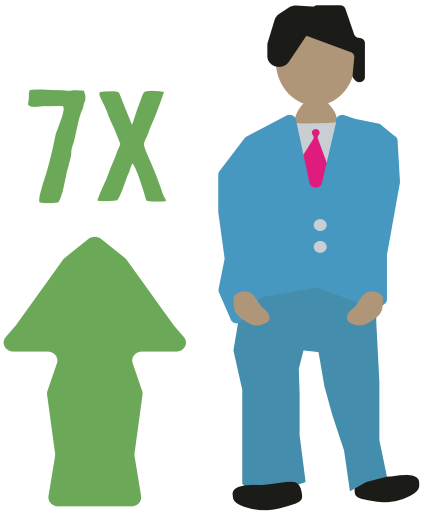
44%

INCREASE BACHELOR DEGREES BY

17%

The individual and social economic benefits from a play-based preschool program was $244,812 per participant over 40 years on an investment of $15,166 per participant.

Participants from pre-schools where play-based approaches were trialled showed increased employment 7 times higher at the age of 40 than one would expect based on their level of educational attainment.



increased employment

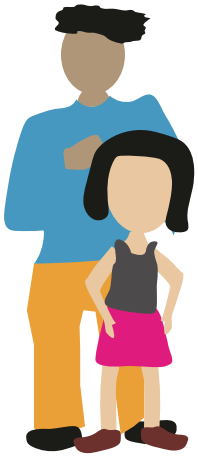
One of the under recognized but crucial biological functions of early play is the development of self-regulation, a skill difficult to teach but naturally developed through play. Early development of self-regulation skills is a reliable predictor of social, cognitive, and interpersonal skills which have positive effects far into adulthood.

In addition, multiple studies illustrate the effects of early play experiences in developing language and literacy, numeracy, and creativity and ingenuity. If we are to equip children with the skills to thrive in the rapidly changing world around them, meaningful early play experiences are essential.

Call to Action

Research has proven play interventions to be a powerful, cost effective poverty reduction tools with sustained impact. We call on both public and private sectors that oversee the welfare of children to:

1. Ensure every child under the age of 12 has substantial daily access to a stimulating, safe space for play.



2. Emphasize the importance of early play opportunities from 0-3.

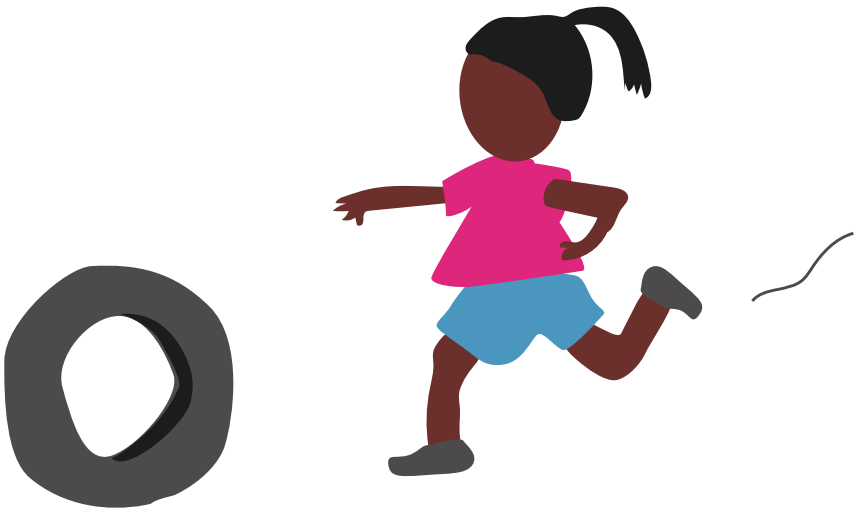
3. Prioritize play as a basic right for children in crisis.

Introduction

Play in the early years of life has a profound and lasting influence on a child's health, wellbeing, and long-term development. Studies have shown early play experiences to shape a child's physical growth, capacity for learning, chances of finishing school, future employability, and even income. This paper brings together a range of evidence spanning the fields of evolutionary psychology, child development, sociology, pediatrics, neuroscience, and economics to illustrate the importance of play for healthy child development and the potential for play interventions as powerful poverty reduction tools.

Childhood play is a universal phenomenon found across time and in all cultures. There is a deep evolutionary drive to play that can be identified among primates, mammals and even some invertebrates. For nearly all forms of life, play is the leading source of development in the early years. Play is particularly important for humans because of the complex social system in which we live, which we need to learn to successfully operate within and adapt to. (Gray P 2013, Pellis S et al, 2014)

