

Organizing Project-Based Learning to Commerce Students: Enhancing Human Resource Development

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Abstract: This study aims to describe the project-based learning courses to prepare university students to be business-ready for future career success. Through project-based learning, the courses provide students to address real business problems in teams to acquire practical experience. This study used a case study method and draws on survey responses from undergraduates and informal interviews with the client company, a major railway operator. The assessment by the students and employees in company A indicates the success of the program to prepare for future career success. However, there is a gap in the industry needs for the courses to extend the project to its implementation and for the university to conclude in a semester without implementation. The study found that the courses offer benefits to the students, the Department of Commerce, the employees of the company, and the top management. This study proposes that the students, the Department of Commerce, employees of the client company, and top management to mutually provide and improve knowledge and the skills of each other. For practical implication, new graduates of the company can be incorporated into the courses to develop their human resources to sustain the relationship with the clients.

Keywords: career education; employment; human resource development; independence; project-based learning; teamwork

INTRODUCTION

In recent years, project-based learning (PBL) has been gaining attention as one type of active learning. It has been increasingly used in universities in industry-academia projects for students to foster independence as well as to prepare them to be business-ready. Increasing complexity and rapid changes in business management have significantly affected the business world. To address complex decision-making in business, the courses incorporate organizational aspects and practical experience to challenge real business problems. Most undergraduate students in commerce lack in-depth real-world experiences including organizational contexts. Therefore, learning must incorporate organizational contexts and gain practical experience for a successful future career.

This study examines the project-based learning courses specifically with the major railway operator to prepare undergraduates for better employability and successful future career. PBL is one approach to meet the needs of the industry (Pearlman, 2009). The three courses that offer real-world experience in the Department of Commerce in the university are freshmen PBL, theme practical learning, and internships, which provide both theory and application. This study

focuses on the freshmen PBL because experiencing problem-solving in real business in their first year helps the students recognize the skills and competencies they lack and acquire them while they study at the university. Thus, it is helpful that the students are provided opportunities to interact with the company employees and managers and gain real-world experience.

In 2006, the Ministry of Economy, Trade and Industry has drawn up essential competencies for a 100-year life as the basic competencies necessary to work with diverse people in the workforce and the community (Ministry of Economy, Trade, and Industry, 2018). The three competencies are namely, an ability to step forward (action), competency to think through (thinking), and teamworking skills (teamwork). These competencies must be achieved to prepare students for better employability and future career success. However, in the university, individual development is mainly the focus. Arthur et al. (2001) claimed that one approach that improves the development of both individual and organizational is PBL. PBL is referred to as “the theory and practice of promoting individual and collective learning through projects” (DeFillippi, 2001, p. 5).

The study is structured as follows: First, it introduces an overview of the courses; second, it explains the partner company, a railway operator, and the case study; third, it discusses the assessment of the effectiveness of the course and the positive implications on the students’ future business careers and employment and fourth, the benefits of the PBL; and finally, the proposals of mutual enhancement of human resources development in the industry and the university.

This study provides evidence that PBL can be effectively practiced and can be advantageous for the students, the Department of Commerce, the employees of the company, and the top management. The following section discusses the PBL experience.

PROJECT-BASED LEARNING

In project-based learning, the students acquire learning from experiences in real business, in communities, or other social contexts (Roberson & Merriam, 2005). PBL was created for graduate medical students to prepare for their work as an alternative approach to traditional teaching (McKeachie & Svinicki, 2014). To solve real-world problems, the students discover and analyze the problems. Students must make decisions on the problems from the information they acquired (Nargundkar et al., 2014). PBL is also used in organizations in creating and acquiring knowledge within projects and transferring knowledge to other sections of the organization (Scarborough et al., 2004). PBL enhances organizational learning (Keegan and Turner, 2001).

Yew and Goh (2016) argued that PBL courses are more effective than traditional approaches to acquire and retain long-term knowledge instead of short-term knowledge focusing on skill-based assessment and combination of knowledge and skills. PBL develops the general qualities of the students, combines the academic and industry approaches, and motivates students to encourage active learning (Birch, 1986). Therefore, PBL is suited to learning

complex cross-functional problems of business. Participants seek solutions to complex and varying real business problems in groups by collaboration which help them to learn (Nargundkar et al., 2014).

