

# Let's play! A cognition-based case for pretend play in preschool and young elementary curricula

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## *Introduction*

Pretending is a skill in itself, useful well into adulthood, with some benefits as valuable as they are unquantifiable. Nichols and Stich (2000) postulate that pretense has its own representation in the mind, a “possible world box.” But what would such a belief box consist of? Many aspects of pretense can be broken down and measured, and a growing body of evidence suggests that well-structured pretend play in childhood can lead to benefits across domains. For example, benefits are seen in cognitive competence (Gmitrová and Gmitrov, 2002), language acquisition (Ogura, 1991), problem-solving skills (Bergen, 2002) and early academic skills like math readiness and reading (Hanline, Milton, & Phelps, 2009). Despite play having such strong associations with positive cognitive development, impulse control (Saltz et al, 1977) and working memory (Diamond et al, 2007), more work needs to be done to show its long term academic benefits so it might gain mainstream adoption. In a progressive educational age that supports child-centered models of teaching and appeals to multiple intelligences like kinesthetic experience, interpersonal skills, and linguistic ability, it is surprising that pretend play receives such a marginalized role in lieu of content-focused methods. This paper will briefly review the history of play, summarize its connections to positive cognitive and academic outcomes, and finally focus on existing and future interventions to put play back in the classroom.

While reading this review, it is important to keep in mind the question of “what do we want our schools to teach our children?” I posit that, in addition to scientific knowledge, math skills, and literacy, we want kids to be able to respond to new situations, think symbolically and creatively, and competently communicate with one another. These goals set up a strong case for pretend play in school, made in the first half of this paper. In the second half, I will shift the attention to the logistics of play in a classroom.

### *To play or not to play?*

The case against play began in the ‘60s with the early behaviorist idea that “children from families of low socio-economic status (SES) suffer major deficits ... due to environmental deprivation” (Trawick-Smith, 2009). This led to a strict, content-based curriculum to make up for these deficits, which only used play as a reward for making concrete strides in material, and did not see it as a way in which to make these strides. While this showed promising early results, the effects were not lasting (Stipek, Feiler, Daniels, & Milburn, 1995). Moreover, in 2002, George Bush passed the No Child Left Behind act, which placed extra emphasis on test scores and content. This led to more didactic and teacher-directed instruction, which has been previously shown to cause higher levels of classroom stress than non-didactic programs, particularly in boys (Burts, Hart, & Charlesworth, 1992). Moreover, non-didactic programs in low SES preschools have also been shown to predict higher math and reading scores in 9<sup>th</sup> and 10<sup>th</sup> grade (Miller and Bizell, 1984).

“Non-didactic” instruction includes more than just pretend play, such as Highscope’s model of “plan, do, view, and group time” learning ([highscope.org](http://highscope.org)), which has shown longitudinal benefits over 40 years of children in preschool who received a more child centered approach to learning. These studies combine to make a subtle point: there are many types of play (socio-dramatic, rough and tumble, and construction play, to name a few) which have strong benefits to cognition, yet they

are only part of the picture. So while I make a case for play, it is in the context of a greater, well-rounded, child-centered academic environment. It is also important that learning in this context be both from peers and adults. Perhaps one of the strongest cases for play has nothing to do with the cognitive benefits of pretense but rather the proven fact that adult interactions in the context of play are more interactive and conversational than instruction-based interactions, inviting more child verbalizations, questions, decontextualized speech, and greater adult attentiveness (Trawick-Smith 2009). With this in mind, let us examine direct cognitive outcomes of pretend play.

### *Cognitive Outcomes*

Trawick-Smith describes the direct and indirect benefits of play in his defense of play-based preschool programs (Trawick-Smith, 2009). Play benefits the building blocks of future ability and the underlying cognitive structures, which mediate future success. To better understand the impact of play based learning, it is important to note the cognitive benefits of play on symbolic reasoning, theory of mind, creativity, language development, and executive functioning, which help to predict academic success.