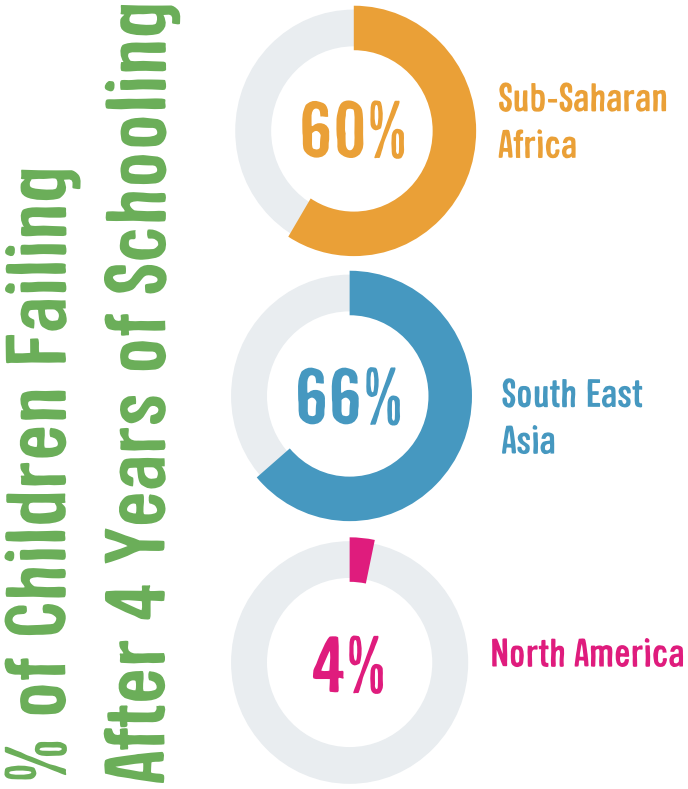
Through play, children develop the neurological building blocks essential to further learning and growth. They form connections, build social and emotional skills, and develop positive long-term attitudes to discovery and learning. Play is not an alternative to learning. It is not a diversion from learning. Rather, it provides the foundation for learning and has an important role in shaping a child capacity for, and attitude towards subsequent learning.



The issue

Today over 90% of the world's primary age children attend school. But sadly for many children across the globe, the education they are receiving is failing to equip them with even the most basic skills. In some parts of the world up to two-thirds of children are failing to reach the minimum benchmarks of learning.

In many schools throughout the developing world, education environments are not conducive to learning, and provide few opportunities for child-led discovery or play. Rote-learning pedagogy - where classroom time is teacher dominated and lecture-driven - remains prevalent throughout the world.



(UNESCO, 2014, Paris)

In addition to pedagogy and quality of teaching, many classrooms are severely overcrowded, leaving teachers unable to manage lessons, and students with little to no meaningful teacher interaction. In Malawi, there are 130 children per class in grade 1. In South Sudan, pupil/teacher ratios are as high as 145:1 in some areas. In Yemen, schools with 500 students were found to have as few as four teachers. (UNESCO, 2015, Paris)

Outside of school, there are a myriad of barriers to play for children in the developing world. Urbanization is fast crowding out any free spaces once open to children. For low-income families, household duties or help with family agriculture or businesses often consume children's time outside of school. In many areas of the world, the burden household chores and care of younger children often falls unequally heavy on girls. For millions of children, these factors leave little time or space for free play.

While the "Right to Play" is recognized in the UN Convention on the Rights of the Child, the international development community very rarely addresses play provision in development goals and activities. Thanks to efforts such as the Millennial Development Goals, there is much emphasis on the importance of education, in particular on enrollment, but less consideration is given to the quality of environment students experience once they are in school. Schools without playgrounds are more common than not and funding is narrowly directed towards literacy and numeracy programs.

In the developed world, with smaller families, and greater affluence, young children now spend much less time in groups of children of mixed age, and instead have parents who provide more structured activities that replaced much of the time that was previously spent in social play with other children.

The long blocks of time devoted to free play in many early childhood programs are disappearing, crowded out by a focus on pre-academics as the foundation for school readiness. Free play happens in the leftover time, when there is nothing 'more important' to do. (Hewes J, 2010) This widespread phenomenon of academic early education in place of free play experiences is, as Nancy Carlsson-Paige, a professor emerita of education at Lesley University in Cambridge, Mass., puts it,

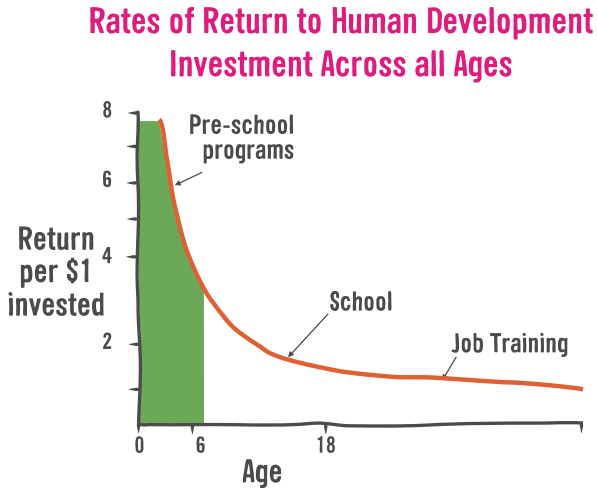
"a profound misunderstanding of how children learn."

The effect, over decades, has been a continuous and ultimately dramatic global decline in children's opportunities to play and explore in their own chosen ways. (Gray P, 2013) Expanding access to play could make an enormous contribution to learning outcomes for millions of young people.

Potential of play interventions

Long term benefit

Play based interventions can pay lifelong returns for individuals born in poverty. (World Bank, World Development Report 2015)



(Cameiro & Heckman, 2003)

The benefits that play provides for individuals have been tracked over decades. Developing strategies to increase play during early childhood creates the foundation for an individual's development of cognitive and social skills that help to determine their lifetime earnings. (Gertler et al, 2013) In addition, play based interventions have been shown to increase time subsequently spent in school, levels of qualifications achieved, and the lifetime earnings from work.

Studies conducted in both developing and developed countries have reached similar conclusions.

