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## Destination Imagination: Creativity in a World of Complacency

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## **Introduction**

Albert Einstein once said, “Imagination is more important than knowledge. For knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution.”<sup>1</sup> In a world that focuses on test scores and statistics, we often lose sight of teaching students creative processes that can lead to increased success later in life. Destination Imagination holds tournaments for students in grade levels Kindergarten through University that rely on the use of critical thinking and creative problem-solving. Two-hundred thousand students annually spend months working as teams to solve a challenge that encourages development of out-of-the-box thinking. The tournament is split up into seven main challenges that involve solving a problem with a combination of technical, fine arts, and scientific solutions.

### **What is Destination Imagination?**

Destination Imagination (DI) was formed as a not-for-profit entity in 1999 with a mission “to develop opportunities that inspire the global community of learners to utilize diverse approaches in applying 21<sup>st</sup> century skills and creativity.” In a nutshell, DI aims to help encourage creativity in the younger generations. To reach this goal, they host 200 tournaments globally where students can showcase their creative talents as they

compete against other students from various regions, states, and countries. Destination Imagination has a vision of being “the global leader in teaching the creative process from imagination to innovation.”

Beginning every September, 200,000 students worldwide choose to solve one of seven different challenges that are created and published by Destination Imagination. Each challenge changes every year but stays within a certain category: technical, scientific, structural, fine arts, improvisational, or service learning. The students have until February to come up with an eight minute presentation to reveal their solutions to appraisers at the regional level. The top scoring teams at Regionals advance to the affiliate tournament (state or country) and then onto Global Finals. Global Finals feature teams from 48 different US states and 30 different countries throughout the world.

Most of the 38,000 volunteers are made up of educators or alumni. These volunteers are trained on the different challenges they might be appraising and different techniques for identifying and quantifying creativity. DI seeks to promote out-of-the-box thinking and innovative solutions. Appraisers have the opportunity to see incredible talent in these students including costumes and props made of recycled materials, presentations done in complete rhyme or original verse, and unique new uses for everyday items. At the end of each tournament, appraisers can

choose to nominate teams and individuals for special awards such as, the Spirit of DI Award (for outstanding teamwork, volunteerism, spirit, and sportsmanship), the DaVinci Award (for outstanding creativity), and the Renaissance Award (for outstanding design, engineering, execution and performance). This is just one more way DI commends the efforts of these students for all of their hard work and creativity.

### **Bigger Picture Advantages**

While creativity is crucially important, it is not the only attribute gained by students participating in Destination Imagination. One of the clearest benefits to all students involved is improving problem solving skills. In the four months spent developing a solution to the chosen challenge, they also find many solutions that are not used in the final presentation. These trial and errors are an important part of the problem solving process because they serve as examples to learn from for future endeavors, both in DI and in real life situations.

Many times, the seven-member DI team does not know each other, but was placed together because of their interest in the program. This selection process gives students a chance to learn team dynamics over a longer period of time than they are usually given in a typical classroom setting for group projects. From three to nine months, each team must

learn to cooperate with one another, use each other's strengths, and present a collaborative solution to an intricate challenge. The tournaments allow various occasions where the teams can be awarded points based on the teamwork of the students. When a team consists of creative, technical, and artistic students, the organization and path to completing the challenge can often be a challenge in and of itself. This aspect of DI presents itself as being a great tool for students to realize what their strengths and weaknesses are as leaders and team members.

The positive energy that embodies the tournaments is a true testament to the sportsmanship that Destination Imagination encourages. The volunteers and appraisers do an excellent job of praising the positive aspects of the solution, to the team, and encouraging them to continue their involvement. There is zero tolerance for any negative antics between team members, team managers, and/or parents at any level of competition. The award ceremony of each tournament really focuses on celebrating each team as a group and the overall goal of creative fun. In the end, there is always a winner but in DI, it feels like there is never a loser. The main goal is for the students to leave the tournaments without any regrets of the time spent on their solutions and instead to focus on the skills and memories gained.

## **Program Evaluation**

In August 2009, Destination Imagination contracted University of Virginia, Curry School of Education to conduct an independent evaluation of the program's effectiveness, impact, and participant satisfaction in relation to creative problem-solving, creative and critical thinking, teamwork, and leadership.<sup>2</sup> To test these areas, the evaluation team used three assessments: Cornell Critical Thinking Test – Level X (CCTT), the Torrance Test of Creative Thinking – Verbal (TTCT), and a performance task called Monkey in Motion (MiM). These assessments were administered in Virginia, Illinois, Texas, and California where Destination Imagination has been fully developed within school systems.