Symbolic reasoning is a huge milestone on the path towards higher-level thinking and cognition, and begins to emerge around 3 years of age (DeLoache, 2002). Make believe play develops with this ability, and often involves children role-playing and allowing people and objects to represent what they are not. Schwebel (1999) shows that preschoolers who partake in more jointly constructed pretense in their play are better able to distinguish between the apparent and real identity of visually deceptive objects. The perspective taking involved in pretend play occurs more due to interpersonal components of pretense as opposed to intra-psychic components. Moreover, in a longitudinal study relating symbolic agents, complexity, and substitution (three key aspects of socio-dramatic play) to reading and math skills, Hanline, Milton and Phelps (2009) found that symbolic substitution was a powerful predictor of both skills. By providing a venue in which

children can think more abstractly, children increase their symbolic reasoning and are better prepared to link words and numbers to concepts.

Related, Theory of Mind (ToM) begins to emerge in pretend play even before it is experimentally evident via false belief tests like Sally and Anne. Jenkins and Astington (2000) show that ToM predicts the intricacies of role assignments in jointly created playworlds. Children begin showing signs of symbolic reasoning and even understanding when others are pretending before age 4, when ToM is traditionally thought to emerge via the Sally and Anne task. This suggests that ToM develops gradually from age two through six (and I would point out, even into adulthood – no one ever really masters ToM). In pretend play, ToM is constantly being exercised. For example, every time a child pretends a shoe is a magic crown, the other students must recognize the pretend nature of the object for the original child, as well as themselves. They also recognize that if someone was not paying attention, they will not know the nature of the pretend object and will explain the rules. Play also encourages children to engage in social referencing, or using another person's response to an ambiguous situation as a guide, as well as intention reading, which infants are able to do by only 18 months (Lillard, 2002).

Pretend play is also strongly correlated with creativity. This makes sense, as in order to come up with what an object represents, especially if it is a novel decision, children must be able to make loose associations. In fact, children with a higher score on the affect in play scale (APS, a measure of the complexity of play) in first and second grade will have a predicted higher divergent thinking score on an alternative uses test four years later, as well as a higher "affect in fantasy task" score, independent of IQ (Russ et al 1999). It is important to note here that more play does not necessarily cause divergent thinking, but predicts it, and the first grade score on an alternate uses task *also* predicted a high score four years later. From a social development perspective, a high APS score also predicted coping over time, suggesting more humane benefits to play as well.

Fourth, pretend play has been shown to enhance language development. “Thematic-fantasy play” has been shown to increase phonological awareness for children with articulation or phonological disorders in preschool (Constantine, 2001). In closely observed free-play episodes, children’s language is found to be more decontextualized, meaning explicit and clear enough for an absent audience, due to the demands of communicating with peers in pretend play (Vedeler, 1997). There is also a huge opportunity to embed literacy within play, although the implications of this are not so clear, as whether this helps children advance as readers and writers has not truly been tested yet (Roskos & Christie, 2001). The linguistic development associated with play is also closely tied to social competence, yet we must take care to remember that not all outcomes of play are necessarily socially positive (avoid the “play as progress” rhetoric, as Roskos and Christie (2001) point out), as it can be used to bully and sometimes physical and verbal aggression emerge.

A final (but not the last) cognitive consequence of play is the furthered development of certain executive functions (EF), notably working memory and inhibitory control. A study that trained disadvantaged preschoolers in playing various fantasy activities (acting out plays and trading roles) found that fantasy play farther from reality was more facilitative in tasks such as impulse control and sequential memory than was listening and discussing the same fantasy stories or engaging in “typical preschool activities” like cutting and pasting and categorizing (Saltz, Dixon, and Johnson, 1977). For Vygotsky (1976), monitoring private speech is a key aspect of building EF skills, and this surfaces naturally in mature, dramatic play, which he also advocates as the main mechanism for developing EF. Children must think actively while they produce speech, and mature play involves both pre-planning and scaffolding during the process into Vygotsky’s “Zone of Proximal Development.” Through role playing, children are forced to engage their working memory by learning new rules and expectations as well as engage their cognitive inhibition by following certain

constraints on behavior (Diamond et al, 2007), as dramatic play involves working in an “imaginary situation governed by social rules” (Barnett et al., 2008).

