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Five Pieces of Trash

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Abstract: Marketing is changing rapidly as are the environments in which it operates. Marketing oriented classes like Creativity, New Product Development and Social Product Innovation need to move beyond theory and offer applied opportunities for the students to learn. This is about a simple low cost exercise used in class to teach the idea of modeling. In Design Thinking terms, constructing very basic prototypes or even brainstorming in 3D. The challenge for students is to learn how to model rapidly and economically and this does both. The challenge for professors is that many business schools do not have maker spaces.

Key words: marketing, five pieces of trash, 3D print

1. Introduction

Learning to prototype is important in the classes today. In the Marketing department, there are classes that could or should use creativity exercises, and maker spaces. Some of these are courses in Creativity, New Product, Innovation, Design Thinking and many more. In years gone by the theory was that after much research you would begin to model. In those days modeling and prototyping were expensive.

What has changed? Three things are changing rapidly to challenge the Marketing Professor with the opportunity of teaching one of these classes. First, business schools are pushing the concepts of application, or doing in the class. In the author's university it is Learn, Make and Do. In addition, the idea of the flipped classroom often includes doing things in the face to face time of the class. Second, the current push for the Design Thinking approach advanced by the Hasso Plattner Institutes at Stanford, Potsdam, and Cape Town. In this system of innovation, the concept of prototyping is important and is used not only as a method of providing a late stage idea to clients but as a means of ideation. Third, the cost of prototyping is coming down to almost nothing. Students, at the author's university, can go to the library and 3D print a model of almost anything that they want.

With all the changes impacting marketing professors they now face the challenge of how to include modeling and prototyping in the class syllabus. It is easy to send students to the library to 3D print an idea and bring it back to class but that is when the idea is somewhat fixed. How do you teach modeling as a creativity tool in the class room in a modern business school that does not have a designated maker space?

In models of innovation and new ideas like Design Thinking, Stage Gate, and others you find the maker phases. If, as in most cases, you end up iterating by pivoting, or going back around there are more maker phases. How in the modern clean classroom do you get students to be creative in making things? It is hard enough to get students to iterate once they have the resources. There is a natural tendency for ideas to solidify when you start

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creating models. If you want to pivot, iterate, or change there are several reasons for resistance to change.

Humans have a seemingly intrinsic resistance to change when they have constructed a model in 3D. For some reason, a 3D model seems to lock up the mind especially after you have cleaned up the mess and set the model on the table. Why is it so hard to simply put that model aside and start a new approach? You do this in ideation, you do this in sketching, so why not in modeling. Students find it hard to pivot or iterate when a model is not getting good response. Students may feel limited in their creativity given one set of resources

In classes like New Product and Creativity in Marketing, the challenge of offering an applied experience in the traditional business school classroom is large. In the author's case, the business school occupies a new building completed in 2013 with no thought to, "maker spaces", and actual project work. The rooms are beautifully appointed and full of electronics and even artwork. The tables are in a relatively stiff format. There spacious windows to the outside so you can dream about playing in the snow in the winter, or fishing on the river in the spring.

The challenge as the administration increasingly talks about learn, make and do is how to accomplish the applied or maker section. These beautiful modern classrooms do not make it easy for making things.

- Furniture is new
- Table tops are not whiteboard marker friendly
- There is no equipment (saws, knives, scissors, screwdrivers, glue guns, etc.)
- No materials (foam core, cardboard, tape, foam, glue colored paper, balsa wood etc.)
- No equipment storage places
- No facilities for cleanup.
- Classes are tightly scheduled (little time to set up or clean up).
- The classes are completely full, not an empty seat.
- The whiteboard space is in the front of the room.
- Trashcans are small, as the university is big on recycling — often difficult in a maker space.
- No safety training on box cutters, saws, hot glue guns etc.
- Atmosphere is of a classroom not a maker space
- Resource constraints of faculty and students on modeling or prototyping: time, money. energy and space to build
- Resource constraints in terms of supplies.
- Students work to live and do not have much extra for supplies
- Supplies can be expensive
- Students new to any of the innovation models do not necessarily know how cheap resources can be.

