

How might I teach Grade 9 students at St John's MV about adapting design thinking for themselves, in an engaging way?

Questions

- Should I first interview students before setting up these challenges, or will I learn about them through these workshops?
- Should the challenges revolve around success in school, or give participants a space to think about other things?

Context

- St. John's is a school with limited resources, low-income students
- Building Bridges (the org I work with) has just completed a first visual arts workshop series with Grade 8; they will complete a second on photojournalism in May/June
- Students have little parental supervision; introduced to drug use at a young age
- Students are disruptive at school (but seem to have really enjoyed the first BB series)
- Girls drop out more often than boys and do not finish their education
- Gr 9 is last year of middle school; Gr 10 + 11 are spent prepping for important standardised exam; students think of it as "make or break" point in their life
- Design thinking can introduce growth mindset, encourage embracing 'failure', and taking ownership of their lives and choices in these two years and beyond

Workshop 1, 2-3 hours

Goal: Get students excited about the imaginative/creative potential of DT in a short time
Create a foundation for participant retention in the future

Warm-up: Games like soundball, squirrel-nut-tree, etc

Prompt: How might we make coming to school in the morning more fun? OR what's my dream bedroom/play space/study space? Even smaller - like a toy? (see K12 resources)
Perhaps 5 chairs exercise?

What's an achievable and fun challenge for this time slot?

Wallet exercise?

- Take time to think about your own experiences - 10 mins
- Interview a partner (or groups of three?) x2 - 15 min
- Capture findings: Goals (what do they really desire/need?) and insights (something surprising - are you seeing something about your partner that they are not?) - 10 min
- Create a POV - 10 min
- Sketch 5 really wacky ways to solve user problem (5 min)
- Share with user and get feedback (10 min)
- Pick one feature that's most interesting and draw a sketch (5 min)

Snack break?

- Build a quick prototype (15 min)
- Share solution and get feedback - what worked, what could be improved, questions and ideas (10 min)
- What next? What two things would you do next? (2 mins)
- Redefine POV (2 min)

Feedback and final game

Full workshop series, 2-3 hrs x 5 sessions

Learning goals

- Let go of fear of being “un-creative”
- Take ownership of defining and solving a problem
- Gain an understanding of growth mindset (even if they don’t call it that!)
- Get familiar with DT methodologies and mindshifts
- Learn to value process as much as the final product
- Learn to provide constructive critiques of others’ work to support growth

My goals

- Create smaller, more feasible projects that can be easily completed and have concrete outcomes (unlike my more time-intensive endeavours in the past)
- Develop language for problem solving that resonates with students of St John’s MV
- Define how students will express their creativity in each context
- Practise coaching skills

Prompt

Prepping for O/L’s? (help students develop a sense of empathy for the challenges students face in their O/L daily life experiences) OR **should each day be a different small project? - redesigning shared spaces like classroom, redesign the school playground, morning routine redesign for classmates, making a O/L survival toolkit for a friend, etc**

Intro Survey (develop)

Session 1

Session 2

Mid point survey (develop an informal interview?)

Session 3

Session 4

Session 5

End of session survey (include questions that assess mindshifts?)

Exercises for empathizing with self

- Identity letter/identity collage+mask - Discussions around strengths that lie *outside* of grades, things about yourself you find surprising (can also do this with a friend and see if you find surprising discoveries)
- Write a newspaper article/encyclopedia entry/letter to your grandchild about your life and what you were most proud of - discussions around what you think your legacy will be
- Identity t-shirt? Wearing this t-shirt will make you feel ... because ...

Teachers vs. students (scale)

How did you develop your materials (it’s been two years) and how long is it?

How do you assess it?
Prototype testers

Publish and package - supply to pilot partners
How to price teacher training/materials in the future

Teacher ambassadors?
Online trainings/data stick?

