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Abstract

Competing trends in early childhood education emphasize the need for strong curricular approaches and for unfettered exploration. We propose an approach to early learning that avoids this false dichotomy: guided play. Guided play takes advantage of children's natural abilities to learn through play by allowing them to express their autonomy within a prepared environment and with adult scaffolding. We provide examples of how guided play situations have been implemented in past work, as well as evidence that guided play is successful for education across a range of content—perhaps even more successful than other pedagogical approaches.

Keywords

cognitive development, guided play, education, early childhood

A recent article in *Forbes* magazine posed a question that has always captivated entrepreneurs, business leaders, and politicians: What is the key to prosperity? The article's answer was simple: play (Townsend, 2014). A growing body of literature from developmental psychology and education science reinforces this conclusion (see Hirsh-Pasek, Golinkoff, Berk, & Singer, 2008). For example, at-risk children who attend play-based preschools are significantly less likely to be arrested for a felony or suspended from work than children who attend preschools without an emphasis on play (Schweinhart, Barnes, & Weikart, 1993).

Although results like these suggest that play may support the growth of a variety of abilities, this work is primarily correlational (Lillard et al., 2013). Therefore, it is important to temper enthusiasm for play with considerations of what play cannot do. Giving children unstructured time to explore may indeed boost their social and self-regulatory abilities, but pedagogy of some kind is necessary to encourage the growth of knowledge and critical-thinking skills. Put simply, children cannot learn letter–sound pairings or addition by running around on a playground, even if that playground is covered in letters and numbers. Strong curricular approaches thus have value in teaching children the skills they need to start school (Campbell, Pungello, Miller-Johnson, Burchinal, & Ramey, 2001; Schweinhart et al., 2005).

Unfortunately, the issue of the proper role of play in early education has too often been framed as a false dichotomy between learning and play (Clements & Sarama, 2014; Hirsh-Pasek & Golinkoff, 2011). Discussing early education in these terms masks the fact that each approach has some merit. Here, we advocate for a middle ground: *guided play*, which melds exploration

and child autonomy with the best elements of teacher-guided instruction (Fisher, Hirsh-Pasek, Golinkoff, Singer, & Berk, 2010; Weisberg, Hirsh-Pasek, & Golinkoff, 2013).

What Is Guided Play?

Guided play refers to learning experiences that combine the child-directed nature of free play with a focus on learning outcomes and adult mentorship. Children thrive when they engage in free play, which involves active engagement and is fun, voluntary, and flexible (Burghardt, 2011). But for reaching specific learning goals, some adult support is necessary. Guided play thus has two key elements: child autonomy and adult guidance. This makes it engaging, but with the advantage of focusing the child on the dimensions of interest for a learning objective.

Guided play can take two forms. In one, adults design the setting to highlight a learning goal while ensuring that children have autonomy to explore within that setting. For example, high-quality museum exhibits teach visitors while allowing them to explore as they like. Research suggests that children's relatively free exploration with a restricted set of materials can lead to learning (Cook, Goodman, & Schulz, 2011; van Schijndel, Visser, van Bers, & Raijmakers, 2015).

The second form of guided play occurs when adults watch child-directed activities and make comments, encourage children to question, or extend children's interests. For example, 4- to 8-year-olds at a Chicago Children's Museum exhibit were asked to build a sturdy skyscraper to highlight principles of engineering. When adults asked open-ended questions while the children were building (e.g., "What is this for?"), children learned more and could transfer their knowledge to a new structure (Haden, Cohen, Uttal, & Marcus, 2016). Another example comes from a study that trained instructors to reinforce the meanings of new words in a play session. Adults augmented children's play by inserting definitions for concepts when children's attention

was naturally focused on those concepts. For example, they might teach the word *below* as a child decided to make a dragon fly over a toy castle (Toub et al., 2015).

These examples illustrate how sensitivity to children's attention and engagement within the flow of an activity allows for the accomplishment of a learning goal. In guided play, adult scaffolding focuses the child toward the pedagogical goal without usurping child autonomy. Allowing children to lead ensures that they are intrinsically motivated to learn. If children feel that they are doing an activity only because an adult wants them to, or because they want to earn a reward, then they can feel prodded or bribed and lose interest (Lepper & Henderlong, 2000). Guided play emphasizes the need for keeping the activity engaging from the child's point of view (Ramani, 2012), because children learn best when they are active and involved (Chi, 2009; Hirsh-Pasek et al., 2015). Importantly, adult guidance is just as crucial. Without it, even older children might struggle to learn some types of content, because demands of the learning context may exceed their capacities for encoding and storing relevant information (Kirschner, Sweller, & Clark, 2006).

