UNIVERSITI TEKNOLOGI MALAYSIA

SCSP 1513
SECTION 6

TECHNOLOGY AND INFORMATION SYSTEM

DESIGN THINKING – WHAT DO YOU EXPECT YOUR FUTURE SCHOOL LOOK LIKE?

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Introduction

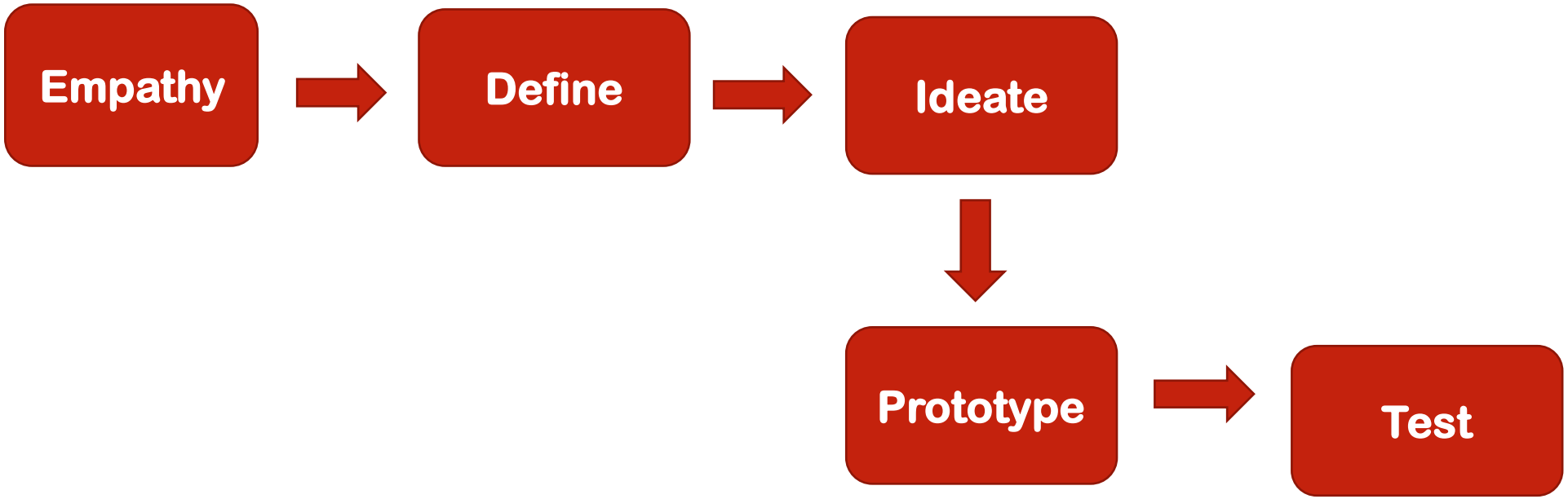
Design Making

- ❖Essential component in the Design Thinking Process.
- ❖Enables human to create valuable outcomes that can solve real-world problems.

Design Thinking

- ❖A design methodology that provides a solution-based approach to solving problems.
- ❖Useful in tackling complex problems
- ❖Understanding the human needs involved
- ❖Reframing the problem in human-centric ways
- ❖Create many ideas in brainstorming sessions
- ❖Adopt a hands-on approach in protoyping and testing

5 STAGES IN DESIGN THINKING PROCESS-



EMPATHY

- Gain an empathic understanding of the problem you are trying to solve
- Involves consulting experts to find out more about the area of concern
- Crucial to a human-centered design process
- Allows design thinkers to set aside their own assumptions about the world
- A substantial amount of information is gathered

DEFINE

- Insert the information we have created and gathered during Empathise stage.
- Analyse our observations and synthesize them
- Define the problems as a problem statement
- Help the designers in our team gather great ideas to establish features, functions and any other elements
- Allow users to resolve issues themselves with the minimum of difficulty

IDEATE

- Ready to start generating ideas
- Think outside the box to identify new solutions to the problem statement
- Look for alternative ways of viewing the problems
- Hundreds of ideation techniques used to stimulate free thinking and expand the problem space
- Important to get as many ideas or solutions as possible

PROTOTYPE

- Design team produce a number of scaled down versions of the product
- May be shared or tested within the team itself, in other departments, on a small group of people
- To identify the best possible solutions for each of the problems identified during the first three stages

TEST

- Designers test the complete product using the best solutions identified during prototyping phase
- Final stage of the 5-stage-model
- Used to redefine the problems
- To inform the understanding of the users, the condition of use, how people think, behave, feel, and to empathise

Detailed descriptions include problem, solution and team working

(WHAT DO YOU EXPECT YOUR FUTURE SCHOOL LOOK LIKE?)

