Play and Creativity

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Can students learn to be more creative? Creativity may not be a matter of learning but of unlearning. We have in us a natural innate built-in drive designed to push us to learn and experience important principles of creativity, things like; curiosity, discovery, exploration, experimentation, communicating, and socializing. This instinctive drive is called play. Play attributes are like creative attributes but are not sufficiently comprehensive as to be considered synonymous. What can be learned from play and what can be unlearned from our training to be more creative. It is time to push back and provide opportunities for unlearning those things that limit our creativity and relearn those important attributes gained through principles of play.

Keywords: creativity, play, playful, design thinking, design

INTRODUCTION

A core competency of design is making human connections through need finding and defining, which are important aspects of creative thinking (Getzels, 1975; Runco, 1994). The department of design at Brigham Young University is continuing to try to understand and apply core creativity principles in a structured creativity course and to infuse more creativity opportunities into a variety of other courses. These internal efforts have led to a campus-wide mini course on creativity principles and methodologies.

The questions arise, can you teach creativity, and can students learn to be more creative? Creativity may not be a matter of learning but of unlearning. In 1968, George Land and Beth Jarman (Land & Jarman, 1993,) conducted a longitudinal research study to test the creativity of 1,600 five-year-old children who were enrolled in a Head Start program. The test was the same creativity test he devised for NASA to help select creative engineers and scientists. The assessment worked so well that he decided to try it on children. Land re-tested the same children at 10 years of age and again at 15 years of age. The results were astounding.

- Test results among 5-year-olds: 98%
- Test results among 10-year-olds: 30%
- Test results among 15-year-olds: 12%
- Same test given to 280,000 adults: 2%

Land wrote, “What we have concluded is that non-creative behavior is learned.”

Tom Kelley and David Kelley (2013), in his book *Creative Confidence*, shares an interesting insight; he pointed out that there is no word in the Tibetan language for "creativity" or "being creative." The closest translation is "natural." In other words, if you want to be more creative, you just have to be more natural.

We have in us a natural instinctive drive designed to push us to learn and experience important principles of creativity, things like curiosity, discovery, exploration, experimentation, communication, and socialization (Elkind, 2007). This instinctive drive is called play. The drive to play freely is a basic, biological drive. Free play is how children learn to make friends, overcome fears, solve their own problems, and generally take control of their lives. The things that children learn through their own initiatives, in free play, cannot be taught in other ways (Gray, 2013). Decades of research has shown that play is crucial to the development of these skills. This is especially true of the purest form of play: the unstructured, self-motivated, imaginative, independent kind, where people initiate their own games and even invent their own rules (Elkind, 2007). Children are intrinsically motivated to play, and they learn at tremendous rates in their formative years (Bowler & Linke, 1997).

It turns out that creativity is not some rare gift to be enjoyed by the lucky few—it is a natural part of human thinking and behavior (Kelley & Kelley, 2013, p. 6). Can we help students unlearn this non-creative behavior they have been taught? Observations have shown that students who are the most creative and who are also most resistant to the pressures to conform are resilient. A creative adult is a child who survived. If creativity is a natural tendency, where does that natural tendency go?

In our society, efforts are made to try and control children's natural tendencies and inclinations for learning at an early age. They are told that it is time to stop playing and start working. It is time to control those physical urges and sit still. It is time for learning a set of rules. It is time to conform to authority, and it is time to stop socializing and work independently.

HISTORY OF EDUCATION

Our public educational system took aspects of its theory from the schools established by the Puritans. The Puritans believed that children were born sinful and needed to be disciplined, that all pleasure was a trick of Satan, that hard work-built character regardless of the outcome, and that suffering was virtuous. Willfulness and the spirit of freedom had to be beaten out of children to make them good Christian workers (Gray, 2013). This educational system was eventually taken over by the state, who believed that the role of the school was to develop patriotism, a pledge of allegiance to the establishment and authority. Their desire was to blend a diverse number of cultures into a unified whole and use education as a defense because we were in competition with other nations. We had to work hard to beat the Soviets. (This is when homework was introduced.) As a part of that defensive strategy, the school system was fashioned in the image of industry to train students in the classroom to function well in the industrial environment, which demanded that students memorize the rules, not question content or authority, do the tasks they were asked to complete as efficiently as possible, and work independently (Robinson, 2010). This is why, as Postman says, "Children enter school as question marks and leave as periods" (1969, p. 53). The priorities of industry have changed, but our educational system has been slow to adapt.

