



A partnership to promote the VALUE OF PLAY throughout life

# Annotated Bibliography

Updated April 2017

American Academy of Ophthalmology. *More time outdoors may reduce kids' risk for nearsightedness*  
Retrieved 4/22/2012, 2012, from <http://www.aao.org/newsroom/release/20111024.cfm>

The American Academy of Ophthalmology reports a correlation between time spent outdoors and a reduced chance of myopia in children and adolescents. More research is required to determine if the reduction is due to factors such as increased use of distance vision, decreased use of near vision, natural ultra violet light exposure, or physical activity. Whatever the cause, this is just another excellent reason to get outside and Play!

Ashiabi, G. (2007). Play in the preschool classroom: Its socioemotional significance and the Teacher's role in play. *Early Childhood Education Journal*, 35(2), 199-207. doi:10.1007/s10643-007-0165-8  
Ashiabi describes the multifarious benefits of play in the preschool classroom and the role of preschool teachers in facilitating this play. At preschool age, children engage in what is known as sociodramatic play which involves two or more children with designated roles working toward a mutual outcome. An example of this type of play would be set in a doctor's office with one child acting as the nurse and one the doctor. Because this play is complex, it requires children to learn and demonstrate skills such as emotional expression, understanding, and regulation, important skills to future social success. Teachers are critical in the provision of these experiences by providing a space, allocating time, and organizing materials. Teachers can also be a part of the play directly as participants or indirectly as observers. The goal of the educator should be to scaffold and enhance the natural play scene. Ashiabi also spends some time discussing diversity issues and the role of preschool play.

\*Barros, R. M., Silver, E. J., & Stein, R. E. (2009). *School recess and group classroom behavior*.  
*Pediatrics*, 123(2), 431-436.

By using secondary longitudinal data provided by Early Childhood Longitudinal Study (ECLS-K), researchers explore whether children behave better in school when they receive recess. Children have lost 12 hours/week in free time, including a 25% decrease in play and a 50% decrease in unstructured outdoor activities, mostly due to time being allocated for academic activity rather than physical activity; the No Child Left Behind Act has reduced time for recess, creative arts, and physical education. Results of this data analysis state that children who live in a large/mid-sized city or town in the south in a public-school setting have the least amount of recess time. Additionally, children who come from disadvantaged backgrounds are especially affected by the lack of recess; they are not free to roam their neighborhoods or yards without being accompanied by an adult due to the neighborhood dangers they encounter.

\*Bilton, N. (2014). Steve Jobs Was a Low-Tech Parent. Retrieved February 29, 2017 from  
[https://www.nytimes.com/2014/09/11/fashion/steve-jobs-apple-was-a-low-tech-parent.html?\\_r=1](https://www.nytimes.com/2014/09/11/fashion/steve-jobs-apple-was-a-low-tech-parent.html?_r=1)

While some people may believe that the founding fathers of the tech industry would be surrounded by technology 24/7, Steve Jobs and other tech moguls limit the amount of technology their children can use in the household. Because these C.E.O.s know the dangers first hand, they are more inclined to strictly limit their children's screen time, commonly allowing only

30 minutes during the weekends, and no use during the week unless for homework purposes. This limitation is in hopes to avoid "addiction" by children under 10. Potential dangers from excessive screen time can include exposure to harmful content, bullying, and becoming addicted to their devices.

Bodrova, E., & Leong, D. J. (2003). The importance of being playful. *Educational Leadership*, 60(7), 50-53.

This article focus on early childhood imaginative play. Boldrova and Leong walk the reader through a brief evolution of play, before focusing on what they call "mature play." Some of the components they define as mature play include multiple roles (e.g. firefighter, dispatcher, fire truck driver), imaginary situations and clearly defined rules. Because of the complexity of the play, language and communication skills become important tools. This fact facilitates classroom literacy, according to the authors.

Bringolf-Isler, B., Grize, L., Maeder, U., Ruch, N., Sennhauser, F. H., Braun-Fahrlaender, C., & SCARPOL Team. (2010). Built environment, parents' perception, and children's vigorous outdoor play. *Preventive Medicine*, 50(5-6), 251-256. doi:10.1016/j.ypmed.2010.03.008

In a cross-sectional study of three communities in Switzerland, researchers sought to elucidate the effect of the objectively measured built environment and parental perception on children's vigorous outdoor play. They found a decrease in outdoor play by primary school children corresponded to an increase in parental concern about traffic safety. Other factors that decreased reported outdoor play were being female, adolescent (older child), from the French speaking part of the country, and a single child. The report presents many additional comparisons which can be found in the three tables. In sum, the authors found reason to believe parental perceptions and the built environment are both influential in the time children spend playing vigorously outdoors.

TED Partner Series (Producer), & Brown, S. (Director). (2008, March 2009). *Stuart brown says play is more than fun* | video on TED.com [Video/DVD] TED.com: TED.com. Retrieved from [http://www.ted.com/talks/lang/en/stuart\\_brown\\_says\\_play\\_is\\_more\\_than\\_fun\\_it\\_s\\_vital.html](http://www.ted.com/talks/lang/en/stuart_brown_says_play_is_more_than_fun_it_s_vital.html)

In this relatively brief talk, Stuart Brown, a play research pioneer, introduces the audience to types and benefits of play. He suggests that play can help two or more individuals overcome a "power differential" (minute 3) and enter into a "state of play." Brown outlines different types of play, such as body play, object play, social play, rough and tumble play, spectator play, and imaginative play (minutes 5-10) and explains how each contributes to the development of the whole person. This talk is several years old (filmed in 2008), but play continues to be underrepresented in academic research, though like Brown says, the movement is building. As a neotenous species, we are designed and adapted to play throughout life - that means adults too! (minute 13:45). He encourages the audience to consider their personal "play history" and to use this to set the course for their future (minutes 15, 17:30, and 22:00). This is a great talk to familiarize yourself with the foundations of play research and to meet one of the pioneers of the field.

