OUTDOOR PLAYING = OUTDOOR LEARNING

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Presently, public schools have given very little thought into how unstructured, outdoor play can create a vibrant learning environment for the K-12 student. Even if a public school does think about the possibilities, there can be several roadblocks: 1) What is a viable playground design?; 2) Will the playground take away from learning in the classroom?; and 3) How much will the playground cost? The present trend is for schools to put more time and energy into the classrooms and other indoor spaces instead of the outdoor spaces. If a school does think about the outdoor space, they still place more emphasis on the use of very traditional playground equipment or fields with very traditional sport settings than more nature driven play spaces.

Where does the outdoor environment fit with school learning? Where have we gone wrong?

At the expense of play, U.S. public schools have placed significant pressure on students and teachers alike with a pursuit of standardized learning. Most public elementary school principals in the United States have been pressured to minimize recess to none or one daily[1] and physical education to 2-3 times weekly in order to capture the maximum number of minutes required by the school district in language arts, math, science and social studies daily. Interestingly, schools have seen an increase in bullying and other social and emotional issues throughout the day in the classroom, hallways and recess areas which inhibit learning. We continue to believe that the cognitive health of our children is much more important than the physical and social/emotional well-being of our children. This model continues to emphasize technology and standardized learning rather than incorporating innovative and creative, outdoor play environments.

Understanding the relationship between movement and learning.

Numerous brain activation studies[2,3,4] found one or more positive associations between physical activity/recess and indicators of cognitive skills and attitudes, academic behavior and/or academic achievement. Some of these brain activation studies have also shown that children and adolescents who are moving throughout the day allocate more cognitive resources to a task and do so for longer periods of time[3,4,5]. Furthermore, children pay better attention to their content/subjects,[6,7] are less likely to be disruptive in the classroom[8], feel better about themselves[5], have higher self-esteem, less depression[9] and less anxiety when they have been physically active[2,9,10]. If all of this research is true, then where are the innovative outdoor learning spaces? How often should children be outdoors to explore and play?

Play defined.

Many researchers around the country believe that play during the school day should be offered at least once daily as an unstructured, outdoor break where the experience is whatever the child wants it to be. It could be role play, physical activity, sitting and reading, socializing, imagining or just reflecting[7,10]. This is the most important time when children can "regroup" and refocus their energies[11]. It's a time that affords children the ability to expand their imaginations and be creative. The Finnish educational system believes that play is the most important part of the school day for this reason. They believe children should be outdoors in an unstructured play environment for 15 minutes every hour. A project called LiiNK (Let's inspire innovation 'N kids)[12] has been testing this belief by assessing the feasibility of four outdoor, unstructured breaks for play throughout the school day in four Texas public schools. So far, positive results have been very evident from observing children during these outdoor play breaks. If this is working, what should play spaces look like?

What do children want and need for outdoor play environments?

We have found in the two years of observing children in multiple recesses daily, that the children love to run, chase, roll, jump, climb and swing. They also love to make up games and play differently at the different recess times. We also see the children sit for one to two minutes at any given time in the 15 minutes and then hop right up and begin to run again when their bodies are ready. They don't stay quiet for very long. We also find that the children do not need much in the way of traditional equipment. They love movable parts like noodles and blocks to stack and climb on. They also love more natural areas like trees to climb, logs to sit or balance on, rocks to climb or sit and then places to draw on a chalk board, play music or act/pretend play. They love hills more than stationary equipment and they could use different spaces for very different things than what adults might do. Overall, these play areas create a very lively place for children to move and play in an unstructured environment. The play environment can be brought indoors when the weather is uncooperative. So keep the options open for where play spaces are designed within the school and outside.

Goals for designing an innovative play space in a school setting.

Designing play areas takes careful planning and understanding of the site, the building floor plan, and more importantly, what students like. In order to best tackle designing these spaces, it is important to understand what the overall goals of play area design are.

1. **Must be fun** – there is no point in providing a play area that does not invite students to play and have fun. The play areas need to be colorful and inviting, with different activity areas for the students to play.

2. **Must be diverse and varied** – just like we learn in different ways, students play in different ways. The play area needs to allow for diversity in order to appeal to all students. Well-designed play areas include ground level and elevated activity opportunities, allowing kids to sit, stand, roll, climb and stretch, which engages the brain in different ways. In addition, play areas should include one or more of the following elements – sand, water and hills.

3. **Must allow for physical challenges** – play areas should provide challenging tasks and activities for kids. We know that crawling is one of the most complicated moves a person learns, as it requires careful coordination of arms and legs. Playgrounds should have elements that invite creativity, coordination and strength.

4. **Must allow for continuous learning** – play areas that include opportunities for exploration allow kids the chance to play in different ways every day. Mazes and tunnels, chalk boards, musical instrument stations and climbing equipment provide great opportunities for improvisation and discovery that help students become more creative thinkers.

5. **Must be safe & accessible** – the design of play areas should always have safety and accessibility as a priority, and material choices and location should be vetted carefully to ensure the play area is as safe as possible, and accessible to all students.

6. **Can be anywhere** – play areas should not be limited to the outdoors. Designers should plan play areas in and outside of the building, to give students more chances to move throughout the day.

Designing the innovative play space.

In order for play areas to be successful, planning needs to start early. A designer can minimize site acreage and save construction costs if they are allowed to design the play areas in conjunction with the school facility. This is a shift in traditional design process, as play areas are oftentimes delegated to PTA groups or purchasing departments with the end result being simple structures with limited diversity. Furthermore, these structures can be hard to use due to lack of physical area to move and play or lack of accessibility from school building to play area. The play area design should be included as part of the project design development, so that the site can be planned correctly for access, drainage and play area diversity. In addition, access from the building to the play areas can be planned, so that high traffic hallways for outdoor recess use will be designed with the correct width, and exit doors can be equipped with card access readers for ease of entry at the end of recess. Consideration of drinking fountains is a high priority so that students returning to class have quick access to water prior to school building entry.