PROBLEM

- **Less attention from students**

  This usually happens because of a boring way of teaching that teacher gave and also less study motivation that given to student.

- **The facilities are inappropriate**

  Besides it is uncomfortable, it also can ruin student's concentration in studying. Because the concentration is built by the environment too.

- **The way of studying is not efficient enough**

  A lot of things can effect this case, such as not conducive class situation, a huge number of student in a class, not understandable explanation from teacher, and other stuff.

SOLUTION

There is a lot of things we can do to solve these problems.

- To get student's attention, teachers can teach them in many unique way. For example, doing games, giving them a gift as rewards whenever they achieve something, or make learning way more fun with technology (build something on computer, use e-book etc.)
- To fix the facilities, the important thing to do is improving the essential part of school, such as class, library, field, etc. then you can just add some technology stuff like computers, iPad, etc.
- To make class as conducive as possible, teacher have to be trained, not only for teaching them a lesson, but also give them a direction about manners, so there will be no problem happens in class. Thus, study becomes more fun.

TEAM WORKING

- We distribute our works so that every group members build the different parts of library.

- The cooperation among the members let us to complete our prototype within the time given.

EMPATHY

- ✓ Understanding the problem - What do you expect your future school will look like?

- ✓ Our group decides to create a library as a part of future school

DEFINE

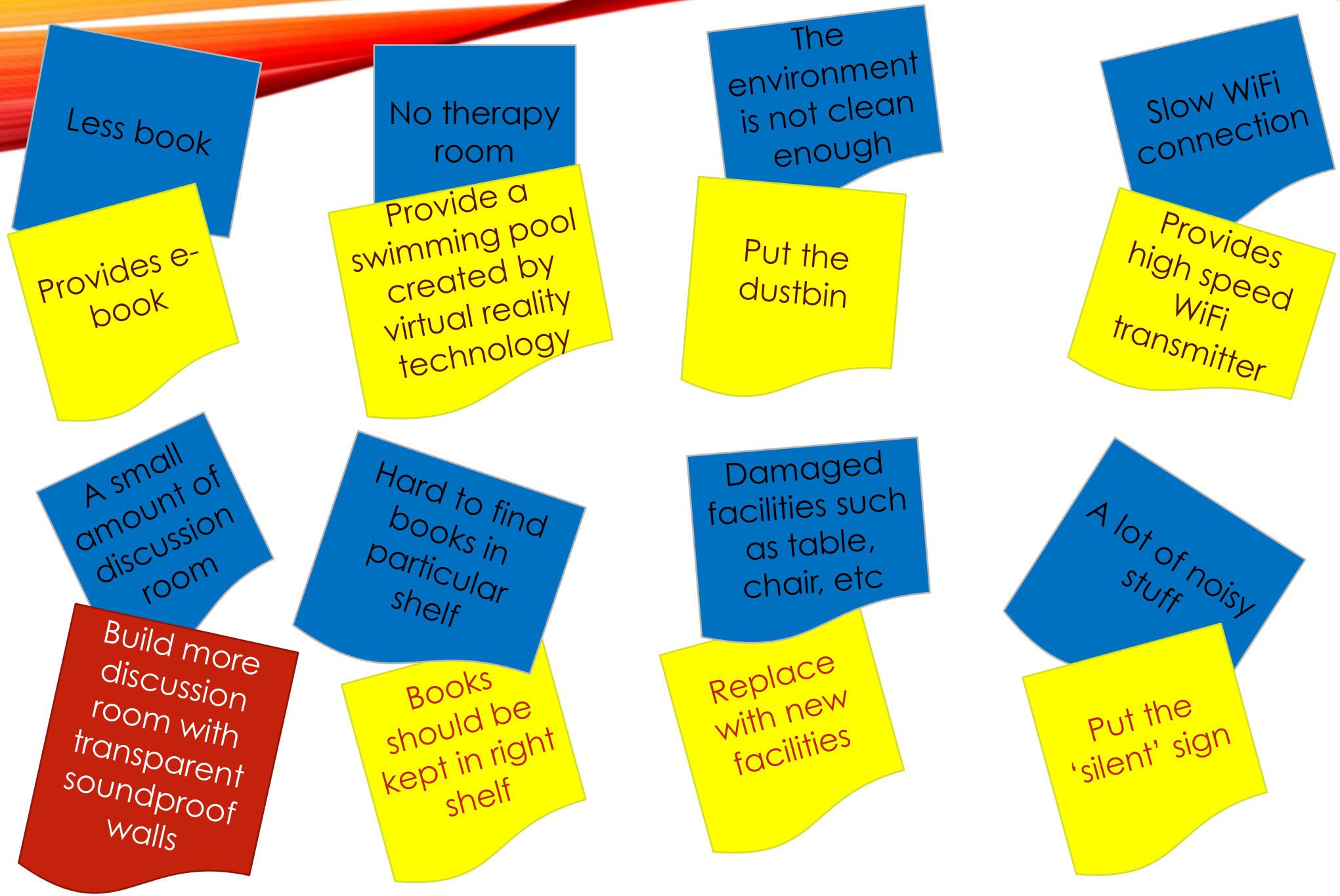
Define the problems that we can find in library