\*Bublitz, M.G., & Rhodes, J. (2017). Activity in the classroom: Interventions to increase activity and help fight childhood obesity. *Journal of Childhood Obesity*, (2)3, 1-7. Approximately two-thirds of schools fail to meet minimum physical education standards. Teachers believe that their students are only moving about 18 minutes per day and about 87 minutes per week, due to the lack of the school's ability to sacrifice the costs and time needed for physical activity. This study focuses on the impact that exergames have in the classroom environment. An "exergame" is defined as a physically active video game, such as games on the Wii system (Tennis, Boxing, and Dance Dance Revolution). An exergame which is built on an educational platform is used, combining body weight exercises with math skill practice and used either as an

intended classroom activity or a break between activities. A longitudinal repeated measures design was used to compare the intervention of combining math skills with physical activity, but also to determine the effects of classroom behavior over time. Overall, increases in physical activity were apparent through the intervention group, and the exergame did not negatively impact academic performance. Additionally, directional support was found for the idea that increasing activity in the classroom may decrease negative behavior in the classroom.

Bundy, A. C., Lockett, T., Tranter, P. J., Naughton, G. A., Wyver, S. R., Ragen, J., & Spies, G. (2009). The risk is that there is 'no risk': A simple, innovative intervention to increase children's activity levels. *International Journal of Early Years Education*, 17(1), 33-45.

In this study, the authors explored the effects of adding 'loose parts' play material on children's activity level and teacher's perceived risk. This study was conducted at a Sydney school and participants were 12 children in kindergarten and year 1 and nine female teachers. Researchers provided access to 'loose parts' on the school playground, examples included cardboard boxes, tires, plastic-wrapped haybales, and more. Researchers suggested this could have important implications with weight-management. Significant quantitative gains were achieved in activity level as measured by accelerometers. Furthermore, teachers described play as more active, creative and social. However, in interviews teachers also discussed a perceived increase in risk - despite no increase in injuries. Teachers discussed how this perceived risk related to the pressures of litigation and "duty of care." The research team concludes by offering loose parts as an appropriate solution to increase activity and types of play on playgrounds.

Burdette, H. L., & Whitaker, R. C. (2005). A national study of neighborhood safety, outdoor play, television viewing, and obesity in preschool children. *Pediatrics*, 116(3), 657-662.

Burdette and Whitaker tested the hypothesis that preschoolers living in neighborhoods perceived by their mothers to be unsafe will have a higher occurrence of obesity, spend less time playing outdoors, and more time watching TV. The only significant correlation found was between TV viewing time and perception of neighborhood safety. The authors suggested numerous confounding factors and the need for additional research to clarify results.

Burdette, H., & Whitaker, R. (2005). Resurrecting free play in young children - looking beyond fitness and fatness to attention, affiliation, and affect. *Archives of Pediatrics & Adolescent Medicine*, 159(1), 46-50. doi:10.1001/archpedi.159.1.46

Play has the ability to increase three domains in a child's well-being: attention (cognitive), affiliation (social), and affect (emotional). Active outdoor play also serves to address two domains of physical health: fitness and fatness. As the authors suggest, when talking about play, a focus on fun may be more enticing than the notion of "physical activity" or "exercise." The authors also suggest several avenues for spreading the message, ones already heavily utilized by caregivers of children such as the Special Supplemental Nutrition Program for Women, Infants, and Children.

Chick, G. (2009). The anthropology of learning in childhood. In D. F. Lancy, J. C. Bock & S. Gaskins (Eds.), (pp. 119) Altamira Pr.

Chapter 6 examines work, play, and learning in the life of a child with empirical and qualitative data from numerous anthropology experiments and studies. The author discusses differences in play by gender, age, and society, citing examples from around the world. The research concludes that children, no matter how productive, are still a sink for resources for parents and grandparents. Time is allocated efficiently between playtime and work time so as to best maximize short- and long-term benefits while minimizing cost. There are apparent differences in the type and quantity of play for girls and boys. Evolutionary/economic, and psychosocial research perspectives appear to complement the results of the other - adding validity to both.

*Children's right to play: An examination of the importance of play in the lives of children worldwide.* (2009). International Play Association.

(Review is for report published in October 2009, link is to report from December 2010) This article discusses play as it relates to the UN Conventions on the Rights of the Child (CRC) and in particular Article 31. The article highlights the inclusion of play as an entity separate from rest, leisure, and recreational activities, then discusses some of the basic principles and important outcomes of play. The latter half of the article explains how the three broad categories of the CRC articles - protection, participation, and provision - relate to play.

Chriqui, J., Schermbeck, R., Slater, S., Schneider, L., Barker, D., & Chaloupka, F. (2012). *Research brief: Joint use agreements, creating opportunities for physical activity* (Research brief). Web: Bridging the Gap.

This Bridging the Gap research brief examines the characteristics of joint use agreements. A joint use agreement is "a formal agreement between two separate government entities - often a school and a city or county - setting forth the terms and conditions for shared use of public property or facilities." This relates to play and physical health through the provision of recreation spaces, particularly for populations with limited access to such facilities. Authors found high proportions of agreements to be vague about who may use facilities, when they may use them, which facilities can be used, and liability and repair responsibilities. The Robert Wood Johnson Foundation sponsors the Bridging the Gap research program and uses the program to measure change over time and share findings that will facilitate solutions to the childhood obesity epidemic and prevent young people from smoking.

Christie, J. F., & Johnsen, E. (1985). Questioning the results of play training research. *Educational Psychologist, 20*(1), 7-11.

Play training, an adult intervention to improve the quality of children's play, became prevalent in the 1970s following a research study showing increased cognitive performance. The authors summarize the subsequent research studies, while suggesting new areas for inquiry and further research.

Crawford, C., & Raven, K. (2002). Play preparation for children with special needs. *Pediatric Nursing, 14*(8), 27-29.