You want to start with friendly audiences

Invite teachers - special invitation - exhibition day
Energised kids

Bounded way to try something with their students - idea for 1 hour activity with their students, laid out step by step, develop all the resources
Guide and materials

Exact same thing or a part B
Find ways to bring teachers and students into contact

Start with wacky challenges, favourite toys - better way to start
Don't start with something precious

Valid approach to projects vs. mindsets

Spaghetti marshmallow challenge
Prototyping glasses for yourself, fav superheroes glasses

Design Thinking in 5 Sessions

Session 1: Introduction to Design Thinking

Session objectives: Students will learn what design thinking is, and dip their toes in quick hands-on activities for interviewing, brainstorming, and prototyping

Warm-up (15 min)

Materials: one sheet of paper

Make something that obscures your face, is hands-free, and still lets you see.

Discussion: when you design something, it's not about you. It's about someone else.

Presentation (15 min)

Materials: prepared PowerPoint; handouts to be distributed at the end

What is design?

It's a process.

How will we be doing it here?

Through understanding our user (open-ended questions, understanding POV)...

Working with them to solve real problems (human-centered collaboration and feedback sessions)...

Through rapid prototyping (fail early, fail often) that allows us to "show, not tell" our thoughts

Activity 1: Paper Clip Brainstorm (30 mins)

Materials: Paper, Pencil, Paper clips

General Introduction: 4 Min

Quick introduction to brainstorming, overview of why it is important and how to approach (Key lesson for post-activity discussion: **working quickly, groups are often more generative than individuals**)

Brainstorm 1: 3 Min

As individuals, each student writes down as many uses for a paper clip as they can think of. Pass out a paper clip to each student for inspiration. They can manipulate it in any way.

Compare Brainstorm 1: 3 min

Have students pair up (or groups of three) and compare the paper clip use ideas each came up with. Ask them to look over the ideas that their partner came up with focusing what ideas each person came up with as well as what ideas only one person came up with. Have each student choose the wildest idea from their partner's list.

Brainstorm 2 (The contest): 5 min

Now in pairs, students continue to brainstorm new ways to use a paper clip. The goal is for each pair to come up with as many ideas that no other pair thinks of. They don't have to repeat any of the earlier ideas they came up with individually, but supplement that list.

Share out: 15 min

The first group shares one of their ideas. Continue to rotate through all the groups having each one share one idea. For each idea that gets said out loud, other groups have to say whether or not they also have that idea. If any other group has that idea ALL pairs have to scratch that off of their list. Each group gets a point for an idea they have that no other team has. The team with the most points wins.

Game: Snap-clap-stomp (15 min)

Have the group get into pairs (a different person from whom you've worked with before). They count off, 1-2-3, 1-2-3 (so that each person is saying a different number each time). Next, they snap instead of saying 1 (snap-2-3), then it's snap-clap-3, then snap-clap-stomp. Discussion: Are they getting ready in advance for their move, or going with the flow? Design thinking is about letting things happen, and not preparing your response in advance.

Activity 2: Open-ended questions (30 min)

Materials: Set of questions, paper and pencil for recording answers

Interview (10 min)

Give students a set of prepared questions, some open-ended and some not, e.g.:
What did you eat for breakfast this morning? Do you play with friends after school?
What is your favorite game? Can you describe a fun holiday you had?
The first two questions are not open ended; the second two questions are. Ask students to pair up and ask each other the above questions (or a set of questions you come up with)

Identify questions (2 min)

As a class or in pairs identify which questions are open-ended and which are not.

Debrief (5 min)

Ask the students the following questions:
What kind of answers did you get from asking the open-ended questions?
How did those answers compare to the answers to the other questions?
Why do we focus on open-ended questions when trying to understand our user?

Question Development (8 min)

Give students time to develop their own open-ended questions and share

Break (15 min)

Activity 3: Five Chairs (45 mins)

Materials: [Story Cards](#) ,Sharpies, Paper, Scissors, Corrugated Cardboard, Pipe Cleaners (or thin wire), Modeling Clay, Tape, Toothpicks

Instructions

Get groups into groups of 4. Pass out [story cards](#), one per group

Build two design principles (needs) into your prototypes (5 minutes)

Have students highlight two needs they see in the description of their user (explain design principles as rules for building based on needs of user, and that your chairs have to reflect your own style as a designer, if your goal is to create something delightful/cool for your user)

Share out (5 mins)

We are going to build 5 iterations of your design using different materials (Explain: What do I mean by iteration?)

