Systematic Creativity in the Classroom

Case Study (Grade 5/6) – June 29, 2017

Dunlace Public School, Toronto, Ontario, Canada

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As a parent in my local school, I spoke with Mr. Moreau, my son's grade 5/6 elementary school teacher in the Toronto District School Board about teaching the children in his class a 3-part innovation series. I teach innovation at the university level and to organizations and I thought it would be a great opportunity to bring the concepts of Systematic Creativity to the classroom.

Having seen the usefulness of the creativity model in its real-life applications, I wanted to make sure that the students at the local level in our school could experience on of the most cutting-edge ideation techniques I have encountered. In this innovation series, I introduced the grades five and six students to the concept of the differences between creativity, imagination, invention and innovation and the differences between them. We discussed how students their age around the world are creating inventive new ideas that can be patented and protected. We also discussed how they can solve real-world problems using creative problem-solving.

The class was engaged and interested in learning more about how creativity and invention works.

We followed a creativity and innovation model called "Systematic Creativity". This evidence-based methodology has been taught around the world and implemented in thousands of organizations. This elegant system can be adapted for use with children as young as 10 years old to CEO's of Fortune 5oo Companies alike.

"Systematic Creativity" is based on the evidence over the last 60 years of reviewing patents. What was found in the research is that creative or inventive thinking followed certain patterns when coming up with new ideas. When we learn those patterns we can apply them on purpose to get more creative/inventive ideas on-demand.

During the sessions with the students, we were only able to cover the first pattern or template called "Subtraction". In this template we ask participants to list all the components of the product/service/process and components in the immediate environment that we can access. We then subtract one of those components one-by-one to visualize how we might be able to use the new "virtual" solution. We ask challenging questions such as:

1. Would anybody be able to use this new "virtual" product?
2. Is there a demand for this type of solution?
3. Can we implement this solution with the resources we have?
4. Does this new "virtual" product solve our key challenge?

If we are able to answer these questions, we list the new solution as a potential "idea" that we can evaluate further.

Then we go on to evaluate how subtracting another component might impact the system, eventually going through all different components.

This uses a convergent type of creative thinking to visualize the new "virtual" situation/product and the divergent type of creative thinking to think of new applications or ways to utilize the "virtual" situation/product.

Students Solving A Classroom Problem:

In our third session, the students were asked what problem they would like to solve in the classroom using the Creativity template of "Subtraction" we had just learned.

After listing and voting on the issues, the students decided that they wanted to address a problem they were having with their desks.

The students found that the spacing of the wire in the mesh basket under the tabletops was too big allowing paper, pens and other items to fall through the holes onto the ground. The students were frustrated that they had to struggle to keep their class items off the floor and keep the room tidy.

Once the decision was made to pursue a solution, the students were very excited to try to solve the problem.

The Ideation Process

Although I wasn't sure how we were going to solve this problem using the creativity template and only items found in the classroom, but I told them we were going to trust the process.

We started by listing all of the components of the desk and began asking questions about other resources that might be available in the classroom to find a solution.

After the list was complete, we discussed what would happen if we took away (Subtraction) one of the identified components listed on the blackboard. In other words, what would happen if we were to subtract the wire mesh basket from the desk and replace it with another item from the desk or in the classroom.

The students were very excited and engaged. They raised their hands, came up to the board to draw illustrations of their ideas, each time building and stacking their ideas. It was an ideation process on steroids!

Many of the ideas offered by the students were both colorful and imaginative. At times, it ws necessary to steer the class back to the problem statement and keep them focused.

Ideas ranged from putting rockets on the desks to changing the type of desks and putting flip up desks in their place. All very interesting. One fifth grader suggested that if we were to subtract the wire mesh basket, we could replace it with a wood board.

To stay true to the process, we needed to ensure it was a solution offered made use of the available resources in the classroom (Closed World).

It was at that point that Mr. Moreau, the class teacher remembered the art boards in the classroom closet. They were the perfect size!

Students would be able to cut down the art boards to fit the size of their desks and placed them in the bottom of their desks to prevent papers and pens from slipping through the mesh.

The students felt a great deal of accomplishment having resolved a problem that had been troubling them all year. They took ownership of the challenge and found a solution that would work for them.

Lessons Learned

- With basic training, most students can solve problems creatively
- Students are more empowered when they are involved in identifying and solving their own problems
- Learning a systematic approach for creative thinking helps frame the problem-solving process
- Students will work collaboratively to build solutions when you have a structured process
- Once creative thinking tools are learned, students can apply their training to identify and solve other problems
- Creative thinking leads to entrepreneurial thinking – what would be possible that consumers may want?
- Creative thinking leads to technical problem-solving – how could a potential solution work?
- After having experienced the process, they can apply these systems to overcome other problems.