CHAPTER I PRELIMINARY

I.1   Background

Technology and internet have developed learning to the point where anyone can learn anything from anyone else at any time (Bonk, 2009). It provides an environment where anyone, especially students, can flexibly learn across different locations and times, provides a modern learning alternative, and allow students to learn independently (Graff, 2003). Deploying an online-learning improved the services' effectiveness and efficiency of the educators (Park & Lim, 2015).

According to Rosenberg (2001), e-learning is a networked phenomenon which allows an instant distribution and revision. Standard internet technology is used to deliver e-learning. It goes beyond instruction and training to deliver the tools and information to improve performance. Clark and Mayer (2016) state that the 'e' on e-learning means the digital form of the course will be later stored to be electronic form. While 'learning' means the content of the course will be able to help people to learn about certain course.

E-learning systems have become an important part of delivering the modern university curriculum (Paechter, et al., 2010). It has become an alternative to the traditional learning, to help society to move toward a vision of on-demand and lifelong learning (Zhang, et al., 2006). Based on the definition aforementioned, e-learning is the best platform for student to be able to learn and improve their performances amidst their business.

The term e-learning itself has spread around the world on many fields. Not only for formal education purpose like college and school. But also, for any kind of informal education or even for business purpose. With e-learning, people can learn some new useful information from strangers because it can bring the far closer, so people don't need to meet face-to-face if they want to learn something from someone. E-learning can give many benefits for individual and organization.

Project Management course is one of the mandatory courses for 7th semester students in Industrial Engineering Major of Faculty of Industrial and System Engineering, Telkom University. Getting a high grade is every student's goal, especially for those who are in final year semester. But in fact, there are still many students who get poor grades in this Project Management course. Non-academic business of students is one of the causes. Thus, a learning platform which enable students to keep learning in the midst of their business is needed. To know the opinion of the students about the course of Project Management and the concept of e-learning, questionnaires about it have been distributed to 56 respondents. The intended respondents are students of Industrial Engineering Major, Telkom University, who had taken the course of Project Management. The questions are focuses on understanding, learning, outcomes, and opinions of students on Project Management course, as well as the readiness, awareness, and needs of students on the concept of e-learning as a recognized method of learning.

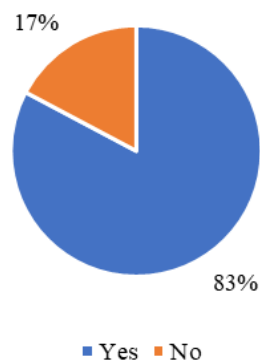## E-Learning Needs

17%

83%

■ Yes ■ No

Figure I.1 Questionnaire Results of e-Leaning Needs

Figure I.1 shows that as many as 83% respondents agreed that e-learning is a need nowadays. They are open to the development of technology and willing to accept the newest way in learning and teaching method. What platform should e-learning take? Based on the same survey as above, as many as 72% respondents agreed that video is a good way to deliver the knowledge to students. Also, 54% respondents stated that Youtube is the suitable platform to distribute the e-learning. Thereby,

the e-learning should be made in video-based learning and Youtube would be the platform for students to access it.

Project Management course is a course with three credits. In Telkom University, a three credits course has only fourteen meetings within one semester. Yet, Project Management course has too many materials to explain. Based on questionnaire results, many respondents thought that the biggest reason they difficult to understand Project Management course's material is because there are too many materials need to explain whilst the number of meetings is only slightly so that students cannot learn the material well. Diagram below shows the main reasons which students felt very influential against the difficulty of understanding the material of Project Management course.