Play interventions within families

More learning occurs outside schools than within them. Research over 40 years in many countries has found that schools only account for between 20-40% of the learning outcomes (the skills, knowledge and attitudes) achieved by students. Many studies have confirmed that family environment and other non-school factors are more influential than schools in determining academic outcomes. (Emerson et al 2012)

Likewise, negative non-school factors are strongly indicators of a child's later life outcomes. All the world's children do not enter school with the same chances of success. The degree of socio-cultural, biological, and psychosocial risk factors a child is born into largely determines their path. A child in a high-risk environment has few chances of escaping cycles of poverty. (Walker et al 2007)

Research has shown play-based home interventions very early in life to be one of the only approaches capable of counteracting early risk factors, thereby reducing later life inequality.

How much parents play with their children in the first few years of life is crucial to the child's development and long term success. Interventions designed to support mothers to increase levels of play and interaction has been demonstrated to have long-term positive outcomes for children, especially those from poor and disadvantaged backgrounds. (Gertler et al, 2013)

Interventions with parents that particularly emphasize the importance of play and communication can shift basic parental approaches and beliefs, and assist the next generation to escape poverty and improve their economic status. (World Bank, 2015)

A study conducted in Jamaica between 1986-1987 provided home stimulation intervention to 129 stunted children aged between 9–24 months in low-income communities.

Health workers carrying out home visits to coach mothers to play with their children . Source: The University of the West Indies,

Stunting is well documented as an easily and accurately observed indicator of malnutrition and is strongly associated with poor cognitive development. (Grantham-McGregor and others 1991)

Over a period of two years, trained health-workers conducted one-hour weekly visits in which mothers were coached to interact and play with their children in ways designed to develop cognitive and psychosocial skills. (Gertler et al, 2013) The curriculum included detailed structured activities that promoted high-quality interactions between mother and child through role-play and homemade toys. (World Bank 2015)

Jamaica Study

Participants: Children 9-24 months, developmentally stunted due to malnutrition and living in disadvantaged communities.

Intervention: 2 years of weekly play visits.

20 Year Followup: 42% higher earnings, 3x more likely to attend college, higher cognitive development, higher psychosocial skills, lower rates of depression and anxiety

The regular contact allowed the mothers plenty of opportunities to practice the newly acquired skills over time. The study then tracked the children for 20 years. The study concluded that the early play stimulation resulted in significant long-term labor market effects for the participants. (World Bank 2015)

The Jamaica study stimulation intervention for these young children increased their average earnings by 42% after 20 years compared to a similar group of children who had not received the play based intervention.

In fact, the earnings of the disadvantaged group who received the play intervention later completely caught up with the earnings of a matched non-disadvantaged comparison group. In addition, children who received the intervention completed significantly more schooling, were three times more likely to have had some college education than the control group, had higher IQs, scored higher in tests of cognitive and psychosocial skills, exhibited less violent behaviors, and fewer symptoms of depression and social inhibition – all important determinants of labor market outcomes. (Gertler et al, 2013, Walker et al, 2011)

Handmade toys used in the 'Jamaica Study' play intervention. Source: Susan Walker

Potential to Counteract Ill Effects of Early Malnutrition

It is estimated that approximately 178 million children under the age of five in the developing world are stunted and will likely not reach their developmental potential. Poor early development is a well-documented predictor of lower educational attainment and subsequent lower adult income, thus maintaining the cycle of poverty. (Walker et al, 2011).

A significant finding from the Jamaica study, discussed earlier, was the difference it found between stimulation based interventions and nutrition based interventions for the children it followed.

In addition to the stimulation intervention group, a similar group of children received a two-year weekly nutrition intervention. The goal of the intervention was to compensate for nutritional deficiencies that likely caused stunting. Children were provided with formula supplements containing 66% of daily-recommended energy (calories), and 100% of daily-recommended protein. (Walker et al.,1992).

In the first two years of follow up study, both interventions positively impacted child development. But in the years following, the effects of the nutrition intervention were not sustained. (Walker et al 2011

In the 20-year follow up study, the nutrition intervention was found to have no long-term effect on any outcome. In this study, parenting support for psychosocial development proved more beneficial than improved nutrition. (Walker et al 2011, UNESCO 2015)

These conclusions are supported by the initial findings of a similar study in Pakistan. 1489 mother/infant pairs enrolled in the study either received weekly nutrition or stimulation based interventions. Subsequent development testing was carried out at 12 and 24 months. Children in the stimulation group scored significantly higher in cognitive, language, and motor skills at 12 and 24 months of age, and in social–emotional sills at 12 months of age, than did those who received no intervention.

Children in the nutrition group scored higher in cognitive, language, and social-emotional skills at 12 months of age than those who received no intervention, but at 24 months of age most of these increases dropped off and only the language scores remained higher. (Yousafzai et al 2014)

In the years since the 'Jamiaca Study,' similar early play intervention programs have been trialed around the world.
Source: The University of the West Indies, Jamaica

Play interventions within schools

Several studies have demonstrated that increasing the amount and the quality of play in educational settings can improve the long-term outcomes of disadvantaged children. By improving the education and earnings of the disadvantaged, play helps to break the intergenerational transmission of poverty. (Gertler et al, 2014) (World Bank 2015) Conversely, while increasing the amount of direct teaching instruction for young children appears to provide short-term outcomes in learning, research indicates that these benefits are not sustained in the long run. In fact, introducing formal learning too early for young children can be counterproductive. (Hewes J)

In the USA, the High/Scope Perry Preschool study based in Perry School in Michigan that commenced in the early 1960s identified long-term benefits from a high quality preschool education program for young children who were living in poverty. From 1962 to 1967, teachers arranged the classroom and daily schedule to support children's self-initiated learning activities, provided both small-group and large-group activities, and helped children engage in key experiences in child development. (Schweinhart et al, 2005)

Staff identified 123 low-income African-American children who were assessed to be at high risk of school failure. (Schweinhart et al, 2005)

The children were divided into three groups:

- One group participated in a program that was play-based
- A second group received academic oriented direct instruction, and
- A third group participated in a program that was a combination of both.

