

# **The Efficacy of the “Think Out of Bounds” Curriculum on Resourcefulness and Creativity**

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**Abstract:** In this report, we review the effectiveness of Uncharted Play's *Think Out Of Bounds (TOOB)* curriculum as an intervention tool for building creativity and resourcefulness within school-aged populations (5-19). In order to analyze the efficacy of *TOOB*, students completed a survey before and after curriculum participation. Throughout the survey, students self-evaluated their capacity for creativity and resourcefulness. The study concludes that the curriculum has a statistically significant effect on school-aged populations in increasing their self-perceived capacity for creativity and resourcefulness. The quantitative evidence supplements existing empirical research detailing the importance of creativity and resourcefulness in childhood development.

**Intervention Study:** The intervention tool used to measure change in self-perception related to creativity and resourcefulness was Uncharted Play's STEM and creative thinking curriculum, *Think Out Of Bounds (TOOB)*. *TOOB* teaches principles in creativity, STEM, social innovation, and human-centered design. The curriculum also culminates in a social solutions design sprint, where students create a rapid prototype aimed to serve as a solution to a problem specific to their community.

We define resourcefulness as a set of cognitive-behavioral self-control skills for coping with stress to maintain quality of life ([Wang and Zauszniewski 2017](#)). We define creativity as the ability to come up with ideas that are original or novel and useful or appropriate ([Thomas and Chan 2013](#)). We chose to measure these two characteristics based on their importance in and beyond the classroom. Resourcefulness has been known to increase quality of life, which may include adaptive functioning, life satisfaction, perceived health, psychological well-being, physical functioning, and positive health factors ([Zauszniewski 2016](#)). Moreover, individuals high in learned resourcefulness are better at controlling negative emotions and managing stressful tasks ([Akgun and Ciarrochi 2010](#)). Creativity has been long considered the most essential skill for accomplishment. Moreover, in a 2010 survey of 1,500 chief executives in 33 industries, "creativity" was the factor most crucial for success ([Pappano 2014](#)). Additionally, skills in creativity are necessary in attaining higher employment and economic achievement, and coping with increased competition ([Shaheen 2010](#)). This study aims to demonstrate the effectiveness of Uncharted Play's *Think Out Of Bounds* curriculum as an intervention tool for building creativity and resourcefulness within school-aged populations (5-19).

**Methods:** Each participant reported their self-perceived creativity and resourcefulness on identical surveys before and after the intervention. Students ranked themselves based on how much they identified with each statement on the survey. The rating scale was defined as follows:

- Strongly Disagree
- Disagree
- Neutral
- Agree

- Strongly Agree

Data was analyzed using a two-tailed paired *t*-test. Our hypothesis was that the any observed positive change is due to *Think Out Of Bounds* acting as an effective intervention in building students' self-perception of creativity and resourcefulness. The null hypothesis assumed that any difference pre-to-post-survey was due to chance.

Our study eliminated any student that “strongly agreed” with any sentiment posed during the pre-survey in order to specifically identify any increase in self-perception of creativity and resourcefulness for students that did not come into the program with the maximum-level of positive self-perception.

Students rated themselves on four different statements.

The first statement posed to students was, “**I am a creative person**”. Based on our parameters, we were able to count the data from 136 students. We reject the null hypothesis stating that any increase in self-perception is due to chance, meaning that the intervention was statistically effective in increasing students' self-perception in their creative abilities. The differences between pre- and post-intervention were statistically highly significant as  $P < .001$ .

The second statement students were posed was, “**My creative contributions are valuable**”. Based on our parameters, we were able to count the data from 165 students. We reject the null hypothesis stating that any increase in self-perception is due to chance, meaning that the intervention was statistically effective in increasing students' self-perception in their creative abilities. The differences between pre- and post-intervention were statistically highly significant as  $P < .001$ .

The third statement students were posed was, “**I can find solutions to challenges in my life**”. Based on our parameters, we were able to count the data from 148 students. We reject the null hypothesis stating that any increase in self-perception is due to chance, meaning that the intervention was statistically effective in increasing students' self-perception in their creative abilities. The differences between pre- and post-intervention were statistically highly significant as  $P < .001$ .

The fourth statement students were posed was **“I can have a positive impact on the world”**. Based on our parameters, we were able to count the data from 149 students. We reject the null hypothesis stating that any increase in self-perception is due to chance, meaning that the intervention was statistically effective in increasing students’ self-perception in their creative abilities. The differences between pre- and post-intervention were statistically highly significant as  $P < .001$ .

**Conclusions:** We were able to determine through quantitative analysis that *TOOB* is an effective intervention in increasing students’ self-perception in creativity and resourcefulness, and that any increase is due to *TOOB* rather than to chance. Increasing creativity and resourcefulness could have lasting positive implications in adolescent development, enhancing quality of life, emotional control, employability, and overall success.