



# Innovation in classroom – Application of Design Thinking in Visual Communication Design class at Higher Education

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## **Abstract**

This paper focuses on innovation in teaching and learning process with Design Thinking approach. The innovation process starts with a question whether there is a potential in achieving a more beneficial teaching and learning process for students who study Visual Communication Design at higher education. The study case presented in this paper highlights a couple of particular courses delivered at Sampoerna University; which are “Technology, Human and Society” and “The Origin of Design”. The methodology applied in this research is the Design Thinking. The resulted innovation in the case study went through a cycle of phases which passed three aspects that suggest the strength of Design Thinking approach, which are inspiration, ideation and implementation. The result also suggests that the inclusion of users, in this case the students taking the particular courses, provide a great potential as a source of innovation if they have the right tools and do certain methodology in the innovation process.

## **Keywords:**

**Design thinking, Higher education, Innovation, Learning process, Visual communication design.**

## Introduction

In today's age where people are closely related with technology, innovations are needed to support human's productivity; not just in workplaces but also in classrooms. Although teaching and learning process at Visual Communication Design programs in higher education nowadays are usually carried out with the help of tools and technology, new and better ways are often sought to make the process of students learning a productive one in classroom. A right methodology is therefore needed to drive this innovation process not only in education in general but more importantly also in classrooms.

Design Thinking is not a new approach applied in businesses and organizations. Brown describes that Design Thinking history rooted back in to a well known story of Thomas Alfa Edison when not only he created lightbulb but also then wrapped the the entire industry around it (2008:86). Brown then adds that Edison achieved this by doing innovation with user centric approach through a direct and thorough observation of what people really want; and this is what is seen in Design Thinking today.

Design Thinking has also the potential to contribute an important part in driving the innovation process in education. As an ideology with user centric approach, Design Thinking follows a framework with a set of process for problem solving that can lead to innovation (Gibson, 2016). The implementation of this framework with user centric approach, supported by a good understanding of human psychology, can deliver a solution that fulfill the user's need (Norman, 2013:219). The case study in this paper was, therefore, conducted with a question that challenged the framework for problem solving process.

The case study focuses on the innovation process carried out in Visual Communication Design program of study at Sampoerna University, Jakarta. The case study was driven by a question of whether the advantages of Design Thinking can also be extended in education, in particular higher education, and, if yes, how to achieve it. The study case was carried out to find a better way to the learning process of a couple of courses offered in the study program, which are '*Technology, Human and Society*' and '*Origin of Design*'. To start this, this paper investigated the existed Design Thinking models that has been implemented in education. This paper then presents the case study to elaborate on the process that was performed. Finally, this paper summarizes the case study result and outline the horizon of future work.

## Previous Works on Design Thinking for Education

Design Thinking—a principle that places Human-centered Design on the front foot for creating innovations—has been applied by numerous companies and organizations to tackle problems that people face in everyday life (Brown, 2008: 86). In terms of creating innovation, it is also argued that Design Thinking focuses on user orientation in solving problems which produces innovations that have competitive advantages (Gibbons, 2016); and those advantages are:

It is a user-centered process that starts with user data as a base for creating design artifacts that address real and not imaginary user needs

It leverages collective expertise and establishes a shared language in finding solutions

It encourages innovation by exploring multiple avenues for the same problems

Design Thinking, not only successful for companies and organizations, has also been implemented by educators in schools. Teachers at Riverdale Country School has implemented this principle to create impactful solutions in their work (IDEO, 2012: 12). These resulted in not just curriculum but also spaces, process and tools and systems.

The presented case study in this paper, therefore, seeks to extend these significant advantages of Design Thinking to maximizes effective problem solving that results in innovation in classroom; especially in Visual Communication Design program of study in higher education. To accelerate the process, Design Thinking is often carried out with support of a specific methodology also known as Design Sprint. It is a process for answering crucial question through prototyping and testing ideas with users (Knapp, 2016: 35) and therefore is a practical way to support innovation.

### **The Innovation Process**

Design Thinking, that acts as a methodology for innovation in this paper, consists of three phases. It starts with the inspiration phase, then the ideation phase and finally the implementation phase. With the support of Design Sprint technique, a more detail process was performed that included identifying a problem, setting up a clear goal and mapping a user journey in ideation phase. The next process, in ideation phase, continued with a brainstorming session with remixing existing solutions and sketching. At the final phase, prototype testing was performed that lead to the result implementation. Full description on the whole processed is presented in figure 1 below.

