The Impact of a Nature Based Space on Creativity in Children in Urban Areas

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Introduction

- Play is defined as an intrinsically motivated, internally controlled and freely chosen activity[1].
  - ~ Play often involves exploration, humor, risk-taking, imagination, contests, or celebrations[1].
- As a primary occupation of childhood, play is essential for developing performance skills that support later participation in school, work, and social life[1].
- A systematic review of nature-based play identified positive impacts on children's physical activity and enhanced imaginative and dramatic play[4] which are key components of creative thinking.
- Critical thinking is vital for success in society contributing to innovative thinking, enhancement to business development, effective communication, and to inform public policy[9].
- Emerging evidence suggests creative thinking in children has been declining over recent decades[5].
- Researchers have attributed this decline, and decreased time outdoors, to various factors:
  - ~ increasing screen use
  - ~ reduced access to safe green spaces
  - ~ heightened parental concerns about safety [2,3,4,6,7].
- As outdoor play decreases, so do the associated developmental benefits:
  - ~ opportunities for creativity, problem solving, and divergent thinking.
- Additional studies indicate children often engage in highly structured, adult-directed activities limiting time for unstructured, freely chosen play [5,9].
- Understanding how to preserve and promote creativity in children is essential.
- This study examined the impact of a six-week unstructured nature-play program on students' self-efficacy related to creativity.

Methods

Location:
- Cornerstone Elementary, Birmingham, AL

Inclusion Criteria:
- Children aged 7 and 8 years old
- Enrolled at Cornerstone Elementary
- English as a primary language
- Children who live in an urban community with limited access to green spaces

Participants:
- 13 total (10 girls; 3 boys)

Data Collection:
- *The Creative Self-Efficacy Scale for Children and Adolescents* (CASES) administered pre and post program.
- Post-program focus group to gather feedback on physical aspects of nature-space and experience

6 Week Program:
Children engaged with nature-space 3x/week for 30 minutes
5 sensory boxes were built containing water, sand, mulch, sticks, clay
Seeds were planted in garden bed (asters, marigolds, pansies, lettuce, carrots, and broccoli)
Observed children engaging with the nature space, taking note of the frequency of creative behaviors based on Feist's model of creativity.

Results

Creative Self-Efficacy Scale for Children and Adolescents
- The results of a paired samples t-test show non-significant increases between overall creative thinking based on the pre and post data from each question.
- The p-values ranged from 0.103 - 0.859.
- *Figure 1* shows overall averages of pre and post answers for participants.
- Questions 2, 5, and 6 showed the most increases pre and post. Questions 7, 8, and 9 showed a decrease in pre and post scores.

Observed Behaviors
- Most common behavior observed was 'persistent behavior.'
  - ~ After a child found something new, they would proceed to engage in the same activity for the rest of the day and a few of the following days to come until they discovered another activity to participate in.
- The least common behavior noted was risk taking.
  - ~ It was noted most participants followed what their peers were doing rather than taking risks to do other activities.

Results continued

Figure 1: Pre and Post averages of CASES questionnaire

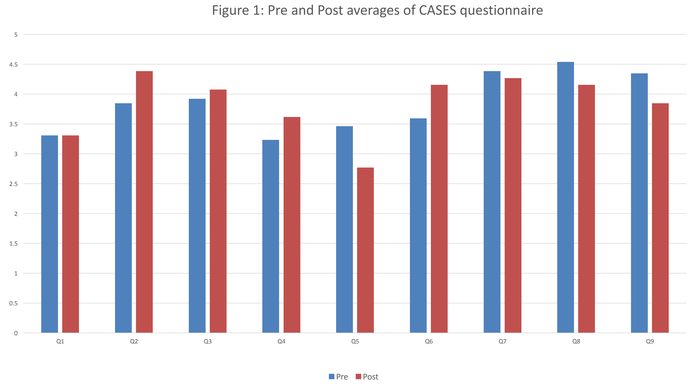
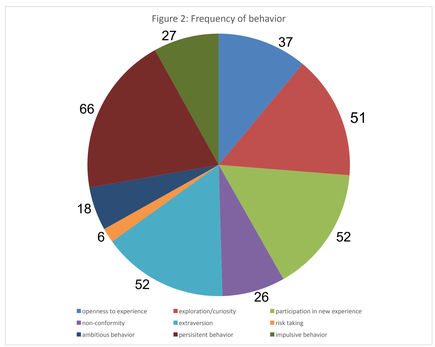


Table 1: Questions in the Creative Self-Efficacy Scale for Children and Adolescents (CASES)

I make up new stories faster than my friends
When we are playing, I am the first to say which game we are going to play.
I love creating games.
When I have to invent the end of a story, I think of many possible endings
When I want to tell a new story, I think of ones I have already heard.
I can tell a new story from dreams I have had.
I can do a puzzle even when it is hard.
I can learn how to build something (toy, LEGO, etc.) on my own.
I still enjoy playing with something (toy, LEGO, etc.) even after spending an entire afternoon playing with it.

Figure 2: Frequency of behavior



Discussion

- Participation in the 6-week program appeared to produce minimal increases in students' self-efficacy related to their creativity, and in some areas, post-program scores were slightly lower.
- Despite this, observational data provided valuable insight into students' creative engagement.

Discussion continued

- During outdoor play, students demonstrated strong divergent thinking skills, generating new activities and variations while using the same set of materials.
- None of the students displayed signs of boredom during outdoor sessions, and many expressed a desire for additional time outside.
- Feedback from the focus group further supported observations; all students reported the activities were enjoyable and made them feel good.

Implications:
- Play is a child's primary occupation and is essential for development of performance skills [1]
- Study adds to research on the importance of spending time outside and fostering creativity in children.

Limitations:
- Majority female population and only from one facility.
- Mixed attendance throughout sessions and short duration of study.
- Non-standardized assessment used to collect pre- and post-data.
- **Future Directions:**
- Implementing a control group, longer duration of study
- Incorporate nature elements into OT treatment
- Allow children to lead their OT sessions based on prompts to aid in developing their creative thinking and decision-making skills

Conclusion

- This research examined how nature-based play can increase creative thinking in children, furthering more engagement in the crucial development of play.
- While participation in this 6 week-program only showed minimal increases in student's self-efficacy related to their creativity, the qualitative and observational data revealed meaningful indications of creative engagement.
- Overall, unstructured nature-play appeared to provide value by promoting enjoyment, exploration, and flexible thinking, key components of creative development according to the OT framework and pre-existing research [1, 5, 6].
- Schools should consider incorporating more nature-based unstructured free play in their curriculum.

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