All three of these systems—religion, state, and industry—were educating for a specific end result, and their methods were designed to produce the desired outcome. None of these systems was interested in things like curiosity, discovery, exploration, experimentation, communication, and socialization because there was no perceived need. This system taught non-creative behavior because that was what was important at the time.

This is not to say that these work principles are not important, but there should be a balance of work and play. It is time to push back and provide opportunities for unlearning those things that limit our creativity and relearn those important attributes gained through principles of play.

PLAY AND CREATIVITY

Play attributes are important for creativity, but they are not sufficiently comprehensive to be considered synonymous. The commonalities described below are aspects that creativity and play have in common.

Literature searches identified numerous connections between several aspects of play and creativity. Here is an amalgamation of defined attributes of play that apply also to creativity. Play is a divergent thinking activity (Johnson, Christie, & Wardle, 2005). Play is a range of intrinsically motivated activities normally associated with pleasure and enjoyment (Garvey, 1990). Play is immersive (Garvey, 1990). Play is ambiguous (Sutton-Smith, 1997). Play is heuristic in nature, in that there are little or no fixed rules, and if there are rules, they are often very fluid. Play is driven by curiosity and discovery, exploration and experimentation, and communication and socialization (Elkind, 2008).

There is a correlation of creativity to these aspects of play. Creativity is a divergent-thinking activity (Guilford, 1968). Creativity is intrinsically motivated—the activity itself is its own reward—whereas work is usually an extrinsically motivated activity. If we can define task engagement for extrinsic reasons such as "work" and task engagements for intrinsic reasons such as "play," it will be expected that states of highly creative activity will seem like play (Amabile, 1988). Creativity is immersive; Csikszentmihalyi (1997) has studied creativity extensively and describes it as a flow state in the creative process that requires just the right balance of challenge and opportunity. He compares this to play. Creativity is ambiguous; Vernon (1970) seemed to think that a tolerance for ambiguity was the most important trait for successful creative work. Creativity is heuristic in nature; it has no clear process and can be inhibited by rules and norms. Creativity is driven by curiosity, the desire to understand the "why." Creativity is discovery. James (1907) described it as perceiving in an unhabitual way. Creativity is exploration and experimentation. "The ability to relate and to connect, sometimes in odd yet striking fashion, lies at the very heart of any creative use of the mind" (Seidel, 2015). Koestler (1964) added that creativity "is the ability to make combinations of previously unrelated structures." Creativity offers opportunities to explore and experiment and to fail with no repercussions. Communication and socialization or collaboration drives creativity because innovation always emerges from a series of sparks—rarely a single flash of insight (Sawyer, 2007).

What emerges from these comparisons is the difference between play and being playful. Play is an activity; playfulness is a mindset. What we are trying to instill in our students is a playful mindset because a playfully light attitude is typical of creative individuals (Csikszentmihalyi, 1996).

In trying to understand creativity, we have tried to understand play—how creativity and play are connected. As an example of these efforts, we turn to a student senior thesis project that focused on play. Outlined here is that student's research and discovery about play.

