

The Global Function of Play: A Review of the Literature on Cognitive
Development and Children's Play Around the World

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In compiling and reviewing the research conducted on the role of play in cognitive development around the world, there are several conclusions that can be drawn. This review of the literature seeks to analyze the correlational data connecting children's play to their cognitive development. Further, this review pursues a comparison of the perceptions of the function of play in children's lives in cultures around the world. In general, the research in this review concludes that there is a correlational relationship between children's play and their general development. While there are a variety of styles of children's play, this review pays attention to the general category of children's play with an emphasis on pretend play and physical play. Further, this analysis focuses on the schedule of cognitive development benchmarks in early childhood. It is also worth noting that there is minimal research analyzing play around the world. This review seeks to identify and explain international trends in perceptions of the role of play in the cognitive development of children.

The Role of Play in Development

In the study of childhood, there is a general understanding that children's play supports their development. It is traditionally accepted that play supports a child's sensorimotor development. Further, it is generally accepted that play supports the development of social and emotional skills through peer to peer interactions. However, there is a less evident correlation between children's play and their cognitive development. Additionally, there is limited knowledge of the directionality of the relationship between play and development. This suggests

that play could be a vehicle for children's development, or simply a marker of development delivered by other mechanisms.

Pretend Play and Cognitive Development

In a meta-analysis, Lillard et. al. (2012) sought to identify the connection between pretend play and children's development. They found that correlations between play and cognitive aptitudes are more strongly connected to construction and exploration play than to pretend play which tended to have inconsistent or null findings. In addition, they found that there is an inconsistent correlation between theory of mind (ToM) and pretend play. This finding is contradictory to many findings in the field of cognitive development including Lillard and Kavanaugh's (2014) findings where they did conclude that there is a symbolic prerequisite to the development of theory of mind. Pretend play serves as a substantial component of their definition of the symbolic construct (Lillard and Kavanaugh 2014). The Lillard et. al (2012) meta-analysis identified that there is a more consistent correlation between pretend play and social skills. The strongest correlation in the meta-analysis is that of pretend play and language development. Pretend play precedes language development. This finding acts to bridge the gap between this meta-analysis and the research conducted by Lillard and Kavanaugh (2014). In this research, they concluded that language development is a precursor to the development of theory of mind which implies that language development may act as the bridge between pretend play and theory of mind. Pretend play supports symbolic thought and language which in turn supports the development of a theory of mind.

Physical Play and Cognitive Development

Of all the correlations between play and cognitive development, the correlation between physical play and cognition seems to be the hardest to draw. Bjorklund and Brown (1998) sought

to identify the connection between physical play (specifically rough and tumble play) and cognitive development. They operated on the premise that physical and social development are inseparable. In turn, physical play development results in social development and vice versa. In their research, they also discussed the role of academic interference in prohibiting cognitive development. Essentially, they claimed that as children spend more time in rigid academic settings, the amount of academic interference builds up and prohibits high levels of cognitive development. Their research posits that physical play provides a break from interference in the academic day and allows children a sort of interference release. This break and release supports subsequent cognitive development after returning to the classroom. This finding makes the argument for recess as an indirect support for cognitive development. Bjorklund and Brown (2012) reference the way that traditionally rigorous Asian schools supplement their intense academic agenda with more recess as a contrast to American schools. Asian schools are designed around the knowledge of the importance of academic interference release. The findings also identify that boys are more likely to have advanced spatial reasoning skills. They suggest that this is likely the result of domain specific brain modules that encourage boys to seek out rough and tumble play more than girls. This research suggests that a higher prevalence of rough and tumble play causes this gender specific strength. Not only does play have a crucial role in diffusing academic interference, it also plays a role in the development of social cognition. Research in the field of cognitive development and physical play is limited, but this publication does support an argument that play directly and indirectly supports cognitive development (Bjorkland and Brown 2012).

Discussion

Each of these three articles stands in support of play directly supporting human development. These authors would not argue that play acts in opposition to development, but instead that play acts in support of (or at least in tandem with) development. Their research is a bit less clear as they analyze the connection between children's play and cognitive development. The connection between physical play and cognitive development relies heavily on play's indirect influence on cognitive processes and the connection between pretend play and the cognitive development benchmarks of early childhood remains conflicted in research. If we take a holistic approach to cognitive development, it is easy to make the argument that play supports the development of children, including their cognitive development. However, with a more atomistic approach to development, it becomes less evident that play specifically supports cognitive development.

Practically, these findings have specific implications for supporting the development of children. In the classroom, an understanding of the role of academic interference and the importance of play based remediation could drastically improve the cognitive outcomes of early childhood education. In addition, understanding that pretend play precedes language development and language development is crucial to cognitive development makes the argument for pretend play both in and out of the classroom. This research supports the notion that there is a clear direct relationship between play and human development and there is at least an indirect relationship between play and cognitive development.