Tracking all three groups to the age of 23, the group that had participated in the play-based program showed gains over the other two groups. (Department of Education, Government of Newfoundland and Labrador 2011)

High/Scope Perry Preschool Study

Participants: 123 low-income children with high risk of school failure.

Intervention: Early childhood education program divided into three groups: play based, academic oriented direct instruction, and combination.

Adult Followup: Play-based group showed significant gains over the other groups with 1 full year more schooling, 44% higher rate high school graduation, and 23% higher rate of bachelor's degrees.

The longer that the follow-up was conducted, the more pronounced the benefits became. When followed up at the age of 27, those who had been in the program had completed an average of almost 1 full year more of schooling (11.9 years vs. 11 years), and had a 44 percent higher high school graduation rate (66% vs. 45%) than the group who had not been in the program. The percentage of participants with bachelor degrees increased from 6% to 23%.

These findings of long-term benefits were repeated in the Abecedarian project; an experiment conducted from the 1970s in North Carolina. This experiment studied a high-quality full-time play-based child-care and preschool program, from shortly after birth to age 5, also targeted at disadvantaged children from low-income families.

Source : Carolina Abecedarian Project

Follow up of 111 participants at the age of 30 investigated the educational, economic, and social–emotional adjustment outcomes for the participants. Individuals attained significantly more years of education, with strong evidence for long-term educational benefits. (Campbell et al, 2012)

These findings were consistent with results from the Perry Preschool Project. In the Perry Preschool study, the program had far greater long-term effects on subsequent adult employment rates than one would expect based on its effects on educational attainment. Specifically, the Perry project increased employment rates at the age of 40 about 7 times as much as one would expect based on effects on educational attainment alone. (Bartik T J 2012)

This is because early play-based childhood programs have effects on skills other than just educational attainment. Additional skills developed by play include "soft employability skills" that are important to later success in the labor market. (Bartik T J2012)

Abecedarian Project

Participants: 111 disadvantaged children from low income families.

Intervention: Full time, play-based child care and preschool program for 0-5.

Age 30 Followup: 22% more likely to attend college, reduced crime rates, reduced incidences of drug use, higher income forms of employment, decreased occurrences teen pregnancy, reduced incidences of depression.

Source : Carolina Abecedarian Project

Further research indicates that academic instruction too early can harm a child's cognitive ability. In a study of four year olds in the USA District of Columbia, over 700 children were randomly selected from three different preschool settings (child-initiated, academically directed, or a combination of both) and were followed up in subsequent years until they reached Grade 4. Findings indicated that children who were enrolled in the child-initiated model demonstrated greater mastery of basic skills at the end of pre-school. By the age of nine, the effects of a child's pre-school experience were clearly apparent. For instance, by fourth grade, children in the child-initiated programs were achieving higher grades and passing more reading and math objectives. (Marcon R 2002) (Department of Education, Government of Newfoundland and Labrador 2011)

Over time, the performance of children from academically directed preschool classes declined compared with the performance of children from the same age group in play-based preschools. The difference between their overall school grades ended up being significant and differs by 14%. (Marcon R, 2002)

The author of the study, Rebecca Marcon explains that children's progress "may have been slowed by overly academic preschool experiences that introduced formalized learning experiences too early for most children's developmental status." (Marcon R, 2002)

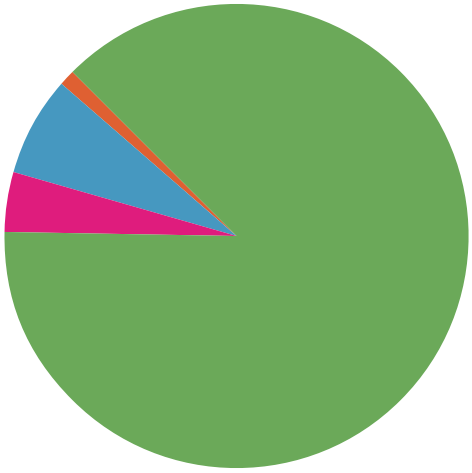
Economic benefits

Increasing the amount and the quality of play in educational settings can improve the long-term outcomes of disadvantaged children. The result closes the education and earning gaps relative to better-off groups. (Gertler et al 2014). (World Bank 2015)

Individual and social economic benefits were demonstrated in the High/Scope Perry Preschool Study, the Abecedarian Project, and the Jamaica Study, discussed previously. (Schweinhart L et al, 2005)
key experiences in child development. (Schweinhart et al, 2005)

The economic return to society of the Perry preschool program over 40 years was $244,812 per participant on an investment of $15,166 per participant—$16.14 per dollar invested (in constant 2000 dollars discounted at 3%). 88% ($171,473) came from crime savings, 4% ($7,303) came from education savings, 7% ($14,078) came from increased taxes due to higher earnings, and 1% ($2,768) came from welfare savings. (Schweinhart L et al, 2005)