Nurses Catherine Crawford and Katherine Raven discuss the importance of using play preparation for surgeries, particularly for children with special needs. Their case study focuses on gastroenterology, but conceptually can be generalized to other treatments. Play preparation focuses on creating a more familiar and less threatening environment for children undergoing treatment. The authors emphasize the need to focus on the child's developmental age more so than their chronological age. This also means being sensitive to other disabilities or complicating circumstances.

de Oliveira, C., Ruiz-Miranda, C., Kleiman, D., & Beck, B. (2003). Play behavior in juvenile golden lion tamarins (*Callitrichidae*: Primates): Organization in relation to costs. *Ethology, 109*(7), 593-612. doi:10.1046/j.1439-0310.2003.00901.x

A comparison study of the costs and benefits of play behavior in golden lion tamarins. Benefits suggested were: the development of social, cognitive, and motor skills and the costs were energy expenditure, and the risks of injury and predation. The study was conducted through observations of four groups of wild lion tamarins and five groups of reintroduced lion tamarins. The researchers found that play activity accounted for 3.8% of the activity budget, occurred during the hottest part of the day, age of partner was not significant, and play occasionally was interspecific. Adults of both sexes increased their vigilance while juveniles were playing. Play

tended to be concentrated in the group center on less risky substrates. In conclusion, play was not seen as a major cost because it occupied so little of the activity budget.

Dehghan, M., Akhtar-Danesh, N., & Merchant, A. T. (2005). Childhood obesity, prevalence and prevention. *Nutrition Journal*, 4(1), 24.

Childhood obesity has been recognized as a growing health epidemic. Dehghan et al. review literature related to the causes and preventative measures taken to combat this issue. Despite greater availability of food, particularly high calorie, nutrient poor options, studies have not conclusively shown an increase in energy intake or fat intake. More support comes from research on decreased physical activity. The authors suggest a four-pronged approach to prevention with an emphasis on: the built environment, physical activity, TV watching, and food sector changes. The authors relate the importance of early prevention over treatment as adults. In the paragraph prior to the conclusion, the authors mention "free play" as a method to decrease sedentary behavior.

Doster, J. A., Mielke, R. K., Riley, C. A., Toledo, J. R., Goven, A. J., & Moorefield, R. (2006). Play and health among a group of adult business executives. *Social Behavior and Personality: An International Journal*, 34(9), 1071-1080.

This study used self-reports to measure if there was a correlation between an individual's play experiences and their other self-schemas. Researchers used the Lifestyle Assessment Questionnaire, a version of Kelly's repertory grid, and a health questionnaire to collect information on the adult study participants. Both physical and psychological health benefits were measure in individuals who demonstrated play in their personal identity. This study provides groundwork for future investigations interested in the link between adult playfulness and health.

*Centennial lecture series: Mickey Fearn, national park service deputy director.* Fearn, M. (2011, November 4, 2011).[Video/DVD] Texas A&M College of Agriculture and Life Sciences: Texas A&M. Although this talk was given to present and future park and recreation officials, the messages presented by Mickey Fearn, Deputy Director of Communications and Community Assistance, apply more broadly. In his Centennial Lecture at Texas A&M, he discusses the importance of providing "woods" or places where children and youth can engage in improvisational and spontaneous play (minutes 16 and 18). Fearn also touches on the distinction between organized sport and pick-up games and the long term health effects, such as obesity, of participation or lack of participation in those activities (minute 25). Furthermore, he highlights the need for recreation officials to help individuals to refine their "gifts" and to find their "cultural tribe" (minute 37). This means that parks and recreation - and play! - are serious business, even if we cannot always place a dollar value on them.

Fernie, D. *The nature of children's play* Retrieved 4/23/2012, 2012, from

<http://www.kidsource.com/kidsource/content2/nature.of.childs.play.html>

A short descriptive piece on types of play and the progression of play through early childhood. This resource provides citations to further work on childhood play. The conclusion provides thoughtful guidelines for the adult role in child's play.

Fjørtoft, I. (2001). The natural environment as a playground for children: The impact of outdoor play activities in pre-primary school children. *Early Childhood Education Journal*, 29(2), 111-117.

As an arena for gross motor development, the "affordances" of a natural environment to kindergarten students are numerous. The authors describe environmental affordances as the functional meaning of an object, for instance a tree with accessible branches affords climbing. In a comparison study of a kindergarten with access to free play in a forest and two kindergartens with access to traditional outdoor play environments, researchers found greater improvement in

gross motor function on the forest group over the study period. Children using the forest named places special to them and utilized different areas in different seasons. This study demonstrates the important relationship between the play landscape and its effect on motor development.

Frost, J. L. *Back to nature and the emerging child saving movement: Restoring children's outdoor play*. (No. Volume one: Number 3). Children and Nature Network.

In the third piece of the Children and Nature Network Leadership Writing Series, Joe Frost provides a context for the need for a new "child saving movement." He highlights the deleterious effects of the disconnect from outdoor play and nature as well as the influence of socioeconomic status on the disconnect. The latter half of the article describes the need for a new child saving movement and actions already underway by groups such as Children and Nature Network and institutions such as University of Texas Play and Play Environments Research Projects. These groups are working to reconnect children with natural landscapes as areas for play. Frost outlines further opportunities to address this issue such as the creation of community gardens and walkable neighborhoods. This is an issue that affects all of us and will only be healed through a collaborative effort.

Frost, J. L. (1984). Toward an integrated theory of play.

Joe Frost addresses the complex development of a theory of play. He walks the reader through early theories of play, such as the "surplus energy theory" where "when the child has more energy than needed for work, play occurs." Then he discusses more recent theories such as describing play as a developmental progression. Each theory has strengths and weaknesses which are in part generated by differences in the fields from which the theory came, for example sociology versus anthropology. Frost then moves on to the notion of building an integrated theory of play which will involve describing the characteristics of play: stages, types, motives, processes, functions, and content. He gives specific examples in each of these areas and in sum, makes a convincing case for the need for more work (or play!) on an integrated theory.

Frost, J. L. (2011). Playwork in American and European playgrounds. In *Play and child development* (Fourth edition ed.) Prentice Hall PTR. Retrieved from <http://books.google.com/books?id=OLE2YgEACAAJ>

In chapter 13 of the fourth edition of *Play and Child Development*, Frost discusses the role of trained adult play leaders in children's play. He starts with a history of play leadership in America, including a comparison of different play settings such as public parks and preschools. Frost then transitions into a discussion of theory of adult intervention and the research that supports such activity. The second half of the chapter focuses on applied aspects of adult intervention with examples from around the globe. In his conclusion, Frost thoroughly outlines eight critical skills and roles of an adult play leader. The eight serves as a powerful reminder of the lasting effects of transcendental play, deep play, and flow.