Project Management Course

- Lot of Subject
- Less of time at class
- Unappropriate time at class
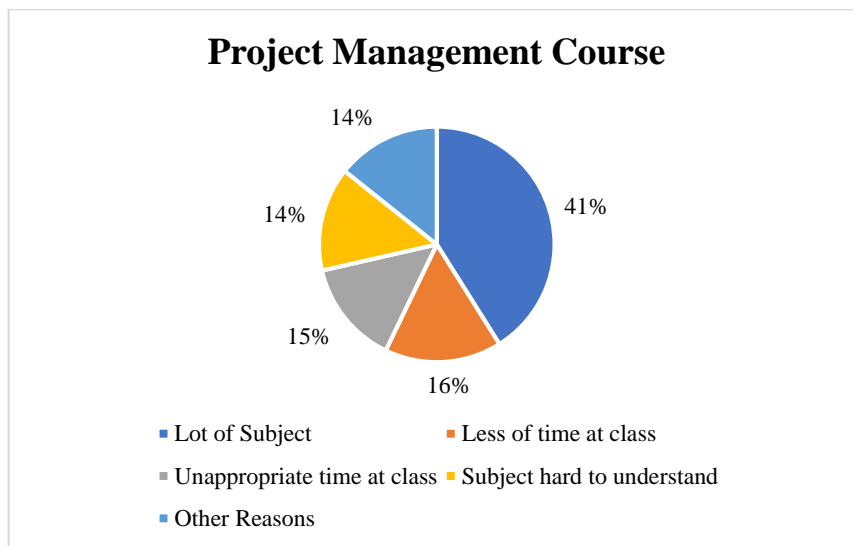- Subject hard to understand
- Other Reasons

Figure I.2 Main Reasons of Project Management Difficulty

Good e-learning content is required to help students understand about Project Management course materials. Using a good e-learning, students will be able to learn independently and be able to understand the materials well without any additional meetings with the related lecturer. With the content of e-learning also, students will be able to learn in their leisure time without interfere their other academic nor non-academic business.

According to Project Management Institute (2017), there are ten knowledge area used in Project Management course. They are Scope, Schedule, Cost, Quality,

Resource, Communications, Risk, Procurement, Stakeholder, and Integration. **Scope** management is the knowledge to define what work is required in the project and to make sure those work is completed during the project. In **Schedule** management, project team plan, manage, and control the schedule of the project due to the schedule baseline. **Cost** management manages the financial within the project, from cost budgeting, determine cost, until control cost in the project. **Quality** management includes the process of incorporate organizational quality policies regarding project planning, management and control. **Resource** management includes the project manager's responsibilities for planning, acquiring, and managing the project team. **Communication** management creates a plan for communication within the project, manage and monitor the communication so that there will be no miscommunication occurs. **Risk** management is the process to identify, evaluate, and plan responses to events, both positive and negative, that might occur throughout the project. **Procurement** management defines a formal process to obtain goods and services needed in a project. **Stakeholder** management clarify about how to identify stakeholders, satisfy the stakeholders, until analyses stakeholder's engagement. Last, **integration** management clarify about how the project should be integrated in the vary ways to conduct working process in a project.

Based on the explanation about Project Management's knowledge area, the writer interested in creating e-learning content for Project Resource Management topic. Why? Because many researchers agree that one of the most crucial elements in an organizational success is human resource function (Belout & Gauvreau, 2004). Apart from that, Project Management Institute (2017) included human resource management as one of the six fundamental functions of project management in Project Management Body of Knowledge (PMBOK).

In a project, human resources use their knowledge and skills in order to obtain appropriate quality and productivity to meet the project goals. Thus, it is necessary to assure a suitable work environment, training and developing opportunities, job design and politics to help resources coordinate their work and other activities (Treven, 2000). Because according to Maslow Theory as cited by Landy & Conte

(2004), individuals would be motivated to work when they fulfill the most basic set of unfulfilled needs. Project Resource Management will be discussing resources from acquiring resources, planning, managing, until releasing resources of the project (Mulcahy, 2013).

The creation of Project Management course (case study: Project Resource Management) e-learning content is considered as project because a project is a temporary activity taken to create product, service, or result which has each uniqueness (Project Management Institute, 2017). Project needs a plan to elaborate how to execute project with minimum risks (Kusters, 2016), because according to PricewaterhouseCoopers (2014), one of the main reasons a project failed is because of a poor planning or bad estimates in the planning phase. A planning can keep the project under control and define the participation of everyone in the project (Roberts, 2011). Thus, this project also needs a planning to minimize the risks that will appear later on.