Play Training in Cognitive Development

In an attempt to identify the causal connection between play and cognitive development, this review analyzes two training studies each designed to test the influence of play on cognitive

development. Fink (1976) was interested in the influence of make believe play on (a) conservation abilities (b) perspectivist style of thought and (c) imaginative style in the classroom free-play periods. Fink used a sample size of 36 kindergarteners and three training groups to see the scale of influence on the three variables. He saw that each of the groups saw an improvement in conservation capacity. The training group saw a significant improvement in social role conservation over the control and the mock training group. Play training also led to significant improvements in social perspectivism which allows the child to differentiate between their perspective and the perspective of others. With regards to extinction of results, only the training group improved in their imaginative play in the classroom free play times. This implies that play training can lead to sustained engagement in imaginative play which they concluded has a positive influence on social perspectivism and social role conservation. With creative play training, the researchers were able to enhance social role conservation and decrease egocentrism. As the result of training, children were able to increase the complexity of their play and make representational accommodations in their play environment (Fink 1976).

In an alternate play tutoring study, Christie (2001) wanted to know if play tutoring can result in stable gains in verbal intelligence and creativity. Further Christie wanted to know if play was effective independently from adult contact. Christie's research used a sample of 20 4-5 year olds and a pretest-posttest (x2) design with a play tutor group (sociodramatic play without an endpoint) and a skills tutor group (activities that have an end point) each composed of nine 20-minute sessions. Christie assessed creativity with measurements of fluency (number of ideas), Originality (uniqueness of ideas), and imagination (ability to assume roles).

This study found significant gains in both the play tutor group and the skills tutor group. Neither of these gains significantly diminished over time, however the play tutor group saw more

stable results after the tutoring was finished. Christie (2001) was surprised that the play tutor group did not lead to an increase in originality. Further, the similar results in both groups led Christie (2001) to believe that adult interaction in play tutoring was a significant contributor to development and that play training is not significantly effective independently from adult interaction. Finally, Christie (2001) concluded that both free sociodramatic play and skills focused play facilitate cognitive growth in children.

Discussion

Both of these studies produced results in favor of play as a support of cognitive development. With training and pre- and post-tests, they were able to see a correlation between improved creative play capacity and cognitive skills. In the simplest terms, when children were taught how to play creatively, they demonstrated enhanced cognitive capacity. The Fink (1976) study identified the ways in which play training can support children's capacity to advance their own cognitive development. Christie's (2001) study built on this by assessing the role of adult interaction in the process. Christie (2001) suggested that play alone does not provide a significant influence on cognitive development via training, instead adult influence acts as a mediator in development.

International Perceptions of the Function of Play

While there is a correlation between play and cognitive development, the beliefs of the importance of play varies cross-culturally. The second half of this review analyzes research in the perceptions of the function or purpose of play in cultures around the world. In general, when asked, parents and educators from the cultures reviewed saw play as a support for the development of children. However, there was variety in the types of development they saw it supporting and the extent to which parents were willing to prioritize play over traditional

academic preparation. As much of the research in the field is generated by Europe and the United States, the regions analyzed are limited. However, this review looks at research conducted in Asian- and Euro-American households, Cyprus, Japan, Sweden, and the United States.

Asian- and Euro-American Play Perceptions

Parmar, Harkness and Super (2004) conducted an analysis of parents' theories of play and learning. Further, they wanted to see what influence these beliefs had on regular home routines and school behavior. They used two samples (1 Euro-American and 1 Asian-American) of parents of children (36-72 months) in 24 schools in Connecticut. To assess parents' beliefs of the influence of play in development, parents were given a demographic survey, 2 play focused questionnaires, and a daily activities checklist. They were also interviewed about their beliefs regarding play and learning. The study found that Euro-American parents reported play supports development in general and cognitive development while Asian-American participants reported play as a social and physical developmental support. Children in both samples spent the same amount of time playing. However, Euro-American children spent more time in pretend play than did Asian-American children. Findings also supported the belief that Asian-American parents provide fewer in house opportunities for play suggesting that Asian-American children spent more time playing away from the house than their Euro-American counterparts. These findings led the researchers to the belief that Euro-American parents place a significantly higher importance on the role of play in development in early childhood while Asian-American parents do not see it as a viable tool to prepare for the demands of school (Parmar, Harkness, and Super 2004).