In brief, guided play takes place in a constrained environment with scaffolding that allows adults' expertise to inform children's independent choices. We crucially emphasize that guided play leaves the locus of control with the child, allowing for self-directed exploration while enhancing learning and genuine enjoyment. The adult's role is to prepare the environment and use open-ended prompting to encourage the child toward the learning goal, but children must navigate their own path through the learning context. Maintaining this balance between child leadership and adult scaffolding is the essence of guided play's successful formula for learning (Honomichl & Chen, 2012; Weisberg et al., 2013). This approach takes its inspiration from Lev Vygotsky, who championed the idea of teaching at each child's "zone of proximal

development": the level at which each child is most ready to develop new skills. Our goals here are to clarify exactly how we think this kind of teaching should be implemented and to provide evidence that it works for preschool and early elementary education.

The Efficacy of Guided Play: Four Key Examples

Many studies illustrate the efficacy of a guided play approach. Some were reviewed in a recent meta-analysis of learning in children, adolescents, and adults, which aggregated the results of 164 earlier investigations (Alfieri, Brooks, Aldrich, & Tenenbaum, 2011). This analysis found that "enhanced discovery" (analogous to guided play) led to better outcomes than other types of learning. Here we present four detailed examples illustrating this claim in young children.

In one example, Sobel and Sommerville (2010) showed 4-year-olds a machine with colored lights, activated by buttons. All children had to figure out which lights made other lights work. Some of the children played with the box first and then observed an experimenter press each button once and narrate his action (discovery condition). Other children engaged in these two phases in reverse, first observing the experimenter and then playing with the box (confirmation condition). Children learned how the lights worked better in the discovery condition than the confirmation condition. Acting on a toy to discover how it works thus leads to better learning compared to playing with a toy merely to confirm what has been shown. This suggests that participating in active discovery allows children to benefit more from adult teaching (see Schwartz, Chase, Oppezzo, & Chin, 2011, for an analogous result with adult learners).

Our second study directly investigated different strategies for teaching preschoolers the properties of various shapes, such as triangles (Fisher, Hirsh-Pasek, Newcombe, & Golinkoff, 2013). To understand triangles, children must learn that every figure with three sides and three angles is a triangle, even if it is not an iconic equilateral triangle. Each child received a set of

bendable sticks that could be used to construct shapes and a set of cards depicting shapes. These cards presented two different types of shapes: typical (e.g., equilateral triangles) and atypical (e.g., triangles with one very wide internal angle). Children saw these materials in one of three conditions. In the free-play condition, children could do whatever they wished with the cards and construction sticks without direction from the experimenter. In the didactic-instruction condition, the experimenter acted as an explorer discovering the properties of each type of shape while the child passively watched. In the guided-play condition, the experimenter invited the child to explore with her and to discover the shapes' properties. After this training phase, children were asked to select only the real triangles from a set of typical shapes, atypical shapes, and non-shapes. Children in both the guided-play and didactic-instruction conditions learned better than children in the free-play condition. But children in the guided-play condition were significantly better at transferring their knowledge to atypical shapes compared to children in the didactic-instruction condition. Children's active participation in discovery, combined with appropriate scaffolding from a knowledgeable adult, allowed them to better understand the important features of the shapes (see also Sim & Xu, 2015).

Guided play can also allow children to generate their own learning opportunities that go beyond adult teaching. In our third example, 4- to 6-year-olds saw a toy that had several functions (e.g., pushing a button turned on a light, pressing a lever played music). When adults demonstrated only one of these functions, children's later free play concentrated on the demonstrated function. When adults seemed to happen on the function by accident, however, children's later free play revealed more experimentation with the toy's full range of functions (Bonawitz et al., 2011). Guided play may thus enhance the discovery of undemonstrated functions, whereas direct instruction may inhibit this kind of exploration. Importantly, teachers can scaffold self-directed

exploration in other ways, such as by hinting at other ways to explore after providing a demonstration (Kittredge, Klahr, & Fisher, 2013) or by asking pedagogical questions (Landrum, Bonawitz, Omar, Bamforth, & Shafto, 2015).

These examples suggest that guided play offers an effective alternative to direct instruction when there is a learning goal in mind. But finding an optimal balance between self-discovery and adult guidance is a serious challenge, because it heavily depends on the target concepts. As children get older and the contexts for learning become more complex, children might not be able to fully discover causal relations without increases in explicit instruction. Klahr and Nigam (2004) directly tested this hypothesis with a group of third and fourth graders as they learned to design simple experiments in a science lesson. After an initial period of exploration, children in the direct-instruction condition saw a teacher perform experiments and explain why each experiment was good or bad for determining the effect of some variable. Children in the discovery condition were asked to design experiments that would reveal each variable's effect without any further guidance.

