Development of Educational Program to the Sharing Platform

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Abstract. Not only platform companies such as GAFA (Google, Amazon, Facebook, Apple), but also money platforms such as PayPay, LINE Pay, delivery service as Uber Eats, Wolt's, and various others developed rapidly due to the Covid-19 outbreak. Platforms are a social service infrastructure that mediates multiple markets and industries, and meets applicants and providers. Applicants use the platform to gather necessary information, interact with others, and purchase goods and services. Providers, on the other hand, derive income from the supply of goods and services required by consumers.

A university education will need to change and develop for applying in this situation. This study, therefore, develops a training program for the university student that can make “multi - platform services.” The design of the educational program is to reduce “food loss.” The goal of the program is to create “a concept proposal.” Since the program is designed to be a university class, the number of sessions is set at 15 weeks. The 15 sessions are organized in three stages. The first step is the “Business Model Creation,” which consists of the following three steps: (1) backcasting, (2) application of the SDGs, and (3) making a concept of a business model. The second stage is the “Data Management.” In this step, we are concentrating on data processing and utilization, such as “Understanding Data Flow,” “Platform Development,” and “Data Management.”. At last, there is “Creating a Business Concept Proposal.” In this stage, students should be presented their business model and the concept proposal to the investors.

This program was delivered to 23 academic students in November 2021. Program effectiveness was tested using the development of the business model and questionnaires. Overall, the program seems that students have figured out how to propose a future concept and construct the concept-based business model.

Keywords: platform, educational program, business model, active learning

1. INTRODUCTION

Web and e-mail were the first internet technologies. However, Social Networking Service (SNS) is now the norm. Furthermore, a "platform" serves as the foundation for providing SNS (Hong et al., 2012; Zhang and Leung 2015). A platform is a social service infrastructure that acts as a bridge between various markets and industries, connecting different buyers and sellers. Platforms are used by consumers to obtain necessary information, interact with others, and buy goods and services. Suppliers, on the contrary, make money by selling goods and services to customers. They also collect transaction history and personal information for future marketing and product development (Blattberg, and Deighton, 1991). GAFA (Google, Apple, Facebook, and Amazon), LINE, Twitter, and Instagram are examples of SNS platforms (Oh 2012). Furthermore, the COVID-19 outbreak accelerated the development of delivery service platforms such as Uber Eats and Wolt as well as digital payment platforms such as PayPay and LINE Pay (Han, et al., 2022). In Japan, the economic scale of SNS in 2020 is massive; the internet usage by personal computers and smartphones is 83.4% and 68.3%, respectively. According to another research, the size of the B to C market is around 20 trillion yen (Ministry of Internal Affairs and Communications, 2021).

The methods and contents of learning business management at a university have recently changed dramatically. It is beneficial because a student can gain experience through case studies (Su, et al., 2005; Camuffo and Gerli, 2004; Lee, et al., 2009) and business games (Nakamura, et al., 2017; Knotts and Keys, 1997; DeCoste and Prater, 1973) and can propose a business plan for contest participation and evaluation (Honig, 2004; Gartner and Vesper, 1994). This is capable of shaping an entrepreneur's mind. Nakamura (2007) (hereinafter referred to as a "previous research") also proposed an entrepreneurship education program that teaches students a series of business development processes. The process includes creating a business plan, registering with the Legal Affairs Bureau, and considering exit strategies (Kawai, 2017). Because the program was conducted in teams, it was effective in fostering discussion, presentation skills, and problem-solving abilities. However, in this platform-dominated era, the program's content must change considerably. They include data management, SDGs, ESG, CSV, backcasting, and other topics in addition to IT knowledge (Takehara and Hasegawa, 2020; Dreborg, 1996). We propose a new educational program in this study that includes items and contents required for platform development. We will incorporate a portion of the program into the previous study content.

2. OVERVIEW OF THE PROGRAM

This program is divided into 15 sessions (Table 1). The 15 sessions are broken down into three stages. The first is "Business Model Creation"; the goal of this step is to develop the business model. The "platform" is the theme of this program. As a result, the sections "Understanding the concept and situation," "Introduction to backcasting," and "Consideration of the SDGs" have been newly added in this study.

The second step is "Data Management." Because the previous study targeted the manufacturing industry, the second step was dubbed the "Product Development." They consisted of "financial planning," "patent creation," "Legal Affairs Bureau registration," and "product design creation." However, platform and data management are the primary focus of this study. As a result, we are concentrating on data processing and utilization, such as "Understanding Data Flow," "Platform Development," and "Data Management."

The final step is "Creating a Business Concept Proposal." After learning about information security and the handling of personal information, students must create a business concept proposal in this step.

The following section will provide more detailed explanation.

2.1 Business Model Creation

First, it is essential for students to comprehend "what is a platform?" Students could easily imagine the flow of "procurement," "production," and "sales" because the previous study was conducted in the manufacturing industry. As a result, they could easily create a profit structure and business model. However, in the case of a platform, it is difficult to imagine the structure, flow, and profit structure.