For the purposes of the tests, two groups were created: one group of participants included kids from DI teams and the second group were composed of kids that had never been in a DI program. The TTCT – Verbal was a divergent thinking test used to determine the quantity and quality of creative ideas produced from each test taker. The test included 251 middle and high school students born between 1995 and 1999. Of these students, 113 had DI background and 138 were considered Non-DI. It was noted that many of the students in DI and Non-DI groups were from school programs that placed them in advanced school programs and were

identified as gifted. Divergent thinking in this test includes three components of creative including: Fluency (ability to generate creative ideas), Flexibility (ability to generate conceptually different ideas and solutions), and Originality (ability to create unique ideas). The mean of these scores were averaged together to create a score called the Battery Average. Using independent sample t tests, results from the TTCT – Verbal showed a statistically significant ( $p < 0.5$ ) higher mean scores in the Battery Average (M=112.19; M=106.6) and Flexibility (M=107.29; M=101.28) portions of the tests for students who participated in the DI programs when compared to Non-DI students. The other two tests, Fluency (M=110.06; M=104.7) and Originality (M=118.81; M=113.89), were not statistically different. It should be noted that students in DI from California had higher mean scores in all areas than those that did not participate in DI. DI students from the other states did have higher scores than the non-DI students, but were not statically significant.

The CCT – Level X test was used to determine if the level of critical thinking skills in students who participate in DI were higher than those that had not participated in DI. For the CCTT test, 102 DI and 117 non-DI students were used following a similar characteristic group as those used for the TTCT test. The test showed statistically significant ( $p < .05$ ) higher mean scores for DI students when compared to non-DI students (M =

47.02;  $M = 42.85$ ). DI participant scores were higher in all states where the test was taken, but only statistically significant in Virginia and California.

The Monkey in Motion test was used to determine if DI contributed to the development of creative problem solving and teamwork skills when compared to those that had not participated in DI. The MiM test involved students in groups, of two to seven, working together and using a variety of materials to develop a creative means of propelling a monkey along the length of an eight-foot string. There are multiple solutions to the problem. Teams were given a time to develop a solution, the opportunity to describe the solution, and a five-minute period to attempt to solve the problem. This method is similar to the Instant Challenge used in Destination Imagination.

The kids for the MiM test were sampled from the Virginia, Illinois, and Texas and consisted of 59 DI participants and 46 non-DI participants. The 105 students made up 23 teams with members of two to seven. The test had five scores being tabulated: Creativity (Cr), Problem Solving (PS), Critical Thinking (CT), Teamwork (Tw), and Distance (Di), with final Total Score (Ts) that represented an aggregate of the five scores. The scores ranged from 1 to 5 for each portion for a max Ts of 25. The results for the test showed statically significant ( $p < .05$ ) higher mean scores for



all scores, including Total Score, except for Teamwork for DI participants (M TS = 18.75, M Cr = 3.64, M PS = 3.8, M CT = 4.08, M Di = 3.32) when compared to non-Di participants (M TS = 15.02, M Cr = 3.04, M P S = 2.74, M CT = 3.04, M Di = 2.54, M Tw = 4)

The above results from the three tests showed higher scores for students that participate in DI than those who had not. The results, however, have some limitations. For one, students that wish to participate in DI are more likely to have higher levels of creativity and be more adept at problem solving and critical thinking. There was no test conducted for students before and after participating in Destination Imagination to determine if there was a statistically significant increase in these skills. This report made it clear that without further in-depth testing it is unable to give a definitive answer as to whether Destination Imagination increased the development of these skills.

### **Design Thinking**

As a result of No Child Left Behind, classrooms are forced to focus on standardized tests to streamline assessments of not only each student's abilities, but also the effectiveness of the teacher. A group of researchers worked together to formulate a curriculum that focused on Design Thinking in a paper titled, "Destination, Imagination and the Fires Within:

Design Thinking in a Middle School Classroom.”<sup>3</sup> Design Thinking is an alternative to standardized tests that instead focuses on complex problems that do not have straightforward fill-in-the-blank answers. For this project, researchers designed a curriculum for a middle school geography class that incorporated Design Thinking.