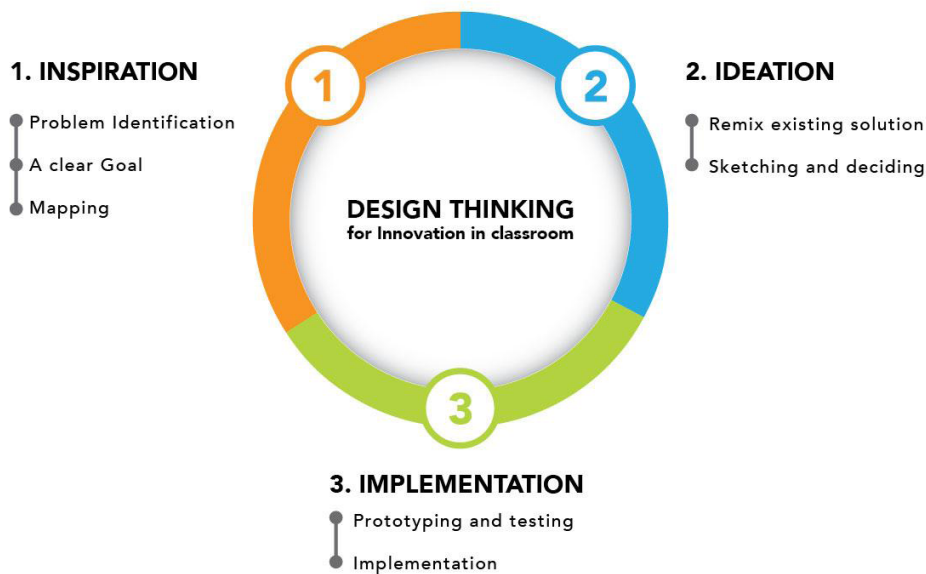


Figure 1. The Design Thinking methodology that was carried out in the case study. Source: Knapp, 2016.

### Inspiration Phase

This phase is where all of the informations about the users, in this case the students, was gathered to get a whole understanding of students needs. In order to achieve this, the case study started the inspiration phase with identifying the problem to focus on, then setting up the goal, and finally creating a journey map.

Acumen suggested this phase should be started with emphasizing on users and needs that arise, being open for creative possibilities and solution findings that suit users needs (2017). After a group discussion session was performed with the students, it highlighted the informations about students and their needs as the following:

- the problem to be focused on was how students could know and view weekly topics for a particular course before they go to class easily
- the goal was to build something that could be accessed both by students and the lecturer so that the problem above could be solved
- it was mutually decided by students and the lecturer that the tool needed that could answer the goal above was a prototype of a mobile platform that they both could accessed easily

With the main problem clearly identified and the goal was set up, the final aspect in this phase that needs to be addressed early before moving forward is a map in which the entire innovation process will be carried out. This particular map is meant to be a simple map to narrow the challenge into a specific target for the process. Knapp argues that this simple map provides

structure for future steps, which are sketching ideas and prototyping (2016: 158). The map consists of lists of users on the left and the end goal that the users would like to accomplish on the right. In between the endpoints there are arrows that represents actions the users need to do to accomplish the goal. The structure of the map that was used as a guidance for the case study is presented in figure 2 below.

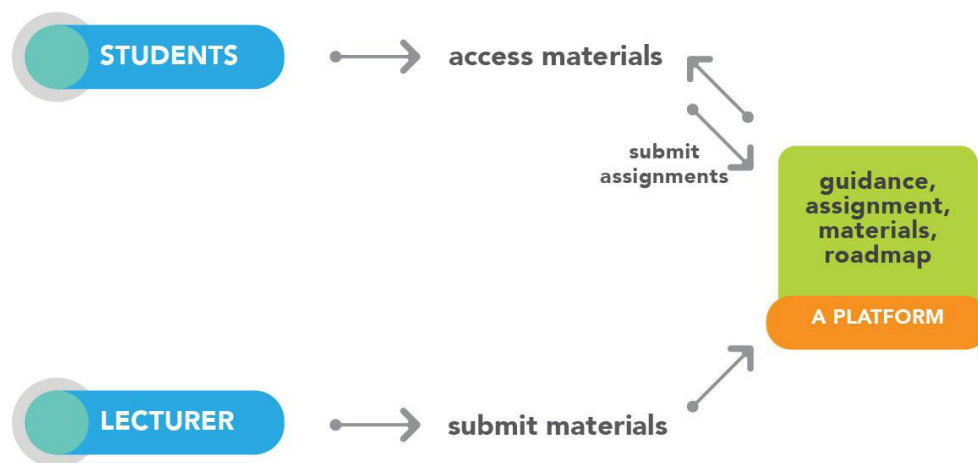


Figure 2. The map which acts as guidance throughout the process performed in the case study. Source: author's documentation.