### *Academic Outcomes*

Many of these improved cognitive outcomes (like cognitive control) have been linked to greater school success (Diamond et al, 2007). Controlling for age and gender, EF predicted 24% of academic competence (Obradovic, lecture), phonemic awareness predicts future reading ability (Constantine, 2001), divergent thinking is a key trait of being considered “gifted” (Runco, 1993), and symbolic reasoning associated with block play predicts math ability on the SATs (Wolfgang, Stannard, and Jones, 2001). In addition to academic preparation through the mediation of cognitive strategies, there is also robust literature discussing the more direct relationship between pretense and problem solving, narration, and literacy, the “direct effects,” as Trawick-Smith calls them, though I am hesitant to frame this section in that way because it is likely they are still mediated by cognitive skills and not a direct effect of pretense.

Problem solving is a very relevant skill that is commonly tested in school. With respect to problem solving, Wyver and Spence (1999) examined the interaction between pretend play and both convergent and divergent (figural and semantic) problem solving. Despite many before them linking play and divergent thinking, they found an complex, bidirectional relationship between the causality of problem solving skills and play skills. They mutually reinforce each other. It was refreshing to read this study, as most of the other studies about pretend play correlate the quality of a child’s pretend play with the expected outcome and leave the reader to assume causality, when in fact it might be just the opposite – that, for example, greater executive functioning causes higher quality pretend play. Pretense might in fact be an academic outcome to work towards in itself.

Perhaps the most salient aspect of pretend play I haven’t mentioned yet is its attachment to narrative and story telling. As Vivian Paley says, play is a “universal learning medium,” inseparable

from storytelling and narrative (quoted in Nicolopoulou, 2005). Nicolopoulou continues to show that play and narrative are complementary and mutually enriching roles, citing a longitudinal study by McCabe and Bliss (2003) that argues that a mastery of narrative skills forms a foundation for literacy and long-term school success. Baumer et al (2005) show us that narrative intervention leads to greater narrative length, coherence, and comprehension, all of which are academically desirable. Finally, play interventions have been shown to increase “embedded literacy,” or reading of objects in their environment, over a three year longitudinal study for children with literacy materials in their play (Vukelich, 1994) after an intervention that lasted fifteen weeks. The aspect of improvisation also fascinates me, and as Sawyer (2001) shows, the story “emerges from the collective actions and contributions of each participant.” Sawyer (2002) states it is precisely this moment-to-moment contingency that contributes to narrative development, for it provides a sort of practice zone in which narratives are not coherent yet build around common themes with some sentences following logically from others. By being a practice zone, play, and metaplay, in which children discuss their narrative decisions with others (like a group self-talk), has clear benefits to future narrative and literacy skills.

Several issues arise in a discussion of academic merit, however. Most research has come from small scale, cross-sectional studies that do not show the cognitive skills exercised in pretend play cause long term success or are essential for good test performance (Bergen, 2002). Second, we must re-analyze our methods for evaluating claims of academic benefit. Present data recorded about play is correlational, and as Wyver and Spence (1999) show us, often it is not clear where causality of skills lies. Thus the growing trend towards intervention studies will help tease out the causality of play as well as be more practical in actual policy implementation of research. Finally, an important detail to consider in academic outcomes is the differential effects of play. For example, will low SES and developmentally disabled children benefit more or less? Research suggests they have more to

gain, despite the present response being to put them on intensely content based tracks to level the playing field (while this actually holds them back).

### *Existing Interventions*

Thus it makes sense, with such a wide array of benefits, that there have been many recent interventions trying to test the best ways to incorporate play into a curriculum. Issues to consider are the intensity/frequency of the intervention and the level of adult interaction. I will look at Tools of the Mind as a fully integrated example, Playworld as an example of partial integration, Gmitrova for comparing child-directed or teacher directed play, and Story Pirates as a model of an intermittent literacy intervention. One point to note: it is important to understand that play is not a *laissez faire* activity, and that in all of these interventions, play is a very hands on activity with planning and constant vigilance.

