



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

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REPORT ON DESIGN THINKING

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SECTION - 03

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INTRODUCTION

If you have a problem, you will need to think of the solution, right? That is why this design thinking is for. Design thinking is basically a process of creative problem solving. It helps organizations to focus on the people they're creating for and it helps to look at the problems from a new perspective.

The most basic design thinking components are empathy, define, ideate, prototyping and deploy. Empathy is about putting yourself in place of the person or side which has the core of the problem. The problem must be desirable for human, feasible by using enough information and viable by using current technology.

Next is to identify the problem. As we begin empathy, we can observe the problem from a perspective that is more accurate. We can feel what the person feels and from that, we can see the core of the problem. The prototyping component is about turning the idea of the solution into realization. After prototyping the project, we should do the testing before it could be marketed to the public. Lastly, the feedback from the people who test it should be taken for us to make the improvement and add additional features to the product that was marketed.

ACKNOWLEDGEMENT AND DEDICATION

We have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals and organizations. We would like to extend our sincere thanks to all of them.

In performing our project, we had to take the help and guideline of some respected persons, who deserve our greatest gratitude. The completion of this assignment gives us much Pleasure. We would like to show our gratitude Dr. Sharin Hazlin Binti Huspi, our course instructor for giving us a good guideline for our project throughout numerous consultations. We would also like to expand our deepest gratitude to all those who have directly and indirectly guided us in writing this project.

Many people, especially our classmates and team members Nurul Asyikin Binti Hariyanto, Nurin Nabila Binti Abdul Razak, Nurfatihah binti Md Shah and Nurhalimatul Saadiah Binti Mohd Ramli itself, have made valuable comment suggestions on this proposal which gave us an inspiration to improve our assignment. We thank all the people for their help directly and indirectly to complete our assignment.

Detailed descriptions include problem, solution and team working

First, we went to find the targeted people which is the year 6 students. 2 students were taken for interviewing session by using video call. We asked them about the year 6 mathematics subject, either they like it or not and both of them answered they did not like it. When they were being asked why, both of their reasons were almost the same with each other. This shows that the problem is basically the same even for the other students.

The problem that can be listed from the interviews are because it is not easy for them to remember the formulas, hard to imagine the way to find the solution, the concept is hard to understand, lack of exercise, not enough time to solve the mathematical problem during exam and lastly because of the boring lectures by the teacher. We then try to understand these six problems and see from their perspectives to find the right solution for them.

After discussing these matter within the group members, we find the solution from each one of the problem which are :

PROBLEMS	SOLUTIONS
Hard to remember formulas	-Remember by making songs -Remember by drawing techniques
Hard to imagine the way to find the solution for the problem solving part in exams	-Underline the keyword -Extract only the important information

Hard to understand the concept	-Find a simple techniques
Lack of exercise	-Make a reminder for the students to answer at least 10 questions a day
Lack of time during exam	-Set a time target during exercise to train the students to speed up their pace
Boring lectures	- Make it fun - Insert a lot of graphics and animations

As for our team working, we can say that all of our team members are supportive and cooperative to each other. We could settle down all of our project work and submit it within the time limit that were given to us. From identifying problem to the last step of working process which is testing product, all of us gave our full commitment to make this project successful.

DESIGN THINKING ASSESSMENT

a) During the end of the project demonstration.

The end of the project demonstration, we still need more improvement for our prototype. We also need more students to be asked about their problems in mathematics so we can make a prototype that fulfills their needs. Our application can be used at the schools or at home. Parents can check their children's results by email. So, parents can know their children's performance.

b) During the transition between design thinking phases

- Empathy

During the empathy phase, two students from primary schools were taken for the interview about their problems in mathematics. We asked if they like to learn mathematics or not, what type of learning style they can accept, why they don't like mathematics and a few questions. We made the interview via video call and we recorded using screen recording. We list down all the problems and search the solutions.

- Define

During the define phase, we list down all the student's problem. There are so many problems that the student's had. Next, we cooperate to search and gave a better solution to overcome the problems. When we list down the solution's process, we just took 15 minutes. We do not take a long time to think that because we got so many solutions not using an internet but our mind.

- Ideate

During the ideate phase, three of us made a design what we want in the prototype. Each person only has one design and must be different with other people based on their creativity. While, another one person recorded what we did in this phase. All our group members gave a good cooperation to make it well. Next, we presented our design in the group. We had three designs for the prototype and all the designs had their own unique and creativity. So, we decided to combine all designs to make our prototype.

- Prototype

During prototype phase, we search any recycle thing to make a tablet and finally we got parcel's box. We cut the box into rectangle shape. We make it two pieces . Our prototype is an mobile application so, the tablet help us to showed how the apps works. We drew the design of our prototype at the paper.

- Test

During the test phase, we realized that we still needed improvement because we think that we still did not fulfil the student's problem. So, we needed more empathy and more solution to overcome the problems.

REFLECTION

While completing our mini project for our design thinking, I feel that we were fortunate enough to learn and experience by ourselves on how to design and solve user or client mathematics problem. We also mesmerized by each other because when we were discussing on how to solve the problem, each member in our group gave a lot of interesting opinion and ideas on how to solve the problem until we felt confusing to get the best solution since all of them presenting such a great idea.

Since we are studying degree in data engineering, we are having the same dream, which is we would to be a data engineer in the future. Data engineer is someone that build massive reservoirs for big data. They develop and maintain such as database and large-scale data processing system. Data engineer may work together with data architect and data scientist. They often wrestle with problems associated with database integration and messy, unstructured data sets. Their ultimate aim is to provide clean, usable data to whomever may require it.

During completing this design thinking project, we learn a lot of valuable information. We realized the important of application of using design thinking in find out the solution of the problem especially for those who is working and studying in computer science sector. Apart of that, this project also encourage us to work together and share our knowledge together. Besides that, it also encourage us to gather the information from the internet, improving our thinking skill, and perform effective mathematical communication.

Since we are interesting in data engineering, there a lot of improvement that we need to do to be a part of the industry. One of them is we need to be fluent in the language and tools to help us to get hired. We also need to be extremely comfortable at the command line. Besides, we have to master in two or three programming language such as c++,c and java. This will help us to gain a lot of skill which can draw people attention that will help us to get hired. Last but not

least, we also need to understand database management and in-depth knowledge of SQL which is hugely valuable. This skill also will give us a lot of help especially if we are interested in freelancing business.