Therefore, "Understanding the Concept and Situation" in Week 2 is designed to investigate and analyze GAFA. Students can easily imagine a platform structure after this process is completed. After presenting their findings in Week 3, it is also beneficial for other students to share their knowledge.

"Introduction to Backcasting" in Week 4 clarifies the business concept. This program employs the backcasting technique. Backcasting is a method of planning that begins by defining a desirable future and then works backward to identify policies and programs that will connect the specified future to the present (Vergragt, and Quist, 2011).

"Organizing Business Model" focuses on organizing and building business models in Week 5. The revenue structures, a stakeholders, and information transactions are all clear in a platform structure.

The various models in the case of a platform are as follows (Täuscher and Laudien, 2018; Langley and Leyshon, 2017; Zhou, et al., 2021; Subramanian, et al., 2021):

(1) Advertising revenue model
(2) Online store sales revenue model

(3) Content/service billing model
(4) Matching service (commission) model
(5) Carrier/ISP billing model

The students choose and build the business model based on the concept discussed in Week 2.

In Week 6, during "Consideration of the SDGs," which has not been mentioned in previous studies, we will clarify the connection between a platform activity and the 17 SDGs. For example, if we create a business model based on the concept of food loss, we consider how the act of "procurement" affects suppliers and producers from an SDG standpoint.

Table 1: The educational program.

Weeks	Steps	Lecture Content	Purpose/Content	Format
1	Guidance			Lecture
2	Business Model Creation	Understanding the concept and situation	Investigate and present cases such as GAFA. Imagine the "platform"	Group work
3		Presenting the concept		Presentation
4		Introduction to the backcasting	Understanding the backcasting	Lecture and group work
5		Organizing the business model	Marketing, Income and Expenditure forecast (Profit and Loss, NPV); Preparation of financial statements	
6		Consideration of the SDGs	Understanding of SDGs. Understanding the changes by making it a platform	
7		Presenting the business model	Presentation	
8	Data Management	"Understanding Data Flow and Data Management	Clarifying inputs and outputs from Data Flow diagrams and Use Case diagrams	Lecture and group work
9		Platform Development	Proposing an interface and a screen transition, Management Information Systems, and Production Information Systems	
10		Data Management	Utilization of data analysis, machine learning, etc.	
11		Presenting a platform	Presentation	
12	Creating a Making Business Concept Proposal	Security, Personal Information 1	Treatment of the security and personal information	Group work
13		Security, Personal Information 2		
14		Making Business Concept	Making Business Concept	
15	Final presentation			

2.2 Data Management

Students frequently believe that the theme of IT is programming and technical aspects. However, in this program's "Data Management" steps, students learn how to obtain data from a website, use it, and excise it for developing sales and advertising.

In Week 8, "Understanding Data Flow and Data Management" comprehends data flow. This step applies a Use Case Diagram (Ramle, 2021; Sabharwal, et al., 2017) to a data stream within a platform. In "Platform Development" lecture in Week 9, students use paper prototyping (Snyder, 2003) to propose an interface and a screen transition. Additionally, we have added a section on "Management Information Systems and Production Information Systems." It is the first step in learning how to manage and use procurement, inventory, and sales information. In Week 10, the "Data Management" class will look at data analysis using machine learning (Zhou, 2021). As previously stated, this course does not focus on programming. As a result, we have already written Python Code and distributed it to students. They employ it and ask questions such as "What kind of campaign leads to a deal?" and "What can we recommend based on your web browsing history?" "Using page transitions to predict consumer trends," "Managing inventory and order quantities."

2.3 Creating a Business Concept Proposal

"Security, Personal Information" lectures in Weeks 12 and 13 teach students about information security and how to be cautious when acquiring personal information. Following that, they develop their business concept proposals.

The business concept proposal includes the following items:

(1) Purpose and overall vision of a platform
(2) Outline of business model
(3) Data management
(4) Income and expenditure plan
(5) Exit strategy

"Exit strategy" is the consideration and plan that includes financing, listing, acquisitions, and withdrawals.