In addition, the intergroup competition in PBL enhances creativity and improves productivity in teams (Baer et al., 2010). Team rivalry helps to nurture collaboration and improve performance (Bornstein & Erev, 1994). Past studies have shown that team competitions improved productivity and decreased inefficiency (Mulvey & Ribbens, 1999). Teamwork is established and increased collaborative results. The freshmen PBL is created upon combining these academic and industry approaches including approaches to address the cross-functional problems and intergroup competition.

COURSE DESIGN

To nurture more independent commerce students, we implement elective PBL courses for the first-year students in the first semester. Often, the PBL is designed for third-year students to prepare for their business careers. However, we provide PBL elective courses for the first-year commerce students since they do not have many preconceptions. According to the Future Skill Project Study Group, which our PBL was derived from, the purpose of conducting on the first-year students is that the students can recognize the difference in learning between high school and university at an earlier stage. In most Japanese high schools, there are answers to most learning and they are required to answer them speedily and accurately. On the other hand, in the university, there are multiple answers to one problem, and students are asked to identify their answers. The project enhances independent learning, which is necessary in the business world.

The project-based courses offer actual hands-on experience in the business. The students work in teams and the teams compete with one another to present the best solution to the company. They identify the actual problems within the organization and are responsible for collecting and analyzing data from different sources. The courses offer cross-functional experience. The project-based courses incorporate multifunctional teams by the creation of a social context as in real organizations. We concentrate on the competitive norms as in the real business settings.

The courses involve cross-disciplinary knowledge; thus, the projects should have enough depth and complexity to work in groups instead of individually (Desai et al., 2014). Clients are secured from the university alumni association and range from large multinational companies to mid-sized companies. Clients accept their offers on a volunteer basis and receive no compensation for the courses. In response to the Covid-19 pandemic, securing the clients was not easy because some clients went out of business or were committed to other pressing issues due to Covid-19. Although the courses usually had two companies involved in one course, this was changed to one company involved in one course.

The objectives of our freshmen courses are: 1) to develop independence and learn proactively 2) to gain interest and understand the real-world society and 3) to recognize the existing skills and competencies; and to understand the skills and competencies necessary in real business to design the learning in the rest of the university. In addition, by working in teams, the project aims to enhance students' communication skills. To complete the projects within a semester of their first year, the project courses do not include the actual implementation of the projects.

By providing real challenges of business, the project offers students to experience of addressing the real challenges that the companies are facing. Simultaneously, the students collaborate and compete, and learn from each other. Next, this study explains the case study of the human resource development in one of the course projects, the company involved and the students that comprise the case study project.

HUMAN RESOURCE DEVELOPMENT

This study focuses on the two project-based learning courses for the first-year students to address the problems of company A, one of the major private railway operators in western Tokyo, Japan. Their problem was “to improve the value of the stations that have fewer passengers and revitalize the town”. The two same courses were conducted with the same client, the private railway operator on the same day consecutively. These project-based learning courses were implemented once a week in 100 minutes-class from April 2021 to July 2021 for the 14-weeks courses. 30 students are registered per class with two PBL classes with the railway operator with a total of 60 students. The courses are popular that the administration draws lots to select 30 students per class. The students work on their projects within the classroom face-to-face and out of the classroom online to discuss in teams. Before Covid-19, the students conducted fieldwork, however, this was not possible due to the restrictions of Covid-19 in the 2021 spring semester.

By utilizing the existing resources around the stations, the students draw up plans to revitalize the area around the stations and enhance values in the area. The target stations were 16 stations in the peripheral of the company A railway line. Through the project, the students are provided opportunities to experience cross-functional work and to address the problems of the real organization. The projects involved strategic challenges and cross-functional tasks. The real issues usually involve different aspects, thus, the various functions must contribute to making the project successful.

STUDENT TEAM AND TEAMWORK

In our project-based learning course, one team is composed of five or six students. The team was selected by the instructor before the courses began. The instructor takes into account the various components such as gender to form teams. The teams cannot be changed after the courses began. In the final

presentation, they compete with each other to present the best solution to the problem. The employees in company A evaluate to decide on the winning team. Teamwork is considered one component of evaluation and assessed if they have worked in teams as the organization in terms of collaboration, leadership, diversity, and planning.