- There is small amount of discussion room
- There is less books on bookshelves
- There is no therapy room in library
- Library's environment is not clean enough
- It is hard to find books in particular shelf
- Slow WiFi connection in library
- There is a lot of noisy stuff
- There are some damaged facilities such as table, chair and so on

IDEATE

Identify the solution for the problems found in library

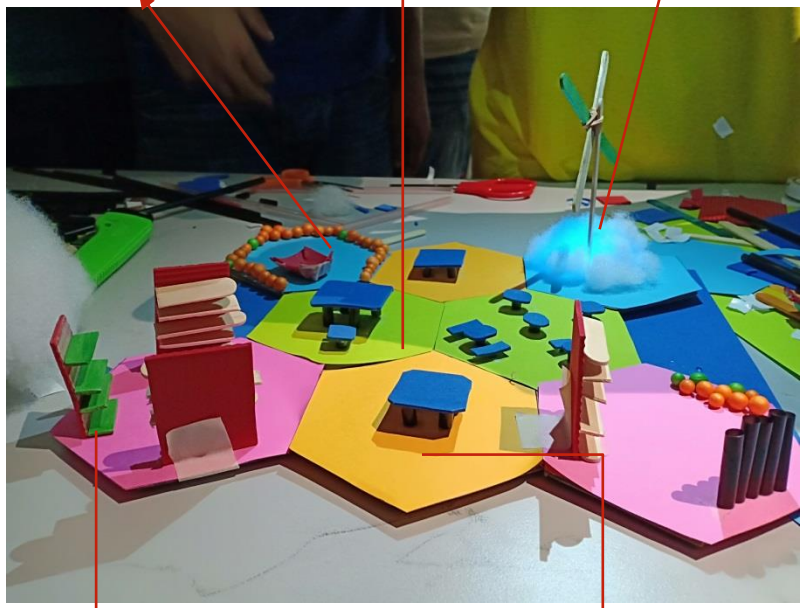
- Build more discussion room with transparent soundproof walls
- Provides e-book
- Provides swimming pool in library that created by virtual reality technlogy
- Put the dustbin in every floor
- The books should be kept in right shelf
- Provides high speed WiFi transmitter
- Put the ‘silent’ sign on the wall
- Buy and replace with new facilities


Less book
Provides e-book
No therapy room
Provide a swimming pool created by virtual reality technology
The environment is not clean enough
Put the dustbin
Slow WiFi connection
Provides high speed WiFi transmitter
A small amount of discussion room
Build more discussion room with transparent soundproof walls
Hard to find books in particular shelf
Books should be kept in right shelf
Damaged facilities such as table, chair, etc
Replace with new facilities
A lot of noisy stuff
Put the 'silent' sign