Ghosh, J. (2007). Play with a purpose. *Independent School*, 67(1), 12-12. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=27054307&site=ehost-live>  
Jayasri Ghosh speaks to a child's need to play as a foundation for a happier, healthier, and longer life. He describes the creative and social implications for play while also highlighting the connection to success in the classroom. Humans build a context for life's lessons through the activities they engage in during leisure time.

\*Gillet, T. *Simplifying Nature May Protect Against Mental Health Issues*. Parenting by Nature, Retrieved 2/9, 2017, from <http://raisedgood.com/extraordinary-things-happen-when-we-simplify-childhood/>

The author explains the detriments to having children being too busy or overscheduled, and the importance for parents to allow for them to have opportunities to fully engage in their childhood. She states that kids are growing up too quickly and they are put in adult roles at a young age. Payne's four pillars of excess are discussed, examining that too many choices, too much stuff, too much information, too much speed affect a child's ability to enjoy their childhood years. Parents can attempt to protect this childhood by saying "no" to occasional activity participation, which limits their opportunities. Ultimately, childhood is intended to offer the child's mind a time to grow and develop into happy, healthy adults, and parents are heavily responsible for being sure this can occur.

Ginsburg, K. R. (2007). The importance of play in promoting healthy child development and maintaining strong parent-child bonds. *AAP Policy*, 119(1), 182.

This brief report emphasizes the importance of play to the cognitive, physical, social, and emotional well-being of children and youth. It provides an excellent summary of the benefits and barriers to play ranging from the college admissions process to Federal legislation. The language of the report is accessible to a non-technical audience, and parents would likely benefit from reading it. Because it was written by the American Academy of Pediatrics, the report necessarily addresses the role of pediatricians as advocates for play. The suggestions given to pediatricians would also make excellent talking points for parents to raise at subsequent doctor visits.

Gray, P. (2009). *The value of play IV: Play is nature's way of teaching us new skills*. Retrieved February/13, 2012, from <http://www.psychologytoday.com/print/2824>

Peter Gray, a research professor of psychology, writes on the work Karl Groos, a German philosopher and naturalist in the late 1800s and early 1900s. In *The Play of Animals* (1898), Groos examined how young animals learn through play and subdivided the animal kingdom by amount and type of play a species engaged in. In *The Play of Man* (1901), Groos extends his play theory to children, making insights about the types of play and the influence of culture on play.

\*Gray, P. (2013). *Free to learn: Why unleashing the instinct to play will make our children happier, more self-reliant, and better students for life*. New York, NY: Basic Books

In Peter Gray's most recent publication, he describes what he perceives as the biggest setback for children participating in play, including barriers such as parental fears, the busy and overscheduled child, the increase of behavioral disorders in our children, and the changing atmosphere of our communities. Gray explains how those living in the hunter-gatherer societies have a different view on work/play responsibilities, and how these children perceive their unstructured play time in comparison to Westernized societies. Gray advocates for restructuring of our current education system, and offers examples from his son's school, Sudbury Valley, as an effective model for encouraging unstructured play and free time in the educational system.

\*Gray, P. (2016). Instead of "Job Creation," How About Less Work? Retrieved April 23, 2017, from <https://www.psychologytoday.com/blog/freedom-learn/201611/instead-job-creation-how-about-less-work>

In this article, Gray suggests that reducing the amount of useless work that is taking place and replacing it with aspects of play will benefit those in the working world. Jobs that are currently in existence can be questioned as to how useful they are for those working and benefitting from them. People who are working these "useless" jobs are cynical, seeing that their positions offer nothing to benefit society. Gray defines work as any activity which is unpleasant but we feel we must do, whether or not it will benefit us financially. Researchers who have studied the modern hunter-gatherer societies have found that the average adult hunter-gatherer works about 20 hours a week hunting and gathering and an additional few more hours on sustenance activities such as meal preparation and tool making; the rest of their time is spent in play activity, which is

extremely different than modern Westernized society. Children who are below the age requirements for having jobs are not lazy; they are active and motivated by curiosity. Additionally, the author also states that nearly all great scientists, poets, inventors, and artists viewed their work and discoveries through a play lens.

- \*Hamilton, J. (2014) Scientists Say Child's Play Helps Build a Better Brain. Retrieved February 18, 2017 from <http://www.npr.org/sections/ed/2014/08/06/336361277/scientists-say-childs-play-helps-build-a-better-brain>

This article discusses the importance of brain development and how experiences outside of the classroom can impact this development regarding Pellis's work on the effects of play. He explains that changes in the prefrontal cortex help wire a child's prefrontal cortex, the brain's executive control center. The purpose of play is to build pro-social brains, meaning the ability to know how to interact with others in a positive way. Play also allows for people to be more adept socially, assisting in the child's developmental process through learned behavior.

- \*Hanscom, A.J. (2016) *Balanced and barefoot: how unrestricted play makes for strong, confident, and capable children*. Oakland, CA: New Harbinger Publications

This book by Angela Hanscom writes as a prescriptive model for parents exploring the reasons why children of today's society are weaker, less healthy, and riddled with behavioral disorders. She begins by explaining the importance of fine tuning skills such as core balance, fine motor skills, the senses, and developmental skills for children, explaining that the experience of unstructured play, typically occurring outside, will help in the development of these necessary competences for children to grow into effective adults. Hanscom dives into concepts regarding the therapeutic value of outdoor play, along with the importance for parents to avoid taking "necessary" safety measures for their children during unstructured play time. She also discusses the controversy of playgrounds and their ability to facilitate imaginative learning and creative play, and the current trends in the decline of school recess. The author concludes her book with suggestions for parents and facilitators on how to encourage unstructured outdoor play.