We acknowledge that there is some ambiguity about the precise label that should be applied to these two conditions (Klahr, 2013), especially since this direct-instruction condition was similar in some respects to Sobel and Sommerville (2010)'s discovery condition. But the most relevant aspect of this study is that, on a difficult far-transfer task in which they were asked to make richer scientific judgments, the few children who discovered experimentation strategies on their own performed no better than the many who learned it from direct instruction (see also Chen & Klahr, 1999). For learning this challenging procedure, it is difficult to design an environment that will ensure that children attend to the critical features of the learning goal without more adult

scaffolding. Such studies remind us that the balance between adult scaffolding and self-direction can and should shift depending on the learners' abilities and the learning goals.

These four studies, taken together, show that a combination of children's self-directed participation and adult scaffolding creates a powerful pedagogical approach for learning in young children. More importantly, these studies demonstrate that there is a vast pedagogical space between the stark dichotomy of free play and direct instruction.

Why Is Guided Play Effective?

Guided play offers an exemplary pedagogy because it respects children's autonomy and their pride in discovery. It thus may help to cultivate children's love of learning, promoting their engagement while offering support for knowledge acquisition. In this way, guided play creates the right *mise en place*—a confluence of environmental and psychological factors that gently shape not only the desired outcomes in learning but also a more positive attitude toward learning itself (Weisberg, Hirsh-Pasek, Golinkoff, & McCandliss, 2014).

The *mise en place* constructed in guided play can also explain why these environments are successful at conveying learning goals. For example, in the shapes study discussed above, having both typical and atypical shapes present sparked comparisons between different types of triangles. Different features of objects thus encourage different kinds of interactions, which in turn set the stage for deeper kinds of learning. Similarly, the encouragement to provide scaffolding during child-initiated activities can lead adults to construct richer learning opportunities: Parents who were encouraged to work with their children to assemble a block structure in a guided play environment produced more spatial talk (and hence more opportunities to learn spatial concepts) than parents who engaged freely with their children (Ferrara, Hirsh-Pasek, Newcombe, Golinkoff, & Lam, 2011).

Open Questions

Further research, especially in naturalistic settings, is critical for building a more nuanced understanding of guided play. One challenge is to determine exactly which aspects of adult-provided guidance are most effective. For example, in an adult-guided board game with kindergartners, a very small difference in guidance—asking children to add the spinner's number to their current number, rather than counting from 1—led to substantial differences in learning about the number line (Laski & Siegler, 2014).

Another major aim for future research is to determine exactly how to balance child agency with adult constraint across a range of educational content and for different learners. How often should learning experiences take the form of guided play? How much child agency is necessary for high-quality learning? Another key challenge will be to differentiate how guided play experiences affect students' learning of content compared with their motivation for future learning.

Conclusion

Decades of research have shown that free play is necessary for healthy development and can boost certain skills in early childhood. But children need to be pointed toward the relevant dimensions of a problem if they are to learn. Guided play combines the best elements of free play and direct instruction: child autonomy and adult expertise. It provides an optimal medium for delivering educational content in ways that are enjoyable and that allow for genuine child agency, while constraining children's activities to facilitate learning.

Existing curricula could naturally incorporate elements of this approach, such as allowing children to take the lead within a prepared environment (see Neuman & Roskos, 1992) or structuring material in game-like ways (Morris, Croker, Zimmerman, Gill, & Romig, 2013). New

curricula might also build on the success of existing programs that implement aspects of the guided play approach, such as Montessori (Lillard, 2013), Reggio Emilia (Edwards, Gandini, & Forman, 1998), Tools of the Mind (Bodrova & Leong, 2015), and Community of Learners (Brown & Campione, 1994). The research reviewed here gives us reason to believe that doing so will lead to the best possible educational outcomes.

Recommended Reading

Bodrova, E., & Leong, D. J. (2007). *Tools of the mind: The Vygotskian approach to early childhood education* (2nd ed.). Columbus, OH: Merrill/Prentice Hall. Describes an early childhood curriculum incorporating some of the principles of guided play into the classroom.

Burner, J. S., Jolly, A., & Sylva, K. (Eds.). (1976). *Play: Its role in development and evolution*. New York, NY: Basic Books. A classic edited volume examining the role of play, discovery, and learning, including many examples from nonhuman animals.

Miller, E., & Almon, J. (2009). *Crisis in the kindergarten: Why children need to play in school*. College Park, MD: Alliance for Childhood. An accessible overview of the decline in recess and other free-play opportunities in schools and why this poses a problem for early education.

Singer, D. G., Golinkoff, R. M., & Hirsh-Pasek, K. (Eds.). (2006). *Play = learning: How play motivates and enhances children's cognitive and social-emotional growth*. New York, NY: Oxford University Press. A collection of papers presenting evidence for how play contributes to learning.

Tobias, S., & Duffy, T. M. (Eds.). (2009). *Constructivist theory applied to instruction: Success or failure?* New York, NY: Routledge. An extensive (and sometimes heated) debate over constructivist approaches to instruction in a wide range of contexts.

Author Note

Deena Skolnick Weisberg and Kathy Hirsh-Pasek contributed equally to the writing of this manuscript and should be considered as joint first authors.

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

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