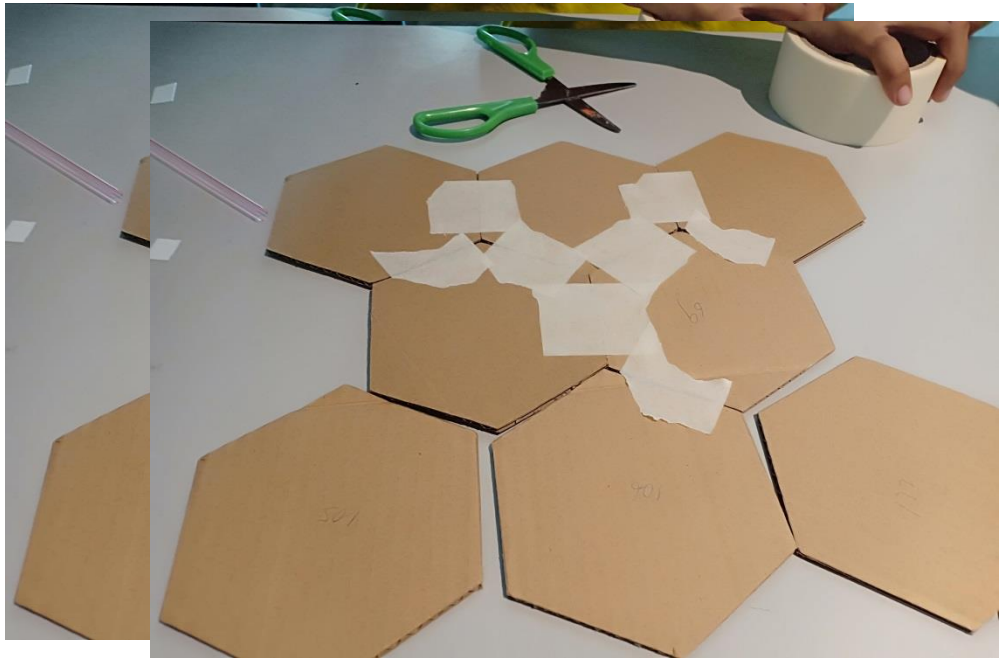
PROTOTYPE

In the library we build:

- Bookshelves
- Discussion rooms
- Swimming pool created by virtual reality technology
- Reading area
- High speed Wifi transmitter



SAMPLE WORK



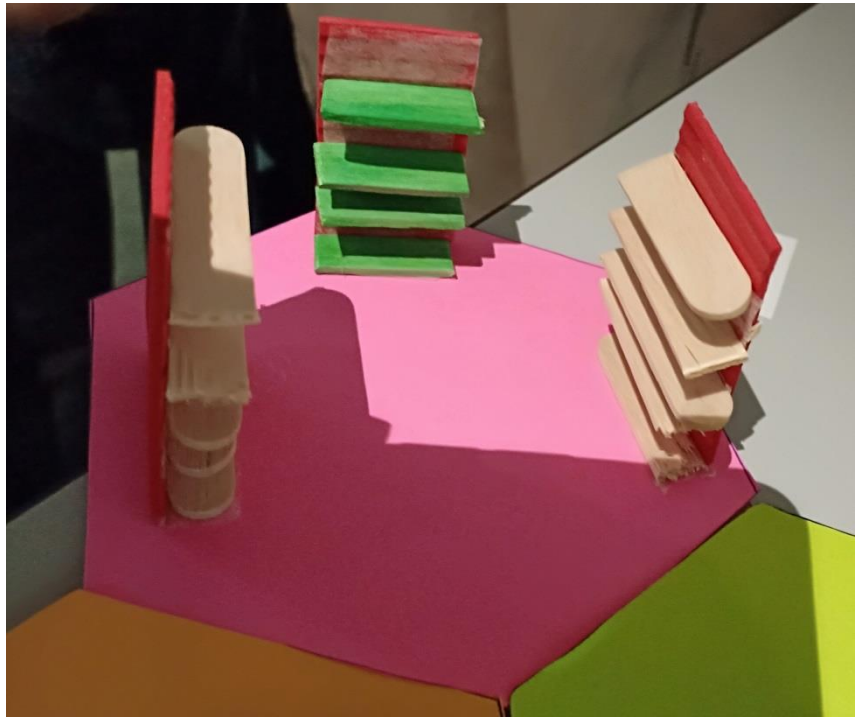
- First, we build the base of library by sticking all the 8 hexagon hard papers