- \*Heffernan, V. (2016). Steven Johnson on How Play Shaped the World. Retrieved April 23, 2017, from <https://www.nytimes.com/2016/11/22/books/review/steven-johnson-wonderland.html?hp&action=click&pgtype=Homepage&clickSource=wide-thumb&module=mini-moth&region=top-stories-below&WT.nav=top-stories-below&r=0>

In this article, a review of Johnson's new book, *Wonderland: How play shaped the modern world*, is offered through the New York Times. Johnson's book offers his unique perspective of a history of recreation. Novelties are both connected to ancient forces and to today's society; examples offered include computers, synthesizers, and the internet. Heffernan states that if an activity is not labeled as necessary for human sustenance, then it can be considered play.

- TEDxBG & Keil, S. (June 2011). *Steve Keil: A manifesto for play, for Bulgaria and beyond* | video on TED.com [Video/DVD] TED.com: TEDxBG. Retrieved from [http://www.ted.com/talks/lang/en/steve\\_keil\\_a\\_manifesto\\_for\\_play\\_for\\_bulgaria\\_and\\_beyond.html](http://www.ted.com/talks/lang/en/steve_keil_a_manifesto_for_play_for_bulgaria_and_beyond.html)

If you just watched Stuart Brown's talk "Play is more than fun," parts of this talk will seem very familiar, but the speaker Steve Keil gives the story a personal twist. What makes this talk exciting is the speaker's enthusiasm and passion for the topic. Keil starts with the problem: Bulgaria is last. Last in innovation, last in health care, last in reading, math, and science, and he proposes that Bulgarians are last because they have devalued play (minute 3). He discusses the three areas social, education, and business where play has been devalued (minute 3-7). He makes specific references to the lack of innovation, personal freedom, and creativity. Then he



dives into the evolution, necessity, and benefit of play. Keil supports his assertions with published research (minutes 8-9). Then he explains that the opposite of play is not work, but depression and what adults consider to be "work" must have elements of play. He transformed the company Sciant following play principles and in three years, the company went from 0 happy customers to 100% happy customers, from marginal profits to above average profits, from unhappy stakeholders to happy stakeholders. The company even won best employer for small business in every year the company entered (minutes 13-15). Keil leaves the audience with a challenge: to fan the flames of the "players' uprising."

\*Jarrett, O. S. (2002). *Recess in Elementary School: What Does the Research Say?* ERIC Digest. Retrieved March 30, 2017, from [www.eric.ed.gov](http://www.eric.ed.gov).

In this study, recent research regarding the implications of recess and social development, child health, and learning are discussed. 90% of school districts report having at least one recess period during the day, although many schools have abolished recess since 1989. Why is this happening? (1) Recess is thought by some to disrupt work patterns; the need for more instructional time, due to the need for more accountability. (2) Implications of recess regarding learning state that attention requires a period of novelty; downtime is needed to recycle chemicals for the formation of long-term memory. (3) When discussing recess and social development, recess provides an "open setting," which allows children to join or leave the play setting. Children must also learn how to resolve conflicts, which have resulted in low level of aggression on the playground. (4) Recess regarding health explain that obesity has tripled since 1970, including problems such as high blood pressure and high cholesterol. Research has shown that children engage in activity 59% of the time during recess and vigorous physical activity 21% of the time-- which is reported higher than during a PE class (15%).

\*Jarrett, O. S., Maxwell, D. M., Dickerson, C., Hoge, P., Davies, G., & Yetley, A. (1998). *Impact of recess on classroom behavior: group effects and individual differences*. The Journal of educational research, 92(2), 121-126.

In this study, researchers examine the effect of a recess break on the work/task behavior and fidgety/listless behavior of 4th grade children. Children who participated in this study did not typically have recess; they were given 12-20 minute periods once a week. Researchers compared recess vs. non-recess days for these children. It was found that all 5 of the participating children with Attention Deficit Disorder benefited from recess. Findings that children in both classes were less on task and more fidgety when they had not had a break suggests that children think and work less efficiently when engaged in uninterrupted instructional time. Additionally, much of the time during the recess period was spent by children socializing in small groups; this change of pace or novelty of an activity may be just as important as physical activity in helping children refocus in the classroom.

Laucius, J. (2012). All work and no play... is not good for the developing brain, says psychologist Dr. Gordon Neufeld. *The Montreal Gazette*.

From Montreal, Dr. Gordon Neufeld, developmental psychologist, weighs in on the issue of all-day four-year-old kindergarten - a hot topic in Ontario. He is opposed to increasing performance standards on children who he believes should be focused on play. He asserts that play helps children build problem solving networks through joyful pursuits. This type of learning encourages children to become life-long learners because they're having fun!

*The loss of children's play: A public health issue*. (2009). (No. Policy Brief 1). Alliance for Childhood. This Policy Brief introduces the lack of free play as a contributor to the growing children's health challenge. The article makes a strong push to reintroduce play for its multi-faceted benefits while supporting the call with up-to-date research findings.