When the planning for this project was successfully made, several methods are needed to create a good e-learning content for Project Resource Management. One of good ways to create e-learning content is to use design thinking because design thinking is the ability to anticipate and visualize new scenarios (Lockwood, 2010). Besides, design thinking is a way to create innovation by focusing on users' need (Plattner, et al., 2011), and according to Mansouri, et al. (2012), customers' needs are needed to create a good e-learning content because if we create e-learning based on users' needs thus will bring users' satisfaction and they will understand well about the content. The match between e-learning content and customers' requirement is one of the important aspects of successful e-learning project (Iqbal, et al., 2015).

Knapp, et al. (2016) stated that design sprint is one of the definitive version of design thinking. Sprint is a way to solve problem in just five days by prototyping and testing the product to users in order to ensure the product has met customers' expectation (Knapp, et al., 2016). Thus, design sprint is a suitable method for creating e-learning content because this method will define the requirements needed to create a good e-learning.

Design sprint is similar to agile method. Both design sprint and agile involve users in the process of creating the product (Melone, 2017). The creation of e-learning content needs to deliver the result quickly and needs customer's feedback thus the content can be developed quickly. Agile method is suitable for this study because agile can bring satisfaction to the customer through early and continuous delivery (Doherty, 2010). Agile method also flexible to changes, simple, and need continuous attention to technical excellence (Conboy & Fitzgerald, 2004).

The writer will combine design sprint method with agile method with intention to allow students to give feedback to the e-learning content about Project Resource Management that is still being developed. Thus, the e-learning content will fulfill the requirements needed by students, and students can understand more about the material of Project Resource Management of Project Management course.

I.2   Problem Formulation

The formulation of problems that can be defined in this research is:

1. How is the project management plan for creating e-learning content of Project Management course (case study: Project Resource Management)?

2. How the design sprint should be conducted to create e-learning content of Project Management course (case study: Project Resource Management)?

3. How is the difference of student's performance before and after watching the video-learning of Project Management course (case study: Project Resource Management)?

I.3   Purpose

The purpose of this research is:

1. Find out the project management plan for creating e-learning content of Project Management course (case study: Project Resource Management).

2. Find out how the design sprint should be conducted to create e-learning content of Project Management course (case study: Project Resource Management).

3. Find out the difference of student's performance before and after watching the video-learning of Project Management course (case study: Project Resource Management)?

I.4 Problem Scope and Assumptions

Problem Scopes:

1. The e-learning content is created only for Project Management course of Industrial Engineering Major, Telkom University.
2. The topic of e-learning content in this research is only about Project Resource Management.
3. The subject of this research is student of Industrial Engineering, Telkom University.
4. The purpose of assessment in this research is only to find out how video-learning could affect student's performance.

I.5 Benefit

After the research has been done, the expected benefits of this research are:

1. Give the information of how to create e-learning content using agile and design sprint method.
2. The final product of this research is video-learning which could be accessed by students to learn and understand more about Project Resource Management in Project Management course.

I.6 Writing Systematic

This research is arranged using this systematics:

CHAPTER I PRELIMINARY

In preliminary section, writer defines the background of problem that happens in Project Management course and why e-learning is needed to increase students' performance. This chapter also explains about problem formulations, purpose of this research, benefits, problem scope and assumptions, and writing systematics.

CHAPTER II   LITERATURE STUDY

This chapter contains the relevant studies about Project Management, Project Resource Management, e-learning, Agile methods, Design Sprint methods, and there are also previous researches. This chapter also explains about how to solve the problems in this research.

CHAPTER III   RESEARCH METHODOLOGY

This chapter defines about the steps of how to solve problems of this research using conceptual model and completion framework. Conceptual model defines about the relationship between variables in this research and defines the steps of research using problem solving framework.

CHAPTER IV   DATA COLLECTION AND PROCESSING

This chapter will explain about several data needed to solve the problems. Also, this chapter will process the data using Project Management Plan, Design Sprint, and other methods to solve the problem.

CHAPTER V   DATA ANALYSIS

This chapter will analyze the data that has been processed in the previous chapter to make a proof that the data processing is already solve the problems defined in problem formulation.

CHAPTER VI   CONCLUSION AND SUGGESTION

This chapter contains of conclusions and suggestion which given by the writer. The conclusion and suggestion soon will be used by lecturers, students, or further research.