- Next, we cut off the color paper to beautify the library

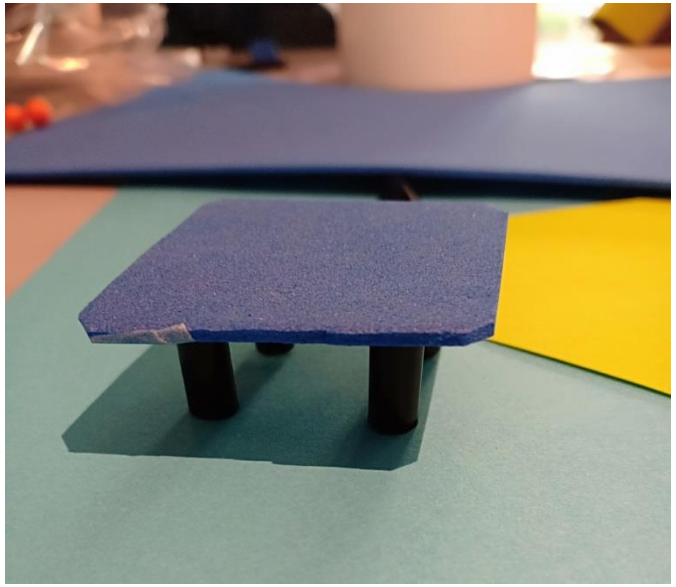
- We build a sofa and VR box to let students relax themselves in therapy room. Students can sit on sofa and wear the VR box that will come out the 3D swimming pool.

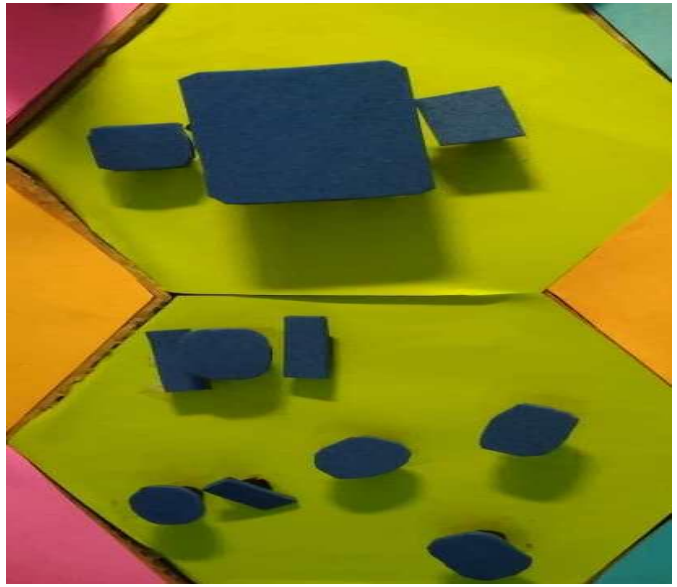
- We also created a high speedy WiFi transmitter by using ice cream stick

- We build the shelf acts as google drive and drop box in library. We also put some straw beside the shelf that acts as connection to the google drive and drop box.