Economic Return of $244,812 Per Participant



88% Crime savings

4% Education savings

7% Increased taxes

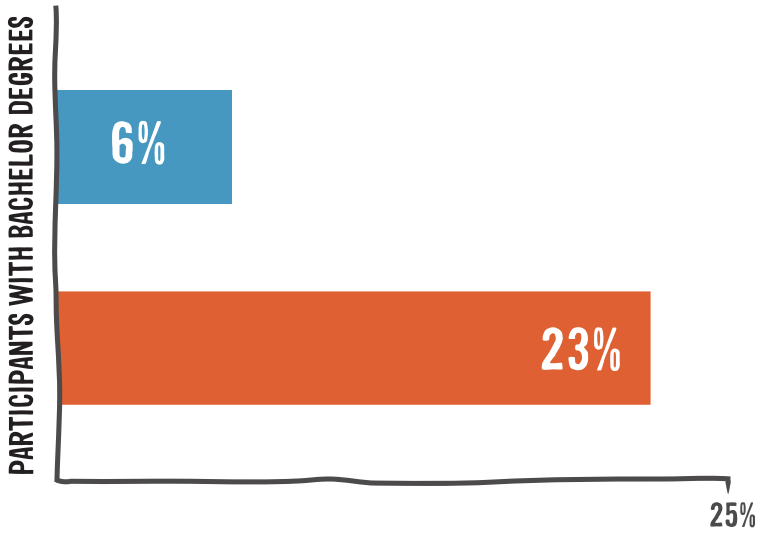
1% Welfare savings

At an individual level, preschool program participants subsequently earned 14% more per person than they would have otherwise ($156,490 more over their lifetimes in undiscounted 2000 dollars).

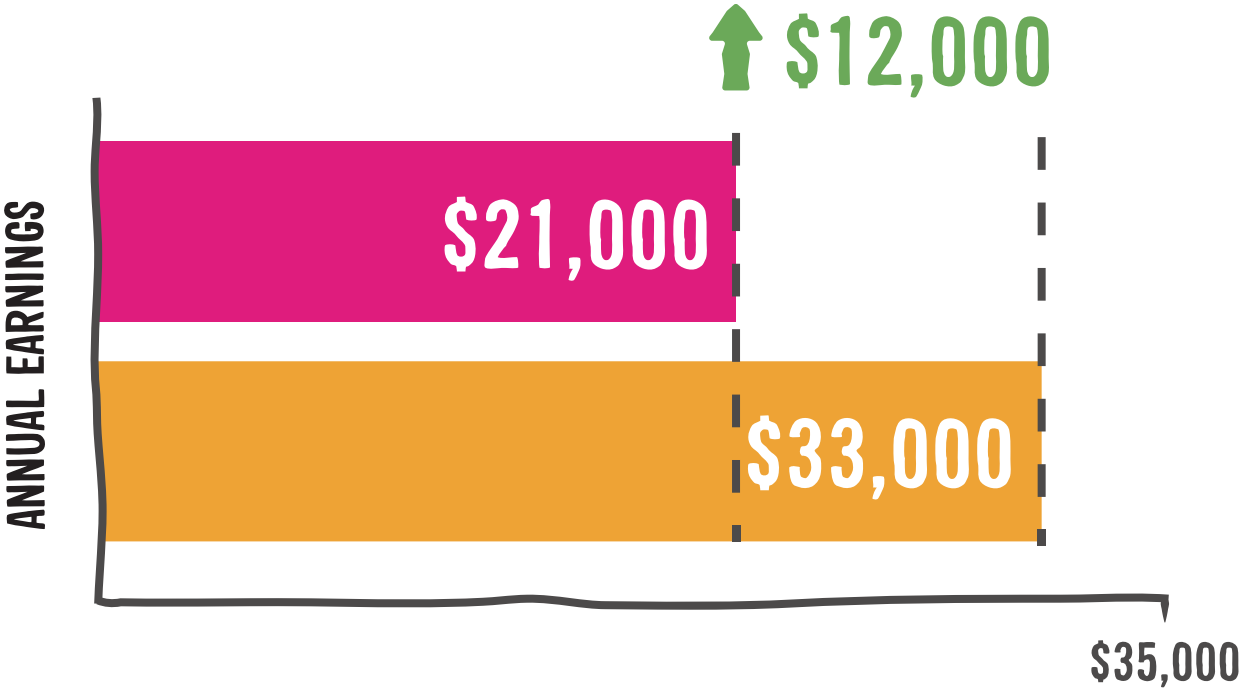
When followed up at the age of 40, they had 42 percent higher median monthly income ($1,856 vs. $1,308), and were 26 percent less likely to have received government assistance (e.g. welfare, food stamps) in the past ten years (59% vs. 80%). (Schweinhart et al, 2004) (Gertler P et al, 2013)

The Abecedarian Project produced comparable long-term outcomes. Follow up at the age of 30 investigated educational, economic, and social–emotional adjustment outcomes for the participants. (Campbell F A, 2012)

The most striking educational effects were that the program raised average years of schooling completed by a little over 1.1 years, and increased the percentage of participants with bachelor degrees from 6% to 23%. (Bartik T J 2012)



The program was estimated to increase annual earnings from a little under $21,000 to a little over $33,000, an increase of over $12,000. This is a large effect on earnings. The estimated earnings effects of over $12,000 well exceed what one would expect based on an increase in educational attainment of only a little over one year. (Bartik T J 2012) Again, this suggests that these children gained skills specifically relevant to long term employability.