- Lucich, M. (2004). *The value of play*. Retrieved 2/7, 2012, from [http://www.education.com/reference/article/Ref\\_Value\\_Play/](http://www.education.com/reference/article/Ref_Value_Play/)  
A short and sweet summary of the Value of Play by Mardi Lucich, MA. For the bullet points on types of play, stages of complexity of play, skill acquisition during play, and how to encourage play, this is an excellent reference.
- Marantz, R. (2008). Taking play seriously. *The New York Times*,  
In this lengthy piece, Robin Marantz Henig presents numerous scientific studies on play and animal behavior/development as well as more subjective evaluations of the purpose of play. She begins by making the case for play through a presentation by Stuart Brown and an evaluation of the play dialogue in America. The article is weighted strongly by empirical evidence related to the perceived evolutionary advantages of play. The last quarter of her discussion acknowledges the often understated, but likewise truthful "double-edged nature of pleasure" - the teasing, bullying, and exclusion, that also occur during play. There are no clear "answers" but the ecstatic face of a child at play does seem to indicate a value of play, even if it cannot be measured quantitatively.
- Mastrangelo, S. (2009). Harnessing the power of play opportunities for children with autism spectrum disorders. *Teaching Exceptional Children*, 42(1), 34-43.  
Play for children with autism spectrum disorders (ASD) offers the opportunity for gains in thinking, communication, and imitation skills when conducted with sensitivity to the needs of the child. Because of the intellectual gains that can be made, the author suggests play be incorporated into the individualized education program of every ASD child. Both adult and peer play facilitators have an active role in creating positive, learning play experiences. These skills can be taught to facilitators. Mastrangelo emphasizes that play is an important component of every child's daily education and must be treated as such.
- McLean, D. D., & Hurd, A. (2011). *Kraus' recreation and leisure in modern society* Jones & Bartlett Publishers.  
On page 11, the U.S. Play Coalition "Call for Action" is quoted as the opening paragraph for Chapter 2. The Coalition is mentioned again on page 20 as an organization providing information and resources on the value of play.
- Mead, R. (2010). State of play. *New Yorker*, 86(19), 32-37. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=51930072&site=ehost-live>  
The New Yorker addresses the "State of Play" by walking the reader through an early history of playgrounds in the Big Apple toward the modern need for play workers. Mead discusses at length the designs of modern playgrounds with an emphasis on the movement toward loose parts play. She provides the reader an interesting compliment of big name playground architects with the basic psychology of child's play.
- Miller, E., & Almon, J. (2009). *Summary and recommendations of crisis in the kindergarten why children need to play in school*. (No. 978-0-9823751-0-5). College Park, Maryland: Alliance for Childhood. doi:[http://timeoutfromtesting.org/kindergarten\\_8pagesummary.pdf](http://timeoutfromtesting.org/kindergarten_8pagesummary.pdf)  
This report provides a summary of the state of play in kindergarten. It touches on the importance of play as a time for building social, emotional, and intellectual competence. There is a particular emphasis on the future dependence of our economy on individuals with creative and imaginative skills. The report cites examples of successful kindergartens from foreign countries and compares them to the changing face of kindergarten in the United States. The report concludes with a lengthy list of actionable items, an excellent resource for individuals looking to start a movement in their area.

Mitchell, R., & Popham, F. (2008). Effect of exposure to natural environment on health inequalities: An observational population study. *Lancet*, 372(9650), 1655-1660.

Mitchell and Popham examine the role of green space as a mitigating mortality factor across socioeconomic positions. They find that there is a significant correlation between income deprivation and mortality across the groups of exposure to green space for mortality from all causes and circulatory disease. The authors had access to large databases, adding weight to their findings; however, the data could not be corrected for actual access to green space, changes in location over time, and potential other confounding factors. Still, the results are compelling.

National PTA. (2010). *Rethinking children's play - FamilyEducation.com* Retrieved 4/21/2012, 2012, from <http://fun.familyeducation.com/outdoor-games/play/35262.html>

The National Parent Teacher Association (PTA) wrote this article in 2010. The content reflects the importance of play as well as the changes seen in manufactured toys. The authors provide a substantial list of suggestions for parents to assist in promoting creative play for their child.

Palagi, E., Cordoni, G., & Tarli, S. (2004). Immediate and delayed benefits of play behaviour: New evidence from chimpanzees (*pan troglodytes*). *Ethology*, 110(12), 949-962. doi:10.1111/j.1439-0310.2004.01035.x

Researchers documented the instances of play behavior in captive adult, juvenile, and infant chimpanzees (*Pan troglodytes*) during and around feeding times. They tested whether an increase in play behavior was associated with the pre-feeding time period, which would suggest play is a mechanism for stress regulation. Observational results indicated that peak frequency of play time between adult and unrelated immature subjects did occur prior to feeding which also coincides with peak frequency of adult grooming - a known mechanism of maintaining social stability. This finding suggests that both grooming and social play can serve as stress reducing behaviors.

Palagi, E., Paoli, T., & Tarli, S. B. (2006). Short-term benefits of play behavior and conflict prevention in pan paniscus. *International Journal of Primatology*, 27(5), 1257-1270. doi:10.1007/s10764-006-9071-y

Researchers documented instances of play behavior in captive adult, juvenile, and infant bonobos (*Pan paniscus*) during and around feeding times. They tested the hypothesis that play can have short-term benefits in terms of decreasing conflict during feeding. Their results indicated an increase in adult-adult and adult-immature play frequencies prior to feeding, suggesting the use of play as a mechanism to reduce social stress. These findings suggest play can be used as a method of reducing tension and coping with competition.

\*Patte, M. (N.D.) The Decline of Unstructured Play. Retrieved February 29, 2017, from [http://www.thegeniusofplay.org/tgop/ea/2015\\_articles/The\\_Decline\\_of\\_Unstructured\\_Play.aspx#.WP0mKI61vox](http://www.thegeniusofplay.org/tgop/ea/2015_articles/The_Decline_of_Unstructured_Play.aspx#.WP0mKI61vox)

This article examines why childhood play is in decline, stating that heavy schedules of structured activities reduce the amount of time dedicated to unstructured play, which has serious consequences for children. Chudacoff identifies three societal changes that affect children's unstructured play: place, things, and time. Additionally, common barriers limiting unstructured play are noted as the extended school day, an overemphasis on academic achievement, and parental fear for child safety. Some reasons children's play is in decline could be due to safety concerns, eroding social capital, increased time spent in school, the fact that childhood is a time for resume building, and the overemphasis on structured activities. Research states that children should experience twice as much unstructured play time than structured play time, which contributes to child development through fostering social competence, respect for rules, self-

discipline, aggression control, problem solving skills, leadership development, conflict resolution, and learning to play by the rules.

Peterson, J. A. (2002). Eliminate playgrounds? You must be nuts! *Parks and Recreation Magazine*, 92. Eliminating playgrounds is one, but perhaps not the best solution, to playground injuries. This brief article encourages readers to become familiar with and potentially certified to recognize common playground hazards. Peterson distinguishes between "hazards" which are unexpected dangers and "risks" which are voluntary situations humans elect to participate in.

Pica, R. *The value of play*. Retrieved 2/24, 2010, from

<http://www.movingandlearning.com/Resources/Articles13.htm>

Rae Pica opens her article by citing the US Constitution, reminding all readers of their given right to pursue happiness. She then examines the reduction of time allocated for child-driven play, while citing published literature and field leaders. She ends the short article by encouraging readers to recall happy childhood memories and urging them to provide these for their own kids.

*Playfulness: A vital ingredient of social and emotional health*. Life is good Playmakers.