SENIOR THESIS PROJECT ON PLAY

Research and Observation

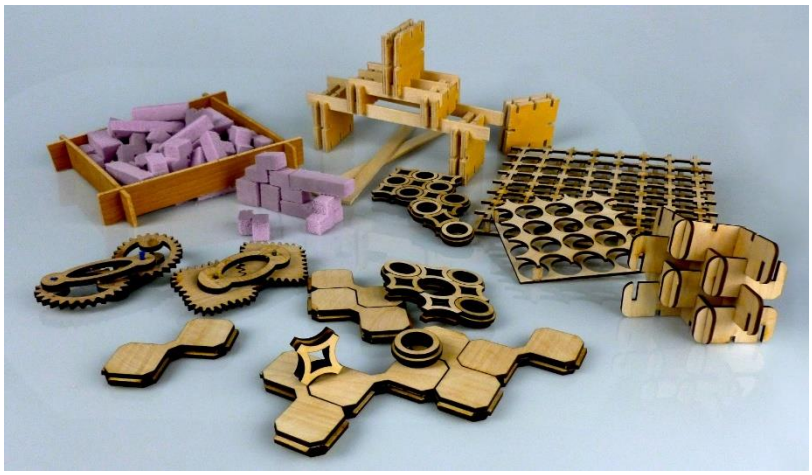
The student began the study by seeking to understand the role and value of play in the lives of children. A literature search on the topic was conducted and reviewed. Interviews with various educators in the School of Family Life at Brigham Young University and elsewhere were conducted. Discussions with parents and children in regard to play were also completed. In addition, simple observations were conducted to see how children played in playgrounds, homes, and schools. The consensus of the literature, interviews, and discussions indicated that opportunities for free play have diminished over the last few decades (Gray, 2011), and a variety of unfortunate consequences have ensued (Ginsburg, 2007). Free play is a means by which children learn social skills, overcome fears, solve problems, and take control of their lives (Gray, 2013). These positive aspects of a child's life are curtailed because of lack of freedom to play, and these aspects are taught best through play. Can opportunities for more free play be created in this environment of fear for the safety of children?

Playthings

The initial approach was to provide a plaything that would enable children to experience unstructured play. The exploration included a variety of game-driven toys. Yet, it quickly became apparent that games add structure to play and therefore reduce the positive traits associated with unstructured play, such as curiosity, discovery, exploration, initiative, responsibility, and creativity.

Several articles share how fundamental the toy block has been through the centuries in helping to promote child-led play (Cartwright, 1988). Small blocks easily put the child in charge, as he or she can have complete control over the toys (Frost, 1989). The focus of the student's study turned to creating a block that would not be rules-driven like a game but open-ended. Several block varieties were prototyped, including blocks with offset centers of gravity, puzzle-like blocks with interesting combinations, and block accessories (Figure 1).

FIGURE 1
BLOCK EXPLORATION



Upon further investigation, however, it became apparent that the market was saturated with blocks and other similar toys. Homes are already full of a variety of blocks and toys that do spur creativity in children. The insight was in the connection of the playthings and the play environment (Best, 1998).

Play Environment

One possible reason that unstructured play is lacking in the home is that the home itself is not an environment that fosters child-led play. Environmental design addresses this issue and offers a number of applications that guide children to unstructured play more naturally (Frost, 1989).

Unlike small toys such as blocks, environments are harder for children to control. But rather than stifling play, environments allow children to become the plaything. They can run, jump, and climb through the spaces and enjoy the physical sensations associated with physical movement. Environments can also enable "rough and tumble" activity, which is a key element to balanced play (Gray, 2011).

Playgrounds offer a number of environmental solutions, and their history and development show how our understanding of open play has changed. Although children have access to play spaces at schools, parks, and playgrounds, studies show that children are spending increasing amounts of time in the home. Yet, most homes are not able to undergo renovations to add an entire space devoted to play.

Play Tools

The solution needs to be a play tool that allows children to transform whatever environment they are currently in to a space that allows more opportunities for unstructured play. Children already have innate

senses of creativity and wonder as they explore the world around them. In the hands of a child, a play tool can combine the strengths of a play accessory and an environment.

The first steps were to research and observe ways that items in the home already offer such a solution. The living-room blanket fort is an excellent example of this type of play. Children can turn an ordinary room into a creative environment by collecting couch cushions and blankets and building their own play environment. Unfortunately, blanket forts only provide a temporary environment as the parents eventually need to put the room back into order.

Solution

An interesting solution emerged while combining some of the more intriguing forms from the earlier block explorations with the understanding of play environments. Oversized blocks promoted open play while also changing the environment. With a large block, a child uses more than his or her hands to play.