The Jamaica study was found to increase average earnings by 42% for participants 20 years later. (Gertler et al 2013) (World Bank 2015)

Improves subsequent academic performance

How does increasing the amount and quality of play for children eventually result in improved academic outcomes and lifelong employment and economic benefits? The fundamental connection is that children learn to control and regulate their own behaviour through play, a critical life skill fundamental to future success.

Develops self-regulation and self-control

The capacity to regulate and control our own behavior is a key requirement for social acceptance, academic success and employability. There is a strong and growing body of evidence linking play in childhood to the development of self-regulatory skills, widely considered to be a key indicator of later academic achievement. (Berk L & Myers A, 2013)

To live in society, people must behave in accordance with conscious, shared understandings of what is appropriate. Children practice this constantly in their play. (Gray P, 2008)

Every form of play involves a good deal of self-control. When not playing, children can act according to their immediate needs and emotions; but when playing, they must act in ways that are appropriate. Play draws and fascinates the player precisely because it is structured by rules that the player has either invented or accepted. (Gray P, 2008)

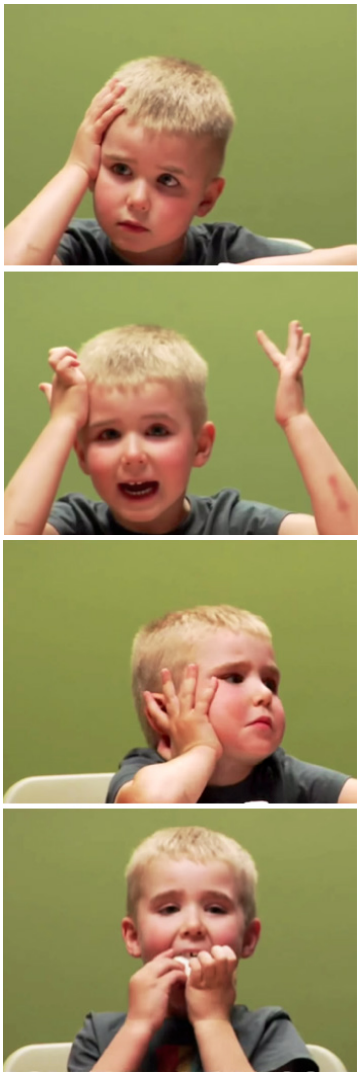
A large body of research confirms that early childhood is a crucial time for laying the foundations of self-control. (Welsh2001; Welsh, Friedman, and Spieker 2008) (Berk L & Myers A, 2013) Between the ages of two and six, typically developing children make impressive strides in focusing attention, inhibiting inappropriate responses, planning sequences of actions, and thinking flexibly. (Berk L and Myers A, 2013)

On the other hand, if children do not systematically engage in self-regulatory behaviors at a young age, the corresponding brain areas don't develop to their full potential. (Bodrova E & Leong D, 2008)

Drawing on experiences in their families, communities, and the wider world, children immersed in pretend scenarios willingly subject themselves to social rules: The child pretending to be a parent or an astronaut conforms to the rules of required of that role. Because play continually requires children to overcome impulse in favor of rule-governed behavior—to wait, share, cooperate, and abide by social conventions—the child develops their greatest self-control during pretend play. (Berk L & Myers A, 2013)

Self-regulated children can delay gratification and suppress their immediate impulses enough to think ahead to the possible consequences of their action or to consider alternative actions that would be more appropriate. While most children know that they are supposed to "use their words" instead of fighting, only children who have acquired a level of self-regulation are actually able to use them. (Bodrova E & Leong D, 2008)

Follow up from 'The Marshmallow Test' developed at Stanford University demonstrates the importance of self-regulation. A group of four-year-olds left alone in a room with a marshmallow were instructed that if they managed not to eat the treat they'd be given a second one at the end of their wait. About 30 per cent of the four year olds were able to resist 15 or more minutes of temptation, and held out for a second marshmallow. (Department of Education, Government of Newfoundland and Labrador 2011)



Footage of a 4-year-old attempting to exercise the self-control necessary to complete the 'The Marshmallow Test.' Source: Igniter Media

The researchers followed up with 185 children as teenagers and adults, and found that those who were able to control their impulses were better adjusted as high school students, scored higher on academic tests, were less likely to be overweight or have drug problems. The number of seconds that children could wait at age four was predictive of social, cognitive, and interpersonal competencies later in life. (Department of Education, Government of Newfoundland and Labrador 2011)

The key point is that self-regulation is a fundamental pre-requisite for subsequent formal learning environments such as school. Self-control and self-regulation enables children to maintain their attention, control impulses, communicate effectively, and engage in learning experiences.

The capacity for self-control and regulation is a strong predictor of subsequent academic achievement. Assessments of a child's self-regulatory capacity during the preschool years consistently predict later academic achievement and social maturity in the years from kindergarten through high school. (Berk L & Myers A, 2013)

A major longitudinal study in the USA showed that a key element of self-regulation, attention span or persistence, in 4 year olds significantly predicted maths and reading achievement at age 21 and the odds of completing college by age 25. (Whitebread D, 2014)

However, increasing numbers of preschoolers are being deprived of play in favor of narrowly focused, developmentally inappropriate academic training in their homes and early-childhood programs.