Although companies put importance on working in teams, some scholars seem to argue that new graduates lack teamwork skills (Thacker & Yost, 2002). This is increasingly been an issue because of the Covid-19. The students have less opportunity to work in teams in high school and university with many events being canceled and have insufficient teamwork experiences. For example, in one team, the leader could not listen to other members' opinions and was unable to develop their business plans. The author facilitated the team after some classes. As the team asked for questions and support from the employees in company A, the manager of company A conducted the online session with the team. The manager of company A mentioned that the team seemed to be not used to working in teams. It is necessary for students to work in teams to prepare for their future careers. Knott and Kayes (2012) argued that the faculty and business school are responsible to conduct team-building training that offers students to learn to work in teams, the team development process, and enhance teamwork skills. It is one of the important skills in the organization to pursue the project.

THE OVERVIEW OF THE COMPANY

Company A is a major private railway operator and part of a large group company that runs a variety of businesses besides transportation such as real estate, construction businesses, leisure and services such as hotels, restaurants, and travel agencies, and retails such as department stores. The railway line stretches to the outskirts of Tokyo with many passengers commuting to central Tokyo. Company A has volunteered to be a client for the courses for over 10 years.

Against the backdrop of the aging population and the declining birth rate in Japan as well as the competition among different railway operators in the area, the problem of revitalizing the area in the stations which have fewer passengers has been a pressing issue for company A. In response, company A aims to improve the values of the area by creating a variety of services for different generations so that people choose to live in the vicinity. For example, to meet the needs of elderly people, company A has established elderly housing with care and provided mobile grocery sales by trucks for elderly people who live in the distance from the stations and grocery stores. For the family with children, ten nursery homes were established; and for the workers, the satellite offices and company-led nursery were created.

PROJECT AND INTERACTION WITH THE RAILWAY COMPANY

There were numerous opportunities for participants to interact with the employees in company A. The employees in company A provided the following

opportunities for interactions: one class to introduce their company and present the problem, three classes to ask questions, two interim presentations to give feedback, and one final presentation out of 14 classes in the course. Seven classes or half of their courses offered interactions with the client. Besides this, the employees in company A offered online sessions for students who asked questions by emails.

The two classes which company A was involved had six teams for each class. Two classes worked to seek solutions for improving the value of the stations that has fewer passengers and revitalizing the town. Participants began by gathering data on the stations that have fewer passengers on the company A railway line. Although most of the participants use the company A railway line, they are not aware of the urban areas with fewer passengers. The manager, the associate manager of the strategic department, and a new graduate in training in company A helped by going around the teams. The employees in company A hoped that the participants could conduct fieldwork if possible. Participants also asked if they could go see the sites near the stations with fewer passengers in teams, however, this was not possible due to the restrictions of Covid-19. They collected data on the websites checking the images and videos. Participants asked company A about the specific areas and problems that they found through the data. After researching the actual situation, the problems are identified and the scope is determined. Some teams targeted tourists and some potential residents. The teams experienced grappling with real business problems and interacting with the manager and the associate manager in company A. The employees in company A aimed to follow up on the students face-to-face as much as possible and to support them when the students are stuck. By interacting with the employees in company A and the instructor, the participants realize the complexity of the problem and ask many questions.

REFLECTION

At the end of the course, the participants have reflections where they reflect on their actions to complete the learning cycle. The participants discuss if they worked well in teams, what roles they played within the teams, what competencies and skills they lacked, and what they could do to overcome their weaknesses in the coming years of the university. They were asked to respond to the questions to assess the course. Moreover, debriefing sessions with the industry and faculty are conducted after the end of the course.

COURSE ASSESSMENT

The assessment of the effectiveness included qualitative evaluations from students and the manager and the associate manager in company A, the major railway operator. This section discusses the course assessment.