While observing the children play, the student noted that one particular block set seemed to be more popular than the others. It was made from two unique block forms that changed the way the blocks could be stacked and assembled. When a variety of sizes were produced, the children began to make walls to hide behind or platforms to use other toys on. Because the angled blocks stacked differently than normal square blocks, the children continued to use them in creative ways long after their initial encounter with them.

When small versions of this block were presented to children, they started by building structures and learning how the blocks worked. Eventually the play turned to more imaginative games, where the children play-acted stories in the miniature block landscape. The boys often began throwing the blocks at the towers they had built, and then they began to build fortresses for themselves.

In order to promote rough-and-tumble play, large versions of the blocks were made with dense foam cores to support the weight of a child. The cores were then covered with padding and soft, durable fabric for better comfort and safety. The fabric also added an element of friction between blocks, allowing children to build arches and tilted towers. The blocks were named "Kilter."

The Kilter blocks become integrated with the environment by becoming usable pieces of furniture. Block furniture always stays out in a room, allowing the child free access and charge over his or her play. The odd forms force even parents to experiment to understand the opportunities for play rather than telling the child how to use them properly. The blocks are also non-representative to allow the child to use his or her imagination to put them to use rather than relying on prescribed function. Also, as furniture, the blocks can be integrated into the daily life of a child, whether he or she is sitting to play videogames, reading a book, or talking with others.

Validation

In this study, the student observed several children playing with the Kilter blocks. In most cases, the children began with rough-and-tumble play by balancing on the blocks or stacking them and climbing around them. The next stage became more creative as the children tried to see what structures they could produce with the odd forms. They used teamwork to share the limited number of blocks. Some children even assigned certain blocks to everyone, leaving the remaining ones as communal extras. Eventually, the blocks became the stages for their other toys as they pulled out action figures to play on the blocks.

The blocks were shown at two public venues, where they were warmly received by all the children who happened to see them. At one point, there were more children than blocks, and yet they were all finding ways to play. They began to use the blocks in more ways than any of the adults had imagined, and they enjoyed showing their parents what they could do. Some parents even joined their children by reclining on the block furniture while the children played around them (Figure 2).

FIGURE 2
CHILDREN PLAYING ON KILTER BLOCKS

CONCLUSION

The term used in the industry for the success of a toy is "play value." The term is frequently employed in the field of child development for the assessment of toys. When they are fun and engaging, playthings and spaces are said to have play value; those that are quickly discarded or are considered uninteresting do not. In short, objects of play must be compelling and must encourage the child's involvement in order to have true play value (Newstead, 2004). Based on the positive results from the study, Kilter blocks have play value.

There are several avenues of further exploration. These include making further revisions and refinements to the blocks themselves, seeking a means of production, and exploring other "play tool" concepts.

Ideas for further revisions arose while observing children play with the blocks and overhearing their comments as they played. For example, with a set of eight blocks, a group of children divided them evenly and shared the extras while voicing their wish to have more. Perhaps a number of smaller blocks could be included with the set to expand the opportunities for group open play. The student also observed that children liked to stand on the teetering blocks and often fell unexpectedly. By reducing the density of the foam cores so that children would compress the blocks when standing on them, the blocks would be less likely to cause injury.

The interest in the blocks has led to discussion on making them available to the public. A number of home- and office-furnishing designers and retailers have shown interest in the blocks and have encouraged production. With the simplicity of construction, a number of options are available, including crowdfunding a product launch or seeking a licensing retailer such as IKEA.

Further explorations may still identify other opportunities for unstructured play with children. Adults also benefit from unstructured play and may appreciate a "play tool" as much as children do. After sharing the Kilter blocks with several office designers, the designers explained that similar solutions are becoming popular in the workplace. Kilter blocks address children in the home, but there are many other environments and people that could also benefit from similar solutions.