As a result many children (especially those from poorer families) enter kindergarten with problems in self-regulation that pose serious, long-term threats to their academic success (Berk L & Myers A, 2013)

An early emphasis on the teaching of literacy and numeracy is likely to be far less effective than a focus on supporting children to become self-regulating learners during their early childhood education. (Whitebread D et al, 2015)

For children living in poverty, the development of self-regulation skills can be disrupted by unpredictable environments and sustained levels of stress. In addition, disadvantaged children are less likely to receive consistent support and guidance from responsive caregivers and are also likely to have less opportunity to develop skills in impulse control, perspective shifting, and focused attention. (World Bank 2015)

A focus on enhancing self-regulation, with a strong emphasis on social pretend play, taking turns, and the child's own planning of activities would benefit these children's long term prospects by improving their capacity for self-regulation. (World Bank 2015)

A range of experimental psychology studies have demonstrated that play creates superior learning and motivation compared with instructional approaches to learning in children. (Berk L E, 2006) (Christie J F, 2006) (Sylva K, 1976) (Whitebread D, 2010) (Whitebread D, 2015)

Learning experiences that are actively initiated by children early on enhance their later success in school. Introducing formalized learning experiences in preschool too early for most children's developmental status can actually slow their long-term progress. Pushing children too soon may backfire when children move into the later elementary school grades and are required to think more independently and take on greater responsibility for their own learning process. (Marcon R, 2012)

Develops Language and Literacy

Play ability is a complex ability and provides a foundation on which children build their skills. As they grow older, children rely on the abilities they have built over early and middle childhood. (Stagnitti, K, 2015)

The clearest evidence that children learn while playing is seen in the relationship between pretend play with other children and literacy. (Hewes J ,2010) Play is particularly important in laying the foundations for the development of language and literacy. (Roskos K & Christie J, 2013)

The long-term USA study at the Perry Preschool in Michigan used a play-based program intervention. Long term follow up of the participants showed that the group of students in the play-based program significantly outperformed the no-program group on various intellectual and language tests from their preschool years up to age 7; on school achievement tests at ages 9, 10, and 14; and on literacy tests at ages 19 and 27. (Schweinhart L et al, 2005).

Engaging in pretend play allows children to develop oral language skills, storytelling, vocabulary, and explore the function of written language as a means to early literacy development. For example, children playing in a kitchen centre are developing their language skills when they speak to other children about what they are cooking, the ingredients they are using, and when they write about what they are constructing. As they pretend play, they are increasing their vocabulary, sentence length, and mastering the semantics of language. (Department of Education, Government of Newfoundland and Labrador 2011) (Roskos K & Christie J, 2013)

Children acquire the rudiments of language by the age of three. Children who establish the fundamentals of their vocabularies and syntactic skills in their early years are well equipped to enter school and to succeed socially and academically. Those who do not, such as a disproportionate number of children from lower socioeconomic brackets, often fall behind. (Weisberg D et al, 2013)

Four separate intervention studies that directly examine links between play and language between 1968 and 2007 found that a group of four-year-olds who engaged in one hour of pretend play every day for twenty-five weeks showed increases in language use relative to a control group, who received no intervention. (Weisberg D et al, 2013)

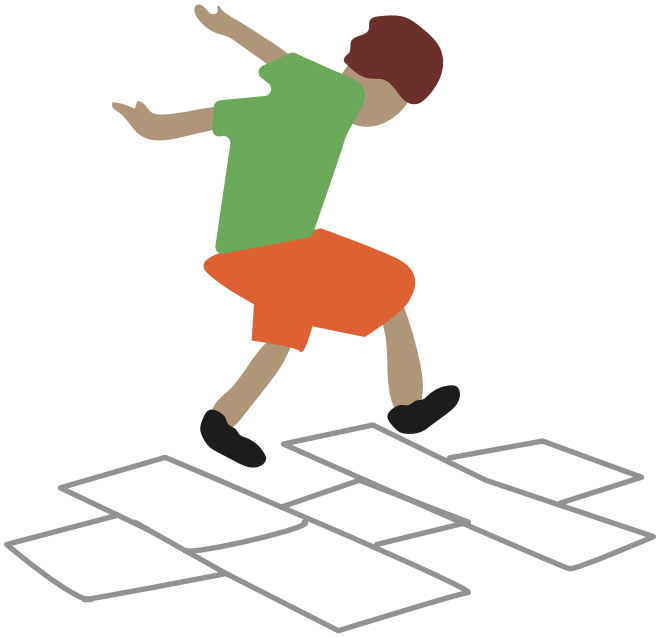
Guided play seems optimal for achieving learning goals in language development. Crucially, during guided play, adults capitalize on teachable moments to support children's learning. Language development seems to thrive particularly well in such settings because children benefit from having an attentive and sensitive adult partner who talks of the things that interest them. (Weisberg D et al, 2013)

A play environment which provides literacy materials also significantly increases the frequency of writing and reading that support the understanding of print (combination of alphabet knowledge, concepts about print, early decoding) when such literacy materials are curriculum related and adult support is available. The effects are moderate to large, and point to the real-world significance of a literacy-rich play environment for young children. (Roskos K & Christie J, 2013)

Through the primary grades, children are learning to read. An academically directed approach typically emphasizes the act of reading over comprehension. But as children are expected to be more independent in the learning process, to assume more responsibility for their learning, and to show greater initiative, motivation and self-initiated learning become crucial for children's later school success. (Marcon R, 2002) It is at this point that literacy developed through play begins to come into its own.