In the Design School in the author's city, they have several levels of labs equipped for making all kinds of models and the students understand the concept of model today and model again tomorrow. There is a room with foam core, balsa wood and other light substances, there are shops for wood and metal, there are materials and sewing machines, there is a three D printing lab, there are computers for designing and there is even a materials library.

How do you prepare the marketing student of today to lead team members like this? Industry colleagues suggest that often many prototypes are made. When you do not have the facilities to make one how do you make many? When teaching, Design Thinking the idea that you should develop several prototypes is emphasized. Starting with the simplest to more and more complicated models! Design thinking sometimes uses prototyping as

a method of creativity. How do you do this without resources?

For many years, the business school had small classes and the author would buy extensive supplies but when the classes were move to classrooms without storage and expanded in numbers of students it became unrealistic. What can you do? Today free resources are used to get the idea of simple modeling across.

2. Five Pieces of Trash

2.1 Learning Objectives

There are four major learning objectives with this creativity exercise. The first objective is increasing student's creativity. Hopefully you will help students to increase their ability to visualize new and different approaches. A second part of the creativity objective, is to help with relational thinking. A student needs a rocket launcher — some will see that the Pringles container is perfect. Others, will not be able to see the relation. Hopefully this exercise will help. Hands-on creativity, some students will flourish with the opportunity to use their hands as that is how they learn. The final portion of creativity, is to help students to learn the freedom to imagine, to shape, and to make. It is a real injection of energy for the creative process for young, adults, and old.

A second learning objective is the detachment from specific tools. Much as our culture, subculture, languages, and experience limit our ability to think about things, often people limit themselves to thinking about creating with the tools and supplies available. It is hoped that students will learn to detach themselves from their supplies, or the idea that they should feel limited. Imagination is a wonderful thing to encourage.

Illustrating that you can get into multi-dimensional space without high cost. Students, in a public university, are quick to say they have no money. With this exercise that is not a disability. Hopefully a take away is that you can model with almost anything. All students need is a little creativity.

In Design Thinking, prototyping can be done as a form of three-dimensional ideation, or to show to the segment of clients what you are thinking about. In business schools, usually we do not teach ideation by modeling. However, it is a powerful tool for ideation. It is also important to use with clients to test ideas.

2.2 The Exercise

Students are asked to bring in five pieces of clean trash for a specific class period. Do not tell the students the assignment for the in-class activity. You want them to look for interesting trash at their house or place of work without knowing how it might be used. Encourage students to bring tape, glue and scissors if they have them. You will be surprised how much they can and will contribute if asked. Especially if they have, some old tape or glue that they are not using. Students often in the days before the activity to be collecting and then brining the trash to class. If you live with roommates you may have to watch the trash like a hawk, if you want to rescue the cardboard roll from the paper towels. Students are used to grabbing their connective device and a backpack and not a bag of trash, reminders are important. Be a little creative and fun as a professor — "Trash Class today at 4:00 PM — admittance five clean pieces of trash!

When the students arrive in class, have them pile the trash on a common table or in a common spot. This is hard to get students to do, as they do not want to let go of their trash. You may have to explain that this is an important part of creative the process. If they hold on to only their trash, they are limiting the creative opportunity for themselves. They need to be free to think and not start thinking about how to use their trash. Letting go of their ownership to create a collective ownership is letting go of one restriction in their thinking or creativity.

The class leader or professor needs to bring in something to act as a base. Usually a piece of foam board works well, try buying the odd colors that may be on sale to encourage thinking that is even more creative. What do you do with a pink base, or a diamond-clad base? Other things that are useful to bring to the class meeting include: construction paper, glues (rubber cement, glue sticks, white glue, etc.) if they dry quickly, Post-Its, 3×5 cards, markers, straws, pencils and colored pencils, scraps of ribbon, wrapping paper, and so forth.