Cypriot Parents' Beliefs of Play

Shiakou and Belsky (2013) were interested in the play-based beliefs of parents in Cyprus. Not only did they analyze the parents' beliefs, but they also designed their study to analyze the cognitive implications of these beliefs. They used a demographic background questionnaire, beliefs questionnaire, and interview to assess beliefs of 142 parents of children between the ages of 4.1 and 7.0. They found that children in Cyprus spent more time on academics than they did on play. In interviews, play as a support for development fell very low in the rankings. However, parents did report a belief that play contributes to the cognitive and academic development of children. A significant majority of parents said that they believe that play is important for children's development. Interestingly though, if parents were not explicitly asked about play in development, they rarely reported seeing a benefit in play for development. However, when asked explicitly they almost unanimously reported play as a crucial support for development. This conflict was made evident in the weekly activities reports. Their children's weekly schedule more closely represented the rigorous academic schedules of Asian and Chinese American students and rarely prioritized play. This disconnect leads to overstressed children which in turn reduces their ability to engage academically (Shiakou and Belsky 2013).

Comparing the Giants: Japan, the United States, and Sweden

In a comparative study, Izumi-Taylor, Samuelsson, and Rogers (2010) set out to analyze the role of play in supporting categories of human development in Japan, the United States and Sweden. With a policy and research review, they learned that both Japan and Sweden include play in their national curriculum standards. However, there are no federal guidelines for play in early childhood education in the United States. American educators generally accept that play is a crucial self-regulation tool. Both American and Japanese educators reported play as having an

important correlation with cognitive development. Japanese teachers saw play as a reflection of “the power of living” and American teachers saw it as a development support. This suggests American teachers saw play as an active vehicle separate from traditional education that delivers cognitive development and Japanese teachers see it as a passive sidecar to development. Consequently, the concept of a play-center is an American construct. In both Sweden and Japan, play is integrated into life as opposed to being sequestered to a special location. The study went on to find that significantly more Swedish (28) teachers reported play as a process of learning than did Japanese (11) or US teachers (22). None of the Japanese teachers believed that play connected to academic learning implying a separation between cognitive development and academic learning. Cross culturally, play was seen as supporting social development. Swedish teachers uniquely saw play as a support for emotional development. This study concluded that all of the cultures surveyed reported that play supports learning in some capacity. However, the implications of this belief change from culture to culture (Izumi-Taylor, Samuelsson, and Rogers 2010).

Discussion

Cross-cultural analysis of play explains the ways in which culture and play interact in support of human development. Play is viewed differently in different sectors of each culture. Some nations have suggestions in national policy, while others neglect any formal mention of the importance of play. It is cross-culturally clear that the correlation between cognitive development and play is not as strong as the correlation between play and social, emotional, and physical development. In the event that a community believes that play supports cognitive development, as is the case with the United States, Japan, Sweden and Euro-American families, they also believe that play supports social and physical development. In the case of Sweden’s

rich history of including play in academics, it would be nearly impossible to separate cognitive development and the influence of play.

In multiple cultures, such as Asian-American households and families living in Cyprus, there is a disconnect between belief of the role of play and the practice of including play in weekly activities in support of cognitive development. Parents have a belief that play supports cognitive development, sometimes only when prompted, but they fail to prioritize play over traditional academic supports such as reading or studying. With comprehensive and comparative data on culture and play, the global education system can share relevant knowledge and better support the development of children.

In conducting international research in any field, it is easy to fall into the trap of over generalizing results. With the exception of the Parmar, Harkness and Super (2004) report, each of these reports over generalizes research with small samples to entire nations. In some cases, such as Sweden and Cyprus, the results likely would generalize as the populations are almost exclusively homogeneous. However, in the other cases, these results fail to address the nuance that is present within a culture. Overall this international analysis makes the argument that, with a few exceptions, play is believed to support children's development; however, play is rarely prioritized as a vehicle for cognitive development.

General Discussion

There is minimal disagreement regarding the role of play and development in general. Research supports the idea that play is either the vehicle through which children develop or it is a way to express developmental benchmark achievements. This review more strongly supports the idea that play supports development. Specifically, it makes the argument that pretend play and physical play support cognitive development. For example, play supports language development

and the acquisition of a theory of mind. With a series of training studies, this review demonstrates that increasing the complexity of play leads to an increase in the complexity of certain cognitive tasks.

Play as a vehicle for human development takes on different forms and functions around the world. This review looked at five cultures and their beliefs and representations of play. While the specifics from culture to culture shifted and changed, they had a common belief that play supported human development. In many cases, they also believed that play specifically supported cognitive development.

As globalization in education continues to progress, the academic implications of this review are crucial. The world is far from homogenous, and yet children are expected to compete in a global academic market. With the knowledge that play supports cognitive development and the understanding that cultures differently prioritize play, we can begin to design early childhood classrooms and education systems to better support the cognitive development of the global child.

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