Build 5 chairs:

1. Draw a Chair 3 minutes (Using the provided Sharpies, draw three sketches of a chair on a piece of paper.
2. Cut a Chair 5 minutes (Using ONLY your scissors and the sheet of corrugated cardboard, make a standing representation of your chair)
3. Bend a Chair 4 minutes (Using as many or as few of the provided pipe cleaners, make an expression of your chair)
4. Mold a Chair 5 minutes (Using the provided clay, make a model of your chair)
5. Assemble a Chair 5 minutes (Using tape and toothpicks, build your chair.

Discussion Questions 5 minutes

What was it like to build your chairs using the design principles you identified?

What was it like to create different iterations of your design?

What did you change along the way? What did you learn from your prototypes?

Did anyone get stuck at any point? What was that like? What did you do to get unstuck?

Which material did you enjoy working with the most? Why?

Which material did you like the least? Why?

Which material best expresses the essence of the chair you drew?

Reflection and Wrap-Up (15 mins)

Which game/activity did you enjoy most?

What did you learn?

What were you most uncomfortable with?

What would you like to see more of?

Homework

Bring your favourite toy to the next session

Session 2: Working Through the Design Thinking Process

Objectives: Practice interview techniques, practice brainstorming and prototyping, design something for a friend and learn to incorporate feedback into future iterations

Warm-up: Paper bag prototype (15 mins)

Paper bag with a word on the bottom – 1 minute to use your fingers to turn it into the thing
Discussion (guess what people made which one, how quickly can you make something look like what it needs to be?)

Game: Picture Phone (20 mins)

Divide room into two lines – show a picture for 5-10 seconds, take it away and draw from memory, stand on the side, don't show anyone your drawing.
At the end, show people how the drawing has changed over time – and how communication gets distorted. Think about how that happens with words as well.

Activity 1: Pitch Your Toy (30 mins)

Discussion: design thinking is about telling the story of your idea
Being authentic, having authority, create value, have integrity - "show don't tell"
Give clear demonstration of functionality
Describe target user (if relevant)
Solicit audience feedback
Use lively and engaging language
Speak Clearly
Use effective media to present material
Engage audience in presentation
Organize presentation clearly and logically, complete within the specified time limit
Everyone gets 1 minute to pitch their toy and say why it's the best
(If a big group, break into smaller groups)

Break (10 min)

Activity 2: Pencil Case Makeover (75-90 min)

Steps

Sketch your best idea for a pencil case (4 min)
Sketch better ways to carry pencils, pens, scissors, and other school materials (3 min)
That was a problem-solving approach. Now, a design thinking approach...
Your mission is to create something **useful** and **meaningful** for your partner, not a pencil case. Interview 1: Ask your partner to introduce themselves by walking you through the contents of their pencil case. Ask questions (5 x 2 = 10 mins) and get insights (1 x 2 = 2 mins)

Interview 2: Go deeper and find out more. **Forget about the pencil case.** (5 x 2 = 10 min)

What was surprising? (1 x 2 = 2 min)

Inventory possible needs (3 min)

Define a problem statement (3 min)

Needs a WAY to, rather than NEEDS to

Sketch 3-7 **radical** ways to meet your users needs (5min)

(Make the radical sketching of ideas almost a contest for who can get the most ideas down in the time period. Really emphasize volume and wildness. Be wild yourself. Throw out a crazy idea. Make it ok.)

Share solutions + capture feedback (3 min)

New things learned about needs (3 min)

Redefine problem statement (2 min)

Sketch new solution (3 min)

Build new solution (8 min)

Share solution + capture feedback (5 x 2 = 10 min)

Typically, you have them build the prototype, share with each other, and then have the whole group put all the prototypes together on the floor or on the table to see the diversity of prototypes. Good questions to ask are "Who has something that was designed for them that they loved?" "Is there anything on the floor someone wants to know more about?" Use those questions as launching off points to then unpack their design process. How did they get to that solution? What did it look like on the first iteration? (10 mins)

Reflect on design thinking process (10 min)

Reflection and Wrap-Up (15 mins)

Which game/activity did you enjoy most?

What did you learn?