## Ideation Phase

With the structure of the map above was clearly defined, the next phase to be carried out is the ideation phase where informations that gathered from previous phase were then transformed into ideas that will be created to build the desired solution; and this is achieved by remixing the existing solutions, sketching the possible solution and deciding the final solution. Based on the group discussion session with the students, the following ideas were agreed to be developed as a guidance for building the prototype of the platform:

- based on the problem identification on the previous phase, it was agreed that the overall view of weekly topics inside courses is an important feature that needs to stand out and be clearly visible for the students
- based on observation on the similar existing solutions and tools, ideas needs to be translated into sketches that will be turned into a prototype that will be tested by the users, in this case the students and the lecturer

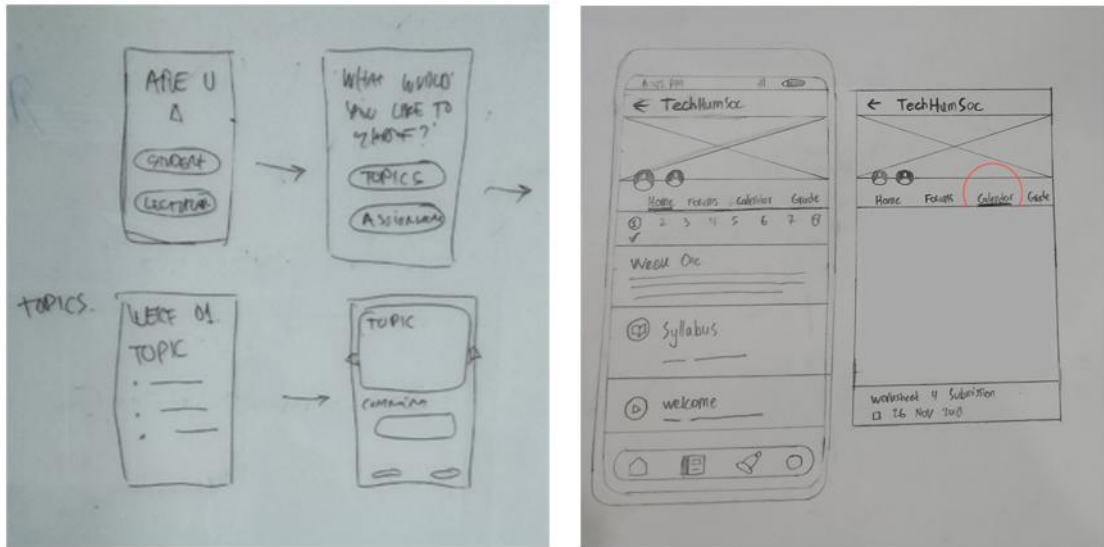


Figure 3. The brainstorming session that resulted in sketches that will be used to build prototype for the desired platform. Source: author's documentation.

Sketches are one of the most important aspect in Design Thinking. It allows users involved in the process to transform abstract ideas into concrete solutions fast and easy (Knapp, 2016: 274). The sketches are also important because they are needed to decide the final idea or solution. Based on the numerous sketches that were conducted, the final idea was then decided to build the prototype in the next phase.

### Implementation Phase

Based on the final idea that was decided, a prototype was then built so that the idea can be shared and be tested on the students to get feedbacks, learning and refinements toward a final and ideal form. Knapp suggest that a prototype is not a real product, it just needs to appear real (2016: 416). Based on that, figure below is the prototype for the desired solution.