3. PROGRAM PROVISIONAL IMPLEMENTATION AND DISCUSSION

3.1 Program Provisional-implementation

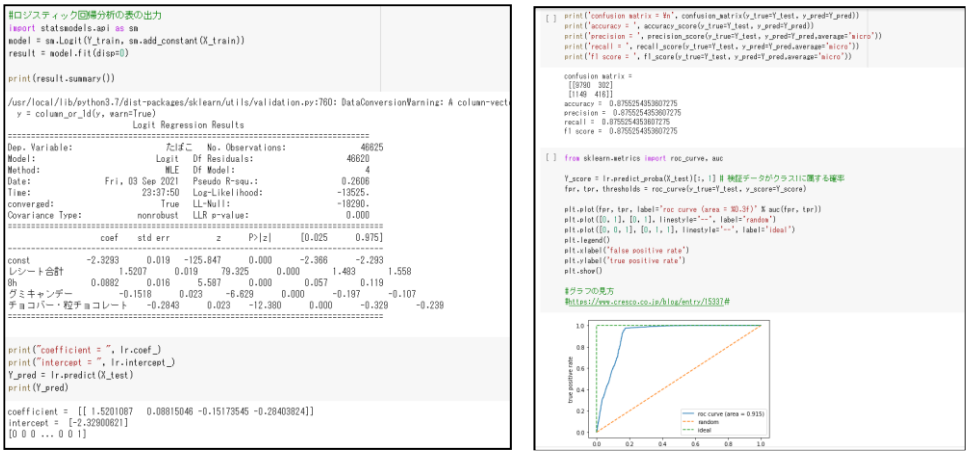
From November 2021, 23 university students will be the part of this program. This paper analyzes and discusses the outcomes of "Week 10: Data Management," as well as a questionnaire given to the participants. Backcasting was used to clarify the business concept and unify the theme of "food loss." The students were asked to analyze the following data using actual POS data:

(1) Basic analysis
(2) Linear regression analysis
(3) Logistic regression analysis
(4) Hierarchical clustering
(5) Association analysis
(6) Decision tree analysis

The goal here is for students to analyze data using Python programs and discuss the results of their analysis rather than studying Python programs. The Python screen is depicted in Figure 1.

3.2 Discussion

Following the program's implementation, a comprehension questionnaire was administered. In the post-implementation data management questionnaire, comprehension of the following methods was low, ranging from 3.364 to 4.091: basic analysis, standard regression analysis, cluster analysis, logistic regression analysis, decision tree analysis, and association analysis. The answer to the question, "Was the content difficult?" was also 3.910. It is necessary to devise methods for students to understand the method as well as to experience computational processing. However, the results for "Was it easy to work on?" and "Did you want to study it yourself?" were 4.000 and 3.864, respectively, indicating that the course may have piqued their interest in the subject.

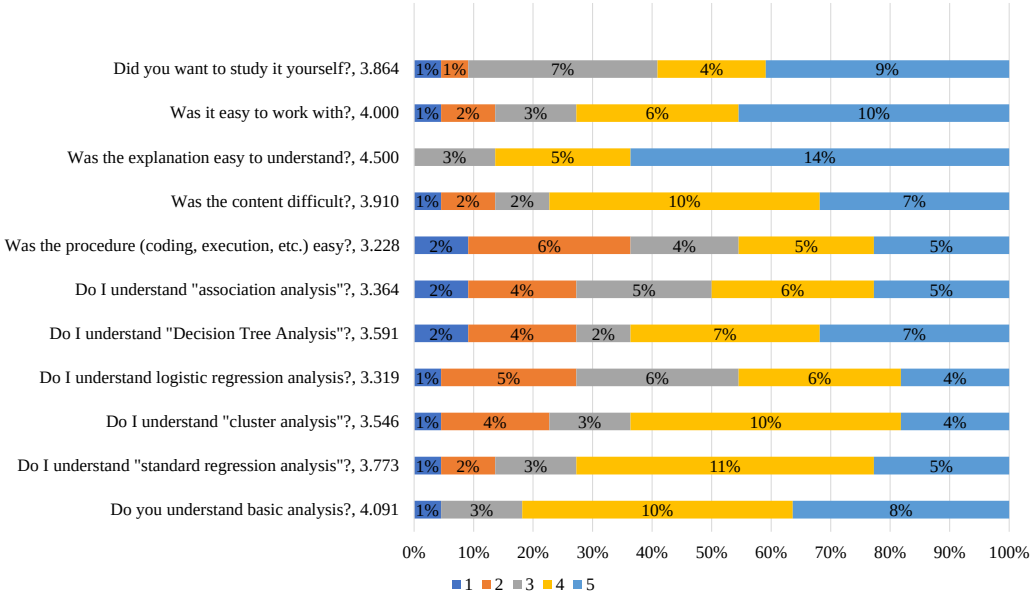


Figre1 Python exercise screen (as a partial).

4. CONCLUSION

We created a 15-session educational program with three steps to educate students about "platforms," the mainstream of IT. Students built a business model in the first "Business Model Creation" step and understood "Introduction to Backcasting" and "Consideration of SDGs." In the second "Data Management" step, students learned about data flow, its processing, and utilization through "Understanding Data Flow and Data Management," "Platform Development," and "Data Management" sessions. After learning about the importance of information security and the handling of personal information, students were required to develop their business concept proposal in the third "Creating a Business Concept Proposal" step. A portion of this program was implemented for students, and the program's effectiveness was validated through actual business model creation and questionnaires. Future issues include (1) class implementation (15 sessions), (2) development into education for working adults, and (3) further understanding of areas of improvement and shortcomings.

Table 1: Questionnaire of data management comprehension.



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