What were you most uncomfortable with?

What would you like to see more of?

Session 3

Session goals: Understanding POVs, trust yourself, appreciate the outcome instead of worrying during the process

Warm-up: Blind Contour Portrait (15 mins)

Materials: white paper, thick black sharpie

Take one minute to draw your partner without lifting your pen from the paper, and without taking your eyes off your partner.

Discussion: not looking down, completing the experience before judging it, realizing that it is interesting *after* completing it

OR Blind Tactile Drawing (15 mins)

Materials: one sheet of paper, pencil

Draw three sketches of what you think you are holding in your hand

Discussion: Understanding what you can't yet see

Game: Line at a time drawing (15 mins)

Everyone draws one line at a time on a big sheet of paper or whiteboard – can be wavy, straight, can be any stroke on the page but don't lift pen until end of stroke.

Discussion: What do you see? How are you interpreting and understanding the full picture? What was surprising? What shifts and turns did you notice during the process?

Journey Map (15 mins)

Introduce Journey Map:

- We do this to help us understand the context around our user and what design opportunities exist for him/her.

Large Group Example:

Draw an example on the board with student input. Suggestion: how food gets on your table

Activity: Redesigning your morning routine (75-90 mins)

Chart your typical morning routine through a journey map (5min)

Interview your partner (4 x 2 = 8min)

Dig deeper in interviews, go beyond morning routines (3 x 2 = 6min)

Encourage students to include another dimension to their map - this might be what the user is feeling, who the user interacts with, what is slowing the user down, etc.

Capture findings (3min)

Create a few POVs and pick one (15min)

Materials Pen, Paper, notes from empathy, attached hand out.

1) Record Needs and insights (3 min)

Give students the POV handout and ask them to take 3-5 minutes to fill out the left side with the needs/insights they discovered during the empathy build stage of the design process.

2) Fill out Madlib (3 min)

Direct students to the right side of the page and ask them to fill out the "madlib" on that side. For the "users need" section encourage students to fill it in with a verb so that they come up with an actionable and sufficiently broad problem statement

5 radical ways to meet user needs (5min)

Share solutions and capture feedback (5x2 = 10min)

Generate new solution (3 min)

Build solution (7 min)

Share solution and get feedback (4 x 2 = 8 min)

Headline two next steps (2 min)

Redefine POV (3min)

Break (15 mins)

Define your personal POV (30 mins)

Free flow people/places/things that get you super excited, curious, energized, etc

Encapsulate the energy from the brainstorm above into a simple, personal POV statement:

My name is _____ and my life mission is to _____.

Think about three things that you're trying to balance – this vs. that, present vs. future, etc (look at Nike CEO's workbook pages as inspiration)

Reflection and Wrap-Up (15 mins)

Which game/activity did you enjoy most?

What did you learn?

What were you most uncomfortable with?

What would you like to see more of?

Homework

Interview someone not in the class to see what their morning routine is like; make notes on what they say, do, think, and feel - try to do it in pairs and help someone in this class

interview someone too (i.e. you should do two interviews together, switching roles of asking questions and recording)

Session 4

Warm-up: Tell me what you're doing (15 mins)

One person mimes an action, second person asks, "What are you doing?" First person tells them something that doesn't correspond with their action. The second person then mimes the 'spoken' activity. First person then asks, "What are you doing?" etc etc
Discussion: celebrate mistakes! Get started.

Saturate space

Empathy Map

Activity: Classroom Redesign

Journey map: what's your school day? (maybe a nice big collective one, everyone gets a different colour post it) (15-20 mins)

Interview a partner (4 x 2 sessions)

Capture findings (3 min)

POV (3 min)

Cartography: draw a map of your classroom (or school) - what are your favourite spots? How do people use the space? How do they adapt if something necessary is missing? (10 mins to explore; 20 mins to discuss going from place to place)

Radical ways to meet user needs - maybe do a post-it group brainstorm

Pick some - easiest to implement, secret favourite, most likely to succeed

Pick one to prototype

Build a solution

Demo it with another group (share and get feedback)

Two next steps

Redefine POV

Session 5

Design your life

4 quadrant test on the full series