Assessment of Overall Course Impact

The qualitative responses of students to open-ended questions on the effectiveness of the courses are indicated in Table 1. It shows an evaluation of the skill development, course content and engagement, and preparation for future careers which represent the responses. The students were asked what they find most valuable about this course. Most students had positive responses to the course. The evaluations of company A are summarized in Table 2. The high evaluation and favorable comments of the students are in line with Desai et al. (2014).

Table 1. Student Evaluations of the Course: What Did You Find Most Valuable About this Course?

Response Category	Verbatim comment
Course content and engagement	<p>Hands-on learning was achieved through active learning. Worked on the problem of company's real problems that have no specific answer. I was able to work with the company and was able to have practical experience. Learned new ideas that I would not think of from the other team members. The course was student-led and proactive learning was enhanced. Students exchanged opinions and took initiatives to solve the problems. I was able to experience which I cannot experience in other classes. It was good that we address the real-world problems.</p>
Skill development	<p>I was able to work in teams and collaborate to solve the problem. Improving communication skills Enhancing critical thinking skills Thinking from various perspectives Problem-solving skills Because there were no answers to the problem, we addressed it proactively. I improved logical thinking and gained new knowledge.</p>
Preparation for future careers	<p>This course provided experience of what work is like. It contributes significantly to my future career plans. It was a good opportunity to think about my future careers. It was good that I was able to experience this at an earlier stage. We could experience addressing problems close to actual business. I recognized what was lacking for my future careers. This course gave me an opportunity to think about my future choice.</p>

Table 2. Company A Evaluations of the Courses Involved

Response Category	Verbatism comment
Course content and engagement	"We always have difficult problems compared to other companies. The students seemed to struggle. This is my third year involved with this course, but overall I think they did fairly well. I was surprised that the two classes were totally different although we conduct the same classes. One class was dependent on their ideas and the other class followed the process of determining the actual situation, identifying the problem and seeking solutions to the problem. We wish that students could conduct fieldworks if possible to see the real situations".
Skill development	"It seems that many high schools do not provide teamworking opportunities recently because of Covid-19. So, some students acquire team-working skills in this course. If that team leader could listen to other members' opinions in the discussion, they would have been more successful".
Preparation for future careers	"If the students can learn to draw up business plans through these processes in the course, they could work in companies. Because we do the same when planning business. Some students think like we do. It would be good if some students from the two courses can join our company when they graduate. In fact, every year, there are several students from this university that join our company". (The two employees in charge are also from the same university.)

Company A’s Motivation and Needs of the Course

Although the clients are secured from the alumni association of the university, company A’s motivation and needs for the courses change because of the deteriorating business in Covid-19. There is a gap between company A’s needs and the university in conducting the courses. As for the motivation for the courses, the manager of company A mentioned at the beginning of the course that as company A is not so popular among the students in recruitment, they would like to make company’s fans. They aim to interest the students to their group company by introducing multilateral business besides transportation. They hope that some students from the class will seek employment at their company after graduation.

However, towards the end of the courses, company A requested to have the students’ business proposals to be implemented by the students after the courses. As mentioned previously, the implementation of the project is not included as the projects have to conclude in one semester. According to the manager in company A, they were in the red in 2021 like other railway operators. Amid the Covid-19 pandemic, people work online and the schools and universities offer online classes which led to a significant decrease in passengers for the transportation industry including company A. The manager of company A in charge of the two courses mentioned that although they are in the managing section and cannot

contribute directly to sales, they hope that they could set up projects to implement some of the students' business plans by the students. In response, the project was set up.

In the last class of the course, the freshmen students were asked if they would like to participate in the voluntary project to realize some of the 12 business plans proposed by the 12 teams in the two courses. 11 students volunteered to participate in the project outside of class. However, as this was not part of their subjects and was extended to the Christmas holidays and spring break; the students did not meet voluntarily. After the kick-off meeting, one student told the author that the other members did not respond to her message to discuss the business plans. Although the necessity of a meeting even online was suggested, it was not realized because of their busy schedules. This indicates that it is difficult for first-year students to be engaged in the project independently unless it is a class and without a facilitator. The project ended despite the students volunteering to participate. As this case has shown, the industry's needs change and may expect more from the courses when they are suffering from the deteriorating business in the Covid-19 pandemic.