Tools of the Mind (Tools), the 2001 winner of the UNESCO prize for exemplary innovation, was created to help boost cognitive control in preschoolers, operating under the belief that EF is the best predictor of academic readiness. Not only does it improve children's EF making them ready for processing content, but it also makes them better able to sit still, pay attention, and contribute positively to the environment. Notably for this paper, tools places a strong emphasis on mature, dramatic play as a huge boost to EF. Tools also uses quite revolutionary methods. Although many of their activities are not revolutionary, it requires the biggest structural overhaul to adapt into a classroom, even if it requires the same amount of training and funding. Tools teachers spend approximately 80% of each day promoting EF skills (Diamond et al., 2007), and it was shown that only when students receive daily EF "exercise" constantly throughout a day do they generalize gains to new contexts. This raises doubts about less all-encompassing interventions.

Yet such interventions do exist. An intervention developed by Baumer, Ferholt, and Lecusay (2005) based off the Scandinavian practice of playworld involved just 2 hours a week of instruction



for 14 weeks and saw marked improvements in narrative length and complexity. Playworld combines Lindqvist's (2001) "play pedagogy" and Pentti Hakkarainen's (2004) "narrative learning." Play pedagogy advocates for adults to participate in children's play, but rather than from a psychoanalytic or cognitive perspective, it calls for a more artistic and cultural approach. It allows that adult to truly influence the children's play and create new possibilities. Thus the logistics involved the creation of an adult supported playworld with pretend play, a dramatic performance of children's literature (in this case *The Lion, the Witch, and the Wardrobe*), and a visual art production. Narrative learning, on the other hand, operated by hiding a logical, mathematical, or otherwise curricular problem in the story itself, as a loose end or problem the actors have to deal with. This play draws on the idea of "perezhivanie," a Russian term for a lived through experience, referring to the direct experience of another person's mental state (Vygotsky 1999, cited in Baumer, 2005). Thus a playworld intervention developed by Baumer et al (2005) led to increases in narrative length and complexity (though not in linguistic complexity, though there were also more qualitative benefits to the intervention, such as a richer sensory perception of pretend situations such as snow falling on a nose) after just 14 weeks of 2 hour sessions.

One final intervention I will discuss shows that child-directed behavior in small groups increases cognitive manifestations when compared with teacher led activities in children age 3-6 (Gmitrová and Gmitrov, 2003) In small group sessions, teachers spent the time facilitating and scaffolding students' play. This suggests higher teacher to student ratios would be beneficial in play curriculums. While it does not compare this to a no-play intervention, it does claim the play intervention causes children to think more, learn more, remember more, and spend more time on task in cooperative groups. This is directly relevant when thinking how to structure play time. Building off this, O'Connor and Stagnitti (2011) compared a play and non-play intervention in a

specialist school, showing less social disruption and more social connectedness with their peers for those in the play intervention. Thus play can greatly improve social skills as well.

### *Future Directions*

With so much research out about the benefits of play and pretense, it is nice to see some interventions being developed, implemented, and tested scientifically. However when it comes to play and improvisation, there is an ever-looming air of “just do it,” and that’s precisely what some groups are doing based off of the science and human intuition. For example, the Story Pirates have a marketable intervention in both New York and Los Angeles in which they perform constructed play for students before leading workshops for several hours a week from one to five weeks in a classroom. After the creative writing workshops, which are centered around child interaction and play and benefit from a greatly increased adult-child ratio, children often exhibit greater passion for the performing arts, writing, and a greater willingness to engage in narrative thinking (storypirates.org). At Stanford, a similar initiative is underway. This year a group of 22 students staged a play and narrative based intervention for 2 hours a week for four weeks with second graders at a local elementary school and saw tremendous social gains. There is room in this framework for a more EF based approach to teaching or a more rigorous curriculum to allow for scientific testing of those who receive the play based intervention or not. Perhaps some of the techniques seen in the interventions section can be incorporated into this group.

In conclusion, we have shown that pretend play and play based curriculums have direct cognitive and academic benefits as well as harder to quantify social benefits, and ought to be considered more strongly as the basis of or intervening supplement to preschool and lower elementary curriculums.

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