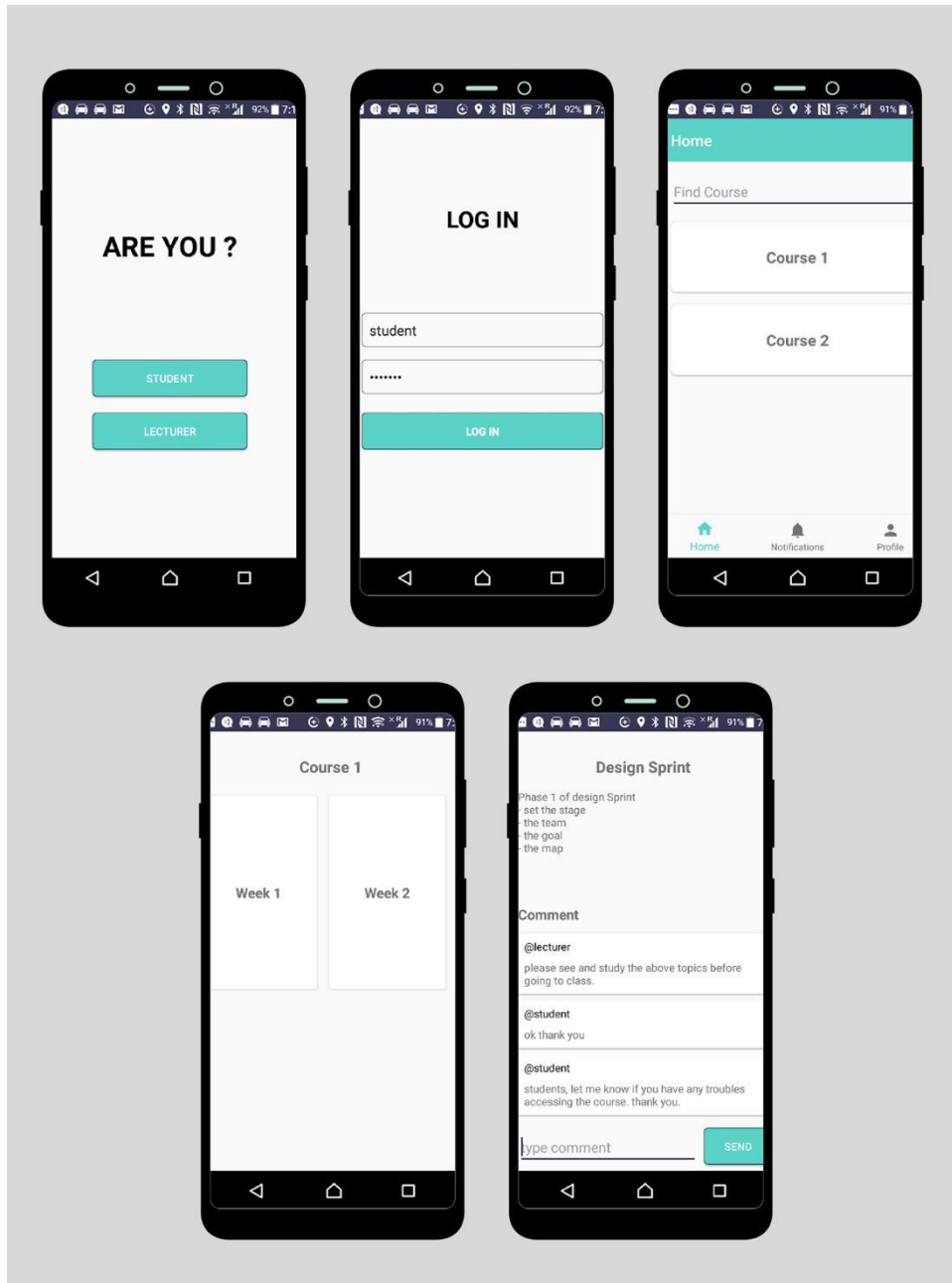


Figure 4. The prototype that was build to be tested on the students. Source: author's documentation.

The figure above shows that the prototype was built upon the final idea that was driven by the sketches which was done in previous phase and accommodating the structure that was shown in the map created in the first phase. The prototype was built so that the idea can be shared and be tested on the students to get feedbacks, learning and refinements toward a final and ideal form.

The prototype was then tested upon the students to get the useful feedbacks needed to build the final prototype. The tests were accomplished by interviewing two groups of students as

the real users for the prototype. Norman suggests that tests should be conducted in the form of sequential small tests to groups of 5 users to get the best result (2000). The initial test was conducted so that the students could get the feel and experience of using the prototype.

At the time of writing the tests are still being conducted to get the necessary feedbacks to find important patterns that are crucial. Knapp suggests that these patterns are needed to see important points that need to be considered to get the final form of prototype (2016 : 418). Norman also argues that iterative design approach is needed to accommodate the running of multiple tests to improve the design of the prototype and document its weaknesses (2000). These iterative designs and tests are the final steps of the process of the application of Design Thinking carried out in this case study.

## Conclusion

Based on what was shown on the innovation process that was performed, there are a couple of conclusive ideas that can be drawn. First, students can be involved in an attempt to do the innovation in classroom at a higher education level. In fact, they are the main component that acts as a guide and inspiration to do the innovation process. The case study presented in this paper suggests that students, if involved in the right methodology in attempt to find solution in classroom, can contribute significant parts into the problem solving process which leads to solutions that suit their needs

The final conclusion is that a right methodology is needed to boost the innovation process and Design Thinking proved to be a potentially beneficial to achieve the desired goal; even in a higher education level. This methodology is not just applicable in businesses and organizations, but also applicable in classroom. The nature mindsets of Design Thinking support not only a specific set of people to spark innovation but can be applied to many users, including students, that may have a natural aptitude for Design Thinking. The case study in this paper showcases an innovation process that resulted in a tool to support the teaching and learning activities in classroom that the students and lecturer can actually use regularly.

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