Develops Mathematical Skills

Play also develops children's mathematical thinking. Unlike some forms of knowledge, mathematical knowledge deals with relationships between and among things, and is primarily learned through experience and experiment. (Department of Education, Government of Newfoundland and Labrador 2011) Block building, sand and water play establish the foundation for logical mathematical thinking, scientific reasoning, and cognitive problem solving. (Hewes J, undated) For example, playing with blocks encourages problem-solving, reasoning and divergent thinking and playing with water leads to knowledge of volume. (Department of Education, Government of Newfoundland and Labrador 2011)



A longitudinal study published in the Journal of Research in Childhood Education tested and recorded the complexity of preschoolers block play, and subsequently tracked the mathematical achievements of participants through high school. The study found the complexity of children's play with blocks in the preschool years to reliably predict mathematical achievement at the 7th-grade and high school levels. (Wolfgang et al 2001)

Play allows children opportunities to participate in problem solving activities, investigate and discover, explore cause and effect through hands-on experiences. All of these are a part of numerical thinking and mathematical development. Exploratory play allows children to understand relationships and concepts, which they acquire through first hand experiences. (Department of Education, Government of Newfoundland and Labrador 2011)

Promotes Creativity and Initiative

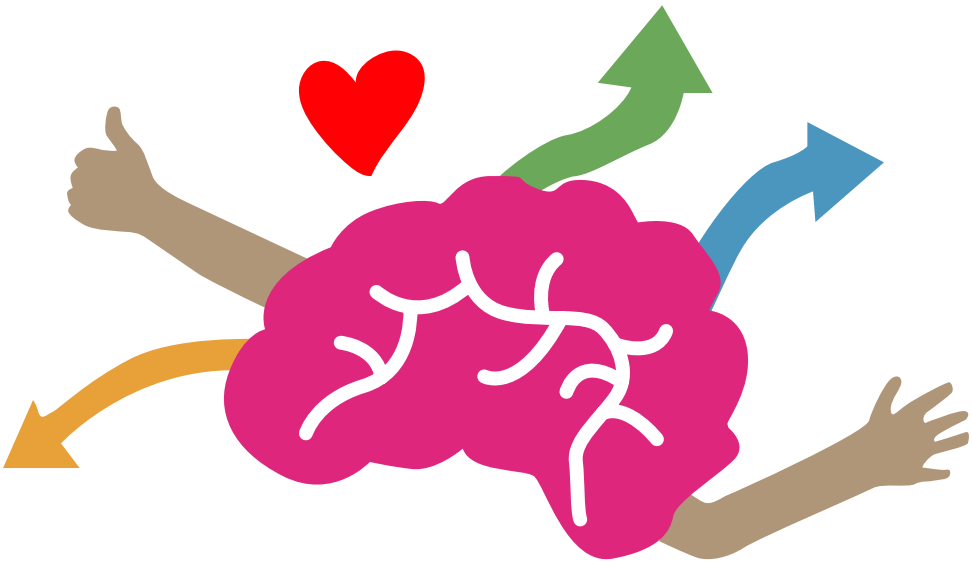
An additional key benefit that results from learning through play is that creativity and initiative are developed and enhanced.

Through play, children experiment and test out possibilities. Play involves pretending, exploring different alternatives (Gopnik A, 2012) and generally being creative. Creativity and flexibility are attributes that have become highly valued in the modern labour market.

Data from a two-year project indicated that children in developmentally appropriate play-based settings scored higher on measures of creativity, or divergent thinking, than children in academically oriented classrooms. (Department of Education, Government of Newfoundland and Labrador 2011)

A study out of the University of California found that 3-4 year olds who engaged in elaborate pretend play scenarios scored higher in tests of counterfactual reasoning—the ability to think about different possibilities. (Buchsbaum et al 2012)

Creativity and ingenuity are the skills children need to become critical, 21st century thinkers capable of resourcefully addressing pressing global issues. If we are to equip children with the skills to thrive in the rapidly changing world around them, meaningful early play experiences are essential.



Call to action

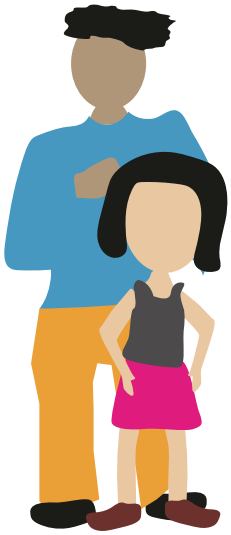
Research has proven play interventions to be a powerful, cost effective poverty reduction tools with sustained impact. If the next generation is to succeed, governments, education ministries, and the international development community must take bold action to increase access to quality play, particularly for children in disadvantaged contexts.

We call on both public and private sectors that oversee the welfare of children to:

1. Ensure every child under the age of 12 has substantial daily access to a stimulating, safe space for play. Early academic study should not take precedence over play, as play is proven to lay a better foundation for later academic and life success. Every school and childcare center should provide a safe, stimulating outdoor space and adequate daily time for free play with other children.

2. Emphasize the importance of early play opportunities from 0-3. All children require play for health development, but the first years of life are foundational to later life development and interventions made in the first three years of life have the highest payoff in the long run. For young child whose development has been stunted due to malnutrition, parent training in socio-emotional stimulation is essential to counteracting the negative affects of poor diet.

3. Prioritize play as a basic right for children in crisis. For children in contexts of war, displacement, or emergency, play is essential to alleviate the negative affects of trauma. In situations of crisis, play provision must be top priority. Graphic/Icon



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The Case For Play

PLAYGROUND IDEAS