Preparing the room always helps. Depending on your furniture putting some groupings that will easily let the preassigned groups of five work. Know how you are going to get rid of the left-over trash at the end of the class period, in a dumpster or in big trash bags! Know what you are going to do with the items students make at the end of class. Know if and how you will grade them

Are you planning keep the physical models? Or, will you take pictures and ask each team to take a picture and send it to you. Estimate how long it will take to get the class room back into usable order for the next class.

Plan for time for room set up after or as students arrive:

1) Tables for the trash
2) Appoint a volunteer(s) to be sure trash gets on the table and not all over the floor and the room.
3) If there is to be some music in the background appoint a responsible student to handle that.
4) Save the bags in which the trash comes as they may help you in clean up.
5) Post in advance on your system such as Blackboard groups for the day so time is not wasted there.
6) Post a rough schedule on line so students know what to expect.

- 10 minutes to set up
    - Students in seats
    - Trash on table
    - Resources in room reviewed
    - Importance of sharing
    - Remind students with their own scissors etc. to put their name on it.
    - Making the in-class assignment
- 30 minutes of work time
    - Sketching
    - Reviewing resources
    - Selecting trash
    - Building
    - Adjusting
    - Iterating
- 20 minutes of sharing
- 10 minutes of clean up
- 5 minutes closing
    - Remind students to wash hands
    - Assignments for next class
    - Preserve your work with a photo.

In this description, it may feel like a bit of a rush but when you have forty students for an hour and fifteen minutes and you want to turn your classroom into a maker space things are going to have to move fast.

3. Making the In-class Assignment

If you can pick a general theme or assignment like the park, classroom, or lobby, of the future. It is great to pick a year five to seven years out and discuss some things that may change to get the creative juices flowing. This will permit you to assign teams to specific segments. For example, one of the author's favorites is Public Parks of the future and how should they look for different target audiences. Below are some of the target audiences that the student groups can choose from to build their parks. There are typically 40 in a class so 8 groups of five works nicely for this exercise.

1) Young children
2) Teenagers
3) Families
4) Seniors
5) Super Seniors
6) Disabled
7) Urban
8) Rural

Remind the students that they are to conceptualize a whole park like they might have in their town or neighborhood. They are to think about it five to seven years in the future. Writing this in 2017 the author would select 2025 as the year to be thinking about. Encourage your students to develop several activities for their target segment. It often helps the students in your class to think if you can reference family members like grandparents', younger brothers and sisters — or point out that they might be the ones taking their children to such a park. Encourage them to sketch, think, and then build. This is one of the hardest things for people to do. They need to let their imaginations run with a pencil first. Then when they have an idea, they can try to figure out how to communicate the idea. For some reason, students and seminar participants always want to rush to build. Even when confronted with a big sheet of paper on the table and a video showing sketching and then building, participants will often start build and just fold up the big piece of paper. It is quite possible that some people are more creative this way, but students and participants need to learn different methods.

Hopefully, after sketching the students will find inspiration among the piles of trash that you have in front of the room. It is always amazing how they can find just the right pieces after spending a little time in thinking about a challenge. Remember you are trying to open the mind and not close the mind. Give them a limited amount of time to model.

When the models are complete or time is up, let them explain the models they made. Encourage them to talk about why they selected what they did out of the trash. Encourage them to relate it to the theme. How does their model fit the segment they were assigned? Why is it built differently than for other segments?

The important thing is to get them to realize as you review the beautiful models that they took forty minutes or whatever you allowed and the primary resource was trash. This now sets a high expectation for their modeling.

- They have more time
  - They can select when they want to work in the daily cycle
  - They can select the work style that fits them the best.
    - Working within time segments, say 15 minutes at a time.
    - Project based-work until you are done

- They usually have more project space at home, their apartment, the dorm, grandpa's barn etc.
- They get to select their resources — even if they are on a severely restricted budget.
- They can select the people they want to help them whether family or friends.
  - This can be a great place for multiple generations in a family to help.
  - In the Latino community where they extended family is big there is real opportunity for excellent resources for modeling.
  - Remind them that their friends in art and design and engineering and fashion can help as well.