DISCUSSION

The department of design is trying to understand the relationship between creativity and play. Can play be a tool in understanding and continuing to develop creativity course curriculum, content, and delivery methods? Can a playful attitude be developed in students that will help motivate them and encourage them to uncover the power of curiosity and discovery? Can a playful environment increase socialization, cooperation, and collaboration between students? Can a playful approach foster more energy and fulfillment

in their work efforts? This research will not have a big impact on the larger educational system or paradigms, but it can have the power to change the department of design and its approach to creativity in classrooms. Department of design can help students across our campus to unlearn some of the non-creative behaviors they have been taught. This is important because creativity is a mindset for our day and can help find innovative solutions to some of the world's most intractable problems.

REFERENCES

Amabile T. (1988). A model for creativity and innovation in organizations. *Research in Organization Behaviors*. Boston, MA: Harvard Business School Publishing.

Best, J. (1998). Too much fun: Toys as social problems and the interpretation of culture. *Symbolic Interaction, 21*(2), 197–212.

Bowler, P., & Linke, P. (1996). *Your child from one to ten*. Camberwell, AU: ACER Press.

Cartwright, S. (1988). Play can be the building blocks of learning. *Young Children*. Retrieved from http://courseweb.edteched.uottawa.ca/lsr3115/Pdf/lecture3.pdf

Csikszentmihalyi, M. (1996). *From creativity: The work and lives of 91 eminent people.* New York, NY: HarperCollins.

Csikszentmihalyi, M. (1997). *Creativity: Flow and the psychology of discovery and invention*. New York, NY: Harper Perennial.

Elkind, D. (2007). *The power of play*. Philadelphia, PA: Da Capo Press.

Frost, J. (1997). Child development and playgrounds. *Parks and Recreation, 32*(4), 54–56.

Garvey, C. (1990). *Play* (2nd Ed.). Cambridge, MA: Harvard University Publishing.

Getzels, J.W. (1975). Problem finding and the inventiveness of solutions. *Journal of Creative Behaviors, 9*(1), 12–18.

Ginsburg, K. (2007). The importance of play in promoting healthy child development and maintaining strong parent-child bonds. *American Academy of Pediatrics, 119*(1).

Gray, P. (2011). The decline of play and the rise of psychopathology in children and adolescents. *American Journal of Play, 3*(4), 443–463

Gray, P. (2013). *Free to learn*. New York, NY: Basic Books.

Guilford, J.P. (1968). *Intelligence, creativity, and their educational implications*. San Diego, CA: Robert R. Knapp.

James, W. (1907). *Psychology*. New York, NY: Henry Holt & Company.

Johnson, J., Christie, J., & Wardle, F. (2005). *Play, development and early education*. Boston, MA: Allyn Bacon.

Kelly, T., & Kelly, D. (2013). *Creative confidence*. New York, NY: Crown Business.

Koestler, A. (1964). *The act of creation.* St. Ives Place, UK: Clays Ltd.

Land, G., & Jarman, B. (1993). *Breaking point and beyond.* San Francisco, CA: Harper Business.

Newstead, B., Moran, C., & Wright, S., Colby. (2010). *Next Generation Learning: Can We Crack Four Problems to Unleash Quality Education for All?* Bridgespan Group. Retrieved from http://www.bridgespan.org/next-generation-learning.aspx?resource=Articles

Postman, N. (1969). *Teaching as a subversive activity*. New York, NY: Dell Publishing Company.

Robinson, K. (2010). RSA Animate: Changing education paradigms. Retrieved from https://www.youtube.com/watch?v=zDZFcDGpL4U

Runco, M. (1994). *Problem finding, problem solving, and creativity*. Norwood, New Jersey: Ablex Publishing Corporation.

Sawyer, K. (2007). *Group genius*. Cambridge, MA: Basic Books.

Seidel, G.J. [STANDS4 LLC] (2015). *George J. Seidel Quotes*. Retrieved from http://www.quotes.net/quote/17440

Sutton-Smith, B. (1997). *The ambiguity of play*. Cambridge, MA: Harvard University Press.

Talbota, J., & Frost, J. (1989). Magical playscapes. *Childhood Education, 66*(1), 11–19.

Vernon, P. (1970). *Creativity: Selected readings*. Middlesex, UK: Penguin Publishing.