The Design Thinking process, developed by the Hasso Plattner Institute for Design, follows six areas of the design process. It begins with understanding, where the students must use their resources (experts, multimedia, and research) to develop their background knowledge of a subject. The next step is observation, where students learn to interpret the information they have found in their background research to help develop a form of empathy for the subject matter. This empathy helps the students recognize peoples’ needs and how they relate to solving the problem. Next, the students develop a point of view to focus their solution. Understanding where the problem lies and through what perspective to view it helps develop the purpose of the problem. Once a problem has been found and understood, the ideation phase begins. This phase is focused on brainstorming and teamwork where students work together to figure out possible solutions to the problem. This step leads into prototyping, where the students determine a way to show the solutions developed in the brainstorming process. This process works hand-in-

hand with the final process, testing, where each prototype is tested to determine its viability as a solution.

This set of processes was the driving force of the research. The site chosen for the project was a semi-urban area in San Francisco Bay area with grades K-3rd and 6-7th. The population was approximately 60% Latino, 30% African American, 9% Pacific Islander, and 1% white students. The class chosen for the research was a seventh grade geography class of twenty-four students. The students were split into groups and were taught the Design Thinking process and how it could be used with geography in the classroom. The groups were asked to use their surroundings to determine solutions to the geography problems and relate them to the problems found in the class. Each group went through every step of the process and presented their solutions at the end of the project.

The findings found three major themes in learning through the process. The first, Design as Exploring, focused on the methods that students participated in the classroom activities. Each group found different ways of exploring design that were shaped by their social interactions, purposes, and understanding of the design process. The students found through this exploration that they were agents of change and showed high levels of empathy in understanding human needs.

Looking at the systems within their school, the students began to understand how those participating within each system had the power to make change in one's environment, showing a development of empathy and understanding of human needs. As Ryan and Deci described, "The fullest representations of humanity show people to be curious, vital, and self-motivated. At their best, they are argentic and inspired, striving to learn; extend themselves; master new skills; and apply their talents responsibly."<sup>4</sup> When students realize that individuals have an impact on a system, they often begin to look at their surroundings differently and may soon learn of new opportunities and possibilities for themselves. This understanding is important for children at this developmental age and can be difficult for some, but its understanding reaches far beyond the design process and the classroom.

The second, Design as Connecting, focused on how students interacted within the groups and with one another. The adolescents learned about risk-taking, creative confidences within their own voice, and how to collaborate with other students. The classroom focused on the idea that every student's idea and voice was important and that everyone was an integral part in the solving of the problem. With an open atmosphere, students were more likely to take risks and become more confident within themselves and their own ideas. This self-confidence is

important as students begin to conform to their peers' norms, and one's creativity and voice may be stifled in response to the fear of not fitting in.

The last theme found was Design as Intersection, where students tried to find a link between Design Thinking and content learning. The findings of the project showed that there was little intersection found between the two. Students were found to have a weak foundation in Design Thinking and Geography. This is an important aspect of the project as the research team was hoping to find a strong link and show that Design Thinking could be used in the classroom as a new tool for teachers. The team concluded that for Design Thinking to prosper, students and teachers must have a strong foundation in the Design Thinking methods and in the content that they are learning for the link to prosper.

Destination Imagination, as an after school program, fills this problem found in Design as Intersection. Design Thinking was found to have positive effects on the students in their understanding of themselves and their surroundings, but fell short in the ability to use it as a driving force for learning in the classroom. Separating the two programs allows students to focus on the areas separately and grow a foundation that has the ability to connect the two. Destination Imagination is a program that follows the Design Thinking principles and gives problems that foster the

areas highlighted in the study. Students that are involved in the program are given a chance to grow with this foundation so that they may use it in the classroom, their home, and the outside world.

### **Closing**

The results of the studies did not have the ability to find a direct correlation with participating in Destination Imagination and increases in personal and cognitive development. There are too many factors to take into account to determine the true effect of DI within these kids' lives. Destination Imagination, however, can be seen as a program that encourages students to focus on and develop critical creativity skills that may not have had the chance to prosper in a normal school setting. Einstein finished his thoughts on creativity by saying, "knowledge is limited, whereas imagination embraces the entire world."<sup>1</sup> In this regard, considering the 1.5 million people that have been a part of Destination Imagination and the thousands of new participants each year, creativity is far reaching and has no plans on stopping.

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