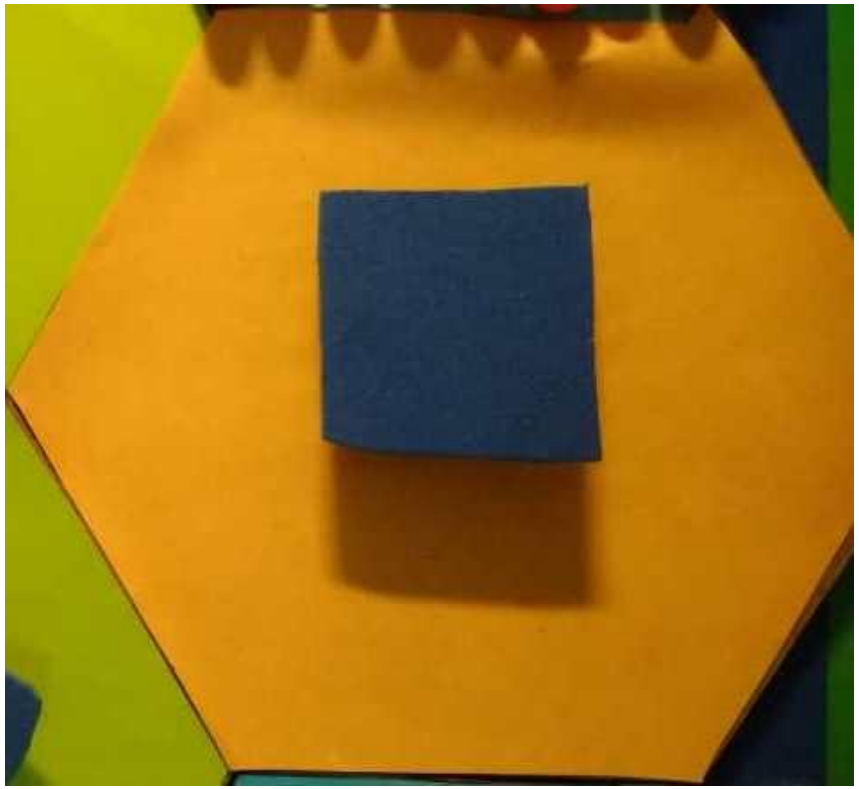


- We build some shelves act as e-book that pull up the screen to search the e-book online





- We create tables and chairs to build the reading area



We build the discussion room with transparent soundproof walls.

Design Thinking Video:

Here is the link for design thinking video : https://www.youtube.com/watch?v=rvitGSfOu7I

TEST

- **The library was combined with other groups' prototypes to build future school.**

REFLECTIONS

SEOUL HOSSAIN:

- This industrial Visit was really very effective which influenced greatly in my personal life basically in creative thinking and visualization. This visit was mainly on prototyping that means how to make a pre-design in any project or anything else. This program made me confident to do a project without any hesitation and that is a massive achievement for me.

TIARA AFDELY PUTRI:

- This design thinking lesson gave me a new thing to learn and taught me that we can build a future. All we need to do is find something that has a problem on it and try to solve them, not to spread them. Moreover, it also gave an impact to myself that I should do more positive stuff in order to build a brighter future with technology.

RAYHAN SHARIF APON:

- Industry visit to OneMaker Medini helped me to get some new and wonderful experience in my life specially design thinking. It gives us the opportunity to apply our creative mind. The times we live demands innovation. it's really very hard to succeed without innovating. Design thinking is the toolkit of innovation. We don't know what will happen in near future. Design thinking is like a map of future, you may not know from the beginning exactly where it will take you, but you can be confident that your destination with design thinking will be innovative, relevant and amazing.

NUR QAMARINA BINTI TUAH:

- I would like to say that I am grateful for being given the opportunity to join the industrial visit at Medini Mall. From this industrial visit, I had gained some information about designing a product during Design Making and Thinking workshop. We were collaborating with all members of Group 2 to create an idea how to design a part of future school. We started to design and build a library with a lot of facilities in it. Last but not least, I have learned that we need to be a critical thinking so that we can think outside the box in order to solve the problems quickly. I also learn that we need to be creative so that we can create something which are amazing as people will like to view our products.

PUA LEE LING:

- I gained a lot of knowledge during design thinking section. I learned about the team work, time management and also think creatively. My goal is to be a successful programmer regard to my course – Software Engineering. It brought me some impacts so that I need to think outside the box while doing my work and also need to be cooperating with other. I will improve myself with participating activities that requires the team work, critical thinking and so on.

REFERENCES:

Rikke Dam. (2018, November 12). 5 Stages in the Design Thinking Process. Retrieved from

https://www.interaction-design.org/literature/article/5-stages-in-the-design-thinking-process