In this report, researchers aimed to connect playfulness to three key markers of social and emotional health: social competence, emotion regulation, and resilience. The researchers define playfulness as "the expression of a child's natural drive to freely and joyfully explore, engage, and connect with the surrounding world." The authors propose four main elements to playfulness: active engagement, internal control, social connection, and joyfulness. A study group of 229 preschool children were rated by their teachers on a set of social and emotional measures. The strongest correlations were between emotion regulation and active engagement ( $r^2=0.48$ ), ego-resiliency and internal control ( $r^2=0.44$ ), and social competence and social connection ( $r^2=0.49$ ). All together "playfulness" is positively correlated with each emotion regulation, social competence, and ego-resiliency, and the sum of playfulness elements is most predictive of social and emotional health. These findings serve to guide the Life is good Playmakers programming for childcare providers.

*Redefining playfulness: How it can revolutionize the health, education and well-being of children*. Life is good Playmakers.

The authors explain the play deficit and its causes as well as its outcomes: "PDD (Playfulness Deficiency Disorder)." "Playfulness" is defined as "the expression of our natural drive to freely and joyfully explore, engage, and connect with the surrounding world." The authors explain their view that any activity can be play if done with a playful attitude. They also name and describe four components of play: active engagement, internal control, joyfulness, and social connection and the sum of these leads to a transformative experience. The report closes with a call for change and an explanation of efforts already underway by the Life is good Playmakers, authors of the report.

\*Roth, J., Brooks-Gunn, J., Linver, M. R., & Hofferth, S. (2003). *What happens during the school day? Time diaries from a national sample of elementary school teachers*. *Teachers College Record*, 105(3), 317-343.

The Panel Study of Income Dynamics, a longitudinal study, is used as the representative sample in this study. The Child Development Supplement (CDS) was added in 1997 to the PSID to further understand how economic and demographic behavior affect family, school, and neighborhood experiences for the child and family well-being. Child's time in school is broken up into four different categories: academic (Math, English, Science, Social Studies), enrichment (PE, art, music, religion), maintenance (announcements, meal time, bathroom breaks, fire drills), and recess (recess and outdoor play time). Overall, students received only 1 recess per day, equaling

less than 30 minutes per day. approximately 21% of teachers reported that their students received no recess time during the day. Noticeable differences in allocated time to recess were evident between family and demographic characteristics. Teachers of African American students reported more time devoted to maintenance activities, leaving less time for recess; teachers of White students scheduled over 10 minutes more for recess during the school day than teachers of non-White students. Younger students received more recess time than older students. Special needs students received on average 5 minutes more of recess than students with no special needs. Teachers with more advantaged students received more recess as well: students living above the poverty line received over 11 minutes more recess than did students living at or below the poverty line. Minority students who were reported as spending less time in school were still spending the same amount of time on academics as compared to White students; to make up for the lost time, enrichment and recess activities were reduced. Implications for this lack of recess in differing demographic backgrounds could be because classes and schools with more minority children are required to focus on higher standards, which has forced out time for recess. The schoolyard could pose more threats than benefits for children. Lastly, school policies and/or school finances may cause teachers of less advantaged children to forgo enrichment and recess activities.

Sanderson, R. C. *Life is good playmakers on the gulf coast.*

This case study reports encouraging results from the use of "Powerplay" a play based intervention to combat the epidemic of chronic trauma on children. Powerplay is a program organized by the Life is good Kids Foundation through Life is good Playmakers. This study, was conducted in the gulf coast region following Hurricane Katrina. Students receiving the Powerplay 15 week curriculum were compared to students not receiving the curriculum. The study was conducted by the Early Childhood Institute at Mississippi State University. They found significant improvement in general adaptation (social-emotional health) in the children participating in the Powerplay program. Both groups demonstrated improvement in all social-emotional scales (for instance depressive verses joyful and anxious verses secure) but children in the Powerplay group improved significantly more. These preliminary findings suggest Life is good Playmakers are able to provide teachers with tools to help heal their preschool children.

\*Sandseter, E.B.J., & Kennair, L.E.O. (2011). *Children's risky play from an evolutionary perspective: The anti-phobic effects of thrilling experiences.* *Evolutionary Psychology.* 9(2), 257-284.

Children's risky play is reviewed from an evolutionary perspective. Risk is defined as thrilling and exciting; fear of injury can be learned for risky play participation, along with eliminating the connotation that risky play is negative. Six categories of risky play are introduced with their possible functions and anti-phobic effect: great heights, high speed, dangerous tools, dangerous elements, rough-and tumble, and disappearing/getting lost. Additionally, risky play can reduce anxiety if there is motivation to seek out a stimulus, and by learning to master the stimulus rather than succumbing to the adverse emotion.

\*Schwartz, K. (2013). How free play can define kid's success. Retrieved February 9, 2017, from <https://ww2.kqed.org/mindshift/2013/02/15/how-free-play-can-define-kids-success/>

This article explains that kids can be successful by participating in free play, as defined by the 7 C's of Resilience. When kids are allowed free time in play, they learn to work in groups, negotiate, share, self-advocate, and make decisions. Too much pressure on a child's academics can have negative long-term effects. The best skill a parent can foster in children is resilience, learned through creative play. The author introduces the 7 C's of "resilience" (this is Lerner's 5C's of positive youth development plus two): Competence, Confidence, Connection, Connection, Character, Contribution, Control.

Scott, E. (2007). *Play time for healthy child development: Value unstructured play time for stress management and healthy child development*. Retrieved 2/24, 2010, from <http://stress.about.com/od/parentingskills/a/play.htm>

This article starts with a short list of ways by which free time is being slowly eaten away from childhood days. It then gives a brief summary of the need and benefits of play, citing an American Academy of Pediatrics report. The article concludes with a thoughtful list of action items for parents, reminding them to enjoy their child's youth and avoid the trap of 'super-children.'

*The state of play: Gallup survey of principals on school recess* (2010). Robert Wood Johnson Foundation.

In 2010, the Robert Wood Johnson Foundation in collaboration with the National Association of Elementary School Principals and Playworks conducted a Gallup poll on the subject of recess. In summary, they found strong support for the belief that recess is beneficial, but that school administrators face more behavior issues during recess and that recess time is often cut to add more academic time to meet standards. The report suggests a reevaluation of recess at the policymaker level, and to enhance recess through staff training.