In work in industry simple models are often the hardest to get started. This becomes very applied as students get the idea of models can be made quickly and simply and then refined, or tossed out as you pivot into a new direction. Let them know 30 or 40 models and prototypes is not too many. Again, your challenge will be people locking in. The trash is supposed to help them to take more of a tinkerers approach to modeling

3.1 Suggested list for Protoyping

- colored craft paper
- cardboard
- foil wrapping paper
- cellophane
- envelopes
- fabric
- pipe-cleaners
- colored feathers
- felt shapes
- popsicle sticks
- toothpicks
- paperclips
- rubber bands
- twist ties
- old clips from bread bags
- bulldog clips
- plastic bags
- Velcro
- Blue tape
- Sharpies
- stickers labels
- letters
- numbers
- buttons
- ribbon
- plastic cups
- scissors
- glue sticks

- sticky tape
- stapler
- hole punch

4. Potential Challenges

There are a few potential challenges that you could run into. First, is unclean trash. I always suggest to the student(s) monitoring the trash table to throw away or let the author throw away anything that for any reason does not look safe or clean, reared, but a possibility. The greater challenge is students forget their trash items! The wise professor has a bag of clean trash from their home. A third, challenge is boring trash. Some students have boring trash and you as professor may have to see that they have wonderful imaginary things in their trash, if needed the author studies the trash and comes up with five things and uses some imagination. The Pringle's tube can be a super senior climbing tower, bungee platform, support for a zip line, circular apartments etc. The TV dinner tray can be a pool with different divisions, the butterfly garden, a roof to the amphitheater etc. This is a challenge for you to get people thinking and seeing the magic and not the trash. If students ask how clean is clean — child safe. If it has food in it, wash it well preferably in the dishwasher. If it is a cardboard, keep it clean. If it is carboard and had food in it such as the Pringles Tower wipe it out and let it dry.

4.1 Changes for the Future

Increasingly the author is intrigued with idea that modeling with restricted resources can lead to creativity. For example, recently at a workshop for college professors there were three modeling exercises in a row. One with bottles in which they had one three-liter bottle, thee ½ liter bottles three sheets of colored paper, tape, and string. A second modeling was done with a bag of supplies that included some colored paper, some popsicle sticks, some 4x6 cards, and a few other odds and ends. The third modeling was primary cardboard. What is interesting is how creative you can be to express something with comparatively few finite resources.

Steven P. Dow and colleagues discuss another aspect of this:

> Creating multiple prototypes in parallel can help individuals more effectively understand underlying design principles, enumerate more diverse solutions, and react less negatively to feedback. Distributing ones' psychological investment across multiple designs can reduce fixation and sunk-cost reasoning. Individuals may be more candid and critical of their own and others' ideas, resulting in more fluid and effective collaboration (Dow et al.).

If keeping models simple encourages creativity and change, it may be important to think about using this in classes. To do this you might want to use a suggestion of Waltraud Beckmann. In a rapid fired brainstorming, try three bags of different types of materials to see what kinds of creativity this will generate. For example, have them build three models on the same day: First out of empty clean water bottles, tape, and staples and scissors or some other material, second have them model the same idea using simple cardboard boxes in which groceries are delivered with some a strong tape and some colored sharpies, and third give them the pick of the trash that they have brought into class and let them build away. When all is done have them present all three rapidly. There are two main goals here one is to increase the creativity in modeling, and the second is to decrease the attachment to a model.

4.2 So How or Where do You Use This?

This was developed in a Creativity Class, but could be used in almost any innovation or new product development class where you are trying to encourage the Creative Process. In the author's universities in the states and internationally there are classes where this could be used all over the campuses. It fits particularly well if a university is also interested in sustainability as it is introducing the idea to the class room budget.

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