Sand pit with different textures and different creative paths

Early play area planning also allows for the inclusion of items such as hills, sand and water, which are favorites of children, allowing them true opportunities for unstructured play.

When designing the whole site, berms and small hills can be planned, and separate activity areas can be created. These hills can be designed with a variety of landscaping and turf, which can result in great play areas that extend the learning experience.

Incorporating water features in play areas to some may appear costly, but it can be done very simply and sustainably by providing a cistern for collection of rain water, which can then be used by the kids for playing, and for watering the gardens around the school. According to Wyatt & Maddaugh13, water play fosters social engagement and creative problem solving, as well as connecting them to the natural world through seasons and weather patterns. Water can be contained in channels, or can be added by simple fountains that are activated by teachers when the area is accessed. The challenge to designers is to successfully weave water into the site by creating engaging play environments, giving students the opportunity to change their play environment.

Library – exploring white space

Play environments should extend beyond the actual play areas to include all other exterior accessible areas such as pathways, corridors, gardens and open fields. All of these spaces should be fun and engaging and include tactile and visual activities to engage students. Simple stepping platforms for climbing and balancing, slides in the sides of hills for coordination, swings hanging from trees for height and balance management, hammocks between posts or trees for nature enjoyment, chalk boards on the sides of berms for creativity are all engaging for the outdoors. School architects need to remember that although outdoor play areas are essential, weather conditions such as high ozone levels or inclement conditions can prevent outdoor play from taking place some times of the day or some days of the week.

Trinity Valley School outdoor play area for K-4 grades

Therefore, school architects must also carve out interior spaces for additional play mobility throughout the day and when exterior play areas are not accessible. Areas such as hallways and stairs, libraries, classrooms and large multi-purpose rooms (i.e., auditoriums, cafeterias, and gyms) can be designed with play in mind.

The goal of these spaces is to get students up from the seated position and demonstrate concepts, share ideas and become fully engaged in their learning. Space design ideas include furniture selections, writeable walls, levels of travel, color selections throughout the building and accessible areas to play within the building

Weave in areas for creative experiences

The classroom spaces can definitely be designed to invite movement and play. Furniture can be selected in the initial design process that is oftentimes relegated to the end of the construction project, and is often completed by people that were not involved in the design process. Furniture that is selected with play and movement as a goal will include components that are easy to move around and can be used in many diverse and creative ways. Ultimately, square footage can be optimized and play can be rooted within each classroom environment if furniture and movement goals are addressed when first designing the layout.

Design every space with play in mind.

Every component of the building and site should be designed with play in mind, making the entire facility fun and exciting. Cafeterias and gyms should include outdoor play areas with canopies and blocks and benches for extended play. Walkways and pathways should include surprise elements such as slides and tunnels to incite exploration and learning. Each component can be carefully planned and designed so that they are safe, accessible, and most of all fun. Providing the physical environment to support activity and play will result in active learning which promotes academic achievement as well as critical thinking, creativity and problem solving skills. ●

REFERENCES

1 Robert Wood Johnson Foundation (RWJF; 2013). Childhood Obesity: The Challenge. Retrieved August 2013, from http://www.rwjf.org/en/about-rwjf/program-areas/childhood-obesity/the-challenge.html.

2 Biddle, S. J., & Asare, M. (2011). Physical activity and mental health in children and adolescents: a review of reviews. *British Journal of Sports Medicine*, 45, 886–895.

3 Sahlberg, P. (2015). Finnish lessons 2.0: What can the world learn from educational change in Finland? New York: Teachers College Press, pp. 1-264.

4 Verburgh, L., Konigs, M., Scherder, E. J. A., & Oosterlaan, J. (2013). Physical exercise and executive functions in preadolescent children, adolescents and young adults: a meta-analysis. *British Journal of Sports Medicine*. DOI: 10.1136/bjsports-2012-091441.

5 Ickes, M.J., Erwin, H., & Beighle, A. (2013). Systematic review of recess interventions to increase physical activity. *Journal of Physical Activity and Health*, 10, 910-926.

6 Howie, E.K., & Pate, R.R. (2012). Physical activity and academic achievement in children: A historical perspective. *Journal of Sport and Health Science*, 1, 160-169.

7 Murray, R., & Ramstetter, C. (2013). The Crucial Role of Recess in School. *Pediatrics*, 131:183-188.

8 Turner, L., Chriqui, J.F., & Chaloupka, F.J. (2013). Withholding recess from elementary school students: Policies Matter. *Journal of School Health*, 83, 533-541.

9 Entin, E. (2011). All work and no play: Why you kids are more anxious, depressed. Retrieved from: www.theatlantic.com/health.archive/2011/10/allworkandnoplay.

10 Pellegrini A.D., & Bohn-Gettler, C.M. (2013). The benefits of recess in primary school. *Scholarpedia*, 8(2), 30448. doi:10.4249/scholarpedia.30448.

11 Jarrett, O., & Waite-Stupiansky, S. (2009). Recess—It's Indispensable! *Young Children*, 64(5): 66-69.

12 Rhea, D.J., Rivchun, A.P., & Pennings, J. (submitted, 2015). The LiiNK Project: Implementation of a Recess and Character Development Pilot Study with Grades K & 1 Children. *Journal of Physical Activity and Health*.

13 Wyatt, P. & Maddaugh, A. (2013). Waterplay- Weirs, Pumps, Channels and Gates. *Landscapes*.

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