The Alliance for Childhood. (2004). Time for play, every day. *Encounter*, 17(2), 50-52. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=13936339&site=ehost-live>

A quick read outlining benefits of play, ways to inspire play, and how to talk to other adults about the importance of play.

Toy Manufacturers of America. (2010). *Guide to toys and play* Retrieved 4/23/2012, 2012, from [http://www.kidsource.com/kidsource/content/toys\\_ply.html](http://www.kidsource.com/kidsource/content/toys_ply.html)

A guide to toys from the toy makers. The article opens with an explanation of the importance of play, the role of parents, and the safety guidelines for toys. In the "Safety Checklist," the authors outline specific cautions parents should take when selecting toys. This is followed by a discussion on labeling of toys -how it's done and how to read labels. The article concludes with a age-group specific needs and provides appropriate suggestions.

Toys, O. *The value of play*. Retrieved February/13, 2012, from [http://www.otherlandtoys.co.uk/information.php?info\\_id=12](http://www.otherlandtoys.co.uk/information.php?info_id=12)

This brief piece on the value of play touches on many of the major benefits - learning planning and problem solving skills, developing language and communication skills, using imagination and creativity - and also relates play to appropriate toys. Otherland is a UK company specializing in Toys, Gadgets, and Licensed Collectables for all ages.

\*Tremblay, M. S., Gray, C., Babcock, S., Barnes, J., Bradstreet, C. C., Carr, D., & Herrington, S. (2015). *Position statement on active outdoor play*. *International journal of environmental research and public health*, 12(6), 6475-6505.

This article offers a discussion of the process to create the statement of outdoor play (not included in this article). Position statement evidence discussed begins with stating that (1) when children are outside, they move more, sit less, and play longer-- this has improved health benefits. (2) Outdoor play is safe. Parents tend to overemphasize the dangers of outdoor play for children based on their own fears. (3) Major trauma due to outdoor play is uncommon; riding in motor vehicles is more dangerous for children than being hit by a vehicle while participating in outdoor play. (4) When children spend more time in front of a screen, they are more likely to be exposed to cyber-predators, violence, and bad eating habits. (5) Air quality inside can sometimes be worse than outside; exposure to more allergens has been proven in indoor environments. (6) Long term, sedentary behavior/inactivity elevates chances of chronic disease in children. (7) Hyper-parenting limits physical activity and can harm mental health. (8) When kids are closely

supervised outside by adults, they are less active; this can deter from the benefits of outdoor play. (9) Children are more interested in natural outdoor play than that with pre-fabricated play structures. (10) Outdoor play that occurs in minimally structured, free, and accessible environments facilitates socialization with peers, the community, and the environment; reduces feelings of isolation; builds inter-personal skills; and facilitates healthy development.

Valentine, G., & McKendrick, J. (1997). Children's outdoor play: Exploring parental concerns about children's safety and the changing nature of childhood. *Geoforum*, 28(2), 219-235. doi:10.1016/S0016-7185(97)00010-9

A deep discussion of the contemporary geography of children's play and the influence of parental concerns on children's play. The first half of the article focuses on the importance of play and the influence of environmental context, gender, and class on play experiences. The authors then transition to their study on parental concerns by alerting the reader to the modern societal concern about the lack of outdoor play. Through both written surveys and oral interviews, researchers found a general dissatisfaction with the provision of play opportunities. This varied with regard to class and location (urban versus rural). In individual circumstances, outdoor play was found to be more restricted and may partly be attributed to peer pressure of mothers. Again, class and location were significantly related. On the whole, children's play is becoming more structured and organized by adults. The authors suggest focusing research energies on the increase in parental anxieties, which would allow children to become independent in their explorations.

\*Wergin, C. (2015) The Case for Free-Range Parenting. Retrieved February 18, 2017 from <https://www.nytimes.com/2015/03/20/opinion/the-case-for-free-range-parenting.html>

In this op-ed, the issue of kids not having the same experiences as their parents is explored, claiming that this difference is due to parental fears. Countries such as Germany have been found to be more accepting for allowing children to explore their neighborhoods through walking exploration or the use of bicycles. Recently in the United States, two parents were found guilty of unsubstantiated child neglect for letting their children walk home from the park, showing this clear differentiation between the U.S. and the European country. In this article, parents recollect childhood memories of total freedom, however they are not willing to let their own children have those experiences; parents state that their fear of abductions plays a role in allowing for their children to explore in the same fashion they did as children.

\*Westervelt, E. (2014) Where the Wild Things Play. Retrieved February 29, 2017, from <http://www.npr.org/sections/ed/2014/08/04/334896321/where-the-wild-things-play>

This article discusses the concept of an adventure playground, and the impacts this playground can have on children using it. There are few "wild playgrounds" in the US-- these spaces offer children an anecdote to busy lifestyles, digital distractions, and overprotective parents. Stuart Brown, psychologist and founder of The National Institute of Play is interviewed for this article, claiming that parents should embrace the experience of "dangerous play" for kids, as it is essential for shaping who we become. While Europe has many of these types of adventure playgrounds, the United States has less than a half-dozen; staff members are required to regulate the hazards and hand out equipment, which adds to why this playground model is rather uncommon in the United States.

White, R., & Stoecklin, V. (1998). Children's outdoor play & learning environments: Returning to nature. Accessed June, 11, 2004. Retrieved from [http://www.naturalplaygrounds.com/documents/NaturalPlaygroundsDotCom\\_Outdoor\\_Play\\_Environments.pdf](http://www.naturalplaygrounds.com/documents/NaturalPlaygroundsDotCom_Outdoor_Play_Environments.pdf)

This article provides an excellent summary of the need and benefit of "discovery play gardens" to

children. The authors give a brief synopsis of the modern view of playgrounds, the psychology of human interaction with nature, and the proper design of play gardens. White and Stoecklin provide concrete examples of the type of "equipment" (plants, water, sand, etc.) that are crucial elements to an engaging outdoor, natural play space. Finally, they support their views with timely research.