Discussion of PBL Course Benefits

The PBL course benefits the students, the Department of Commerce, the employees of the company, and the top management of the company, however, sustaining the relationship with the clients can be difficult. Usuki (2009) argued that a sustainable relationship with the industry cannot be established with the PBL clients in the conventional way of asking for cooperation and clients supporting and thus, proposed the mutual support model for the three parties, namely, the schools, the community, and the company. Usually, the regional network organization is formed by different parties to achieve a common goal. Nevertheless, this model is characterized by each party utilizing other parties' resources to pursue each goal. Moreover, Miyake et al. (2017) built on Usuki (2009) using project management to PBL to develop human resources within small and medium enterprises. The industry is most likely to cooperate when they have some benefits.

This study proposes that the students, the Department of Commerce, employees of the partner company, and top management can mutually provide and improve knowledge and contribute to enhancing the skills of other parties. Students can improve their independence, teamwork, problem-solving, and communication skills for better employability and future career success. They aim to think about how they would spend their years in the university to fulfill their lack of skills and competencies. PBL is not only conducted for educational needs but also to improve the implementation of the projects in the company achieved through the PBL courses.

In the course, company A's employees provide company information to the students and acquire novel business proposals from students. The students' business proposals can be utilized by employees of company A as they acquire

knowledge of consumer behavior of the university students as they conduct the PBL. They can simulate the consumer behavior of university students and improve their business accordingly. Because the courses were conducted by teaching the students to follow the steps that company A follows in real business, the employees of the company can utilize the students' proposals that are close to project implementation. The employees of the company can save time and effort to research the background information and the other options to implement the plan. Moreover, because company A, the railway operator is striving to achieve the younger generation to live and use their railways within the aging community in the areas, the employees in company A can learn from the students' business proposals as they reflect university students' consumer behaviors and perspectives.

Furthermore, the new graduates of the company can improve their problem-solving skills. The employees of company A brought a new graduate with them until the 6th week before he was allocated to a department. The associate manager in company A mentioned that the PBL problem is difficult and that they do not ask the new graduates to address such problem. As employees in company A have job rotations every three to four years, problem-solving skills are critical from different aspects. Integrating the new graduates in the company into the courses provides human resource development for the company.

From the top management perspective, they provide the project to the PBL and can improve business by novel business proposals drawn up by the students. In addition, they may have the opportunity to employ competent students. For the Department of Commerce, PBL improves students' employability and future career success. In addition, conducting PBL helps to connect with the local business community.

LIMITATIONS

There are some limitations in providing this case of PBL course. One limitation is the availability of the client partners that are open to the university. As the case in company A has shown, the challenge is to seek a good balance between the industry needs and the university. With the rapidly changing economy, the industry faces multiple problems and sustainable relationship is a challenge.

The second limitation is that the faculty and administrators need to take the time and effort to develop and facilitate the courses. The faculty must involve closely with the industry to arrange the schedules of guest speakers and organize the sessions to align with the problems of the partner companies. Moreover, they must facilitate the first-year students who may not have much knowledge of business and business manners to deal with the clients with the cross-disciplinary courses.

The third limitation is that the students had to refrain from conducting fieldwork in teams due to Covid-19. The actual situation was surveyed through the websites and from the employees in company A. This has limited the

potential creativity of the students' plans and their experiences of surveying the area.

CONCLUSION

This study examined the freshmen project-based learning courses specifically with the major railway operator to prepare undergraduate students for future career success. The courses incorporated organizational aspects and practical experience in real business. It provided cross-functional works to address the real problems of the organization. The various functions were needed for the project to succeed. The assessment by the students and company A has shown the courses' success to prepare for future career success. Nevertheless, a gap exists in company A to implement the students' business plans after the courses and the university to conclude in a semester without implementation. The study found that the courses benefit the students, the Department of Commerce, the employees of the company, and the top management of the company. This study proposed that the students, the Department of Commerce, employees of the partner company, and top management can mutually provide and improve knowledge of each other. The courses can offer human resource development for new graduates of the company by integrating them into the courses. Furthermore, integrating the intergroup competition in the PBL nurtures the teamwork skills by collaborating to compete and elicit the best solution from the students.

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