

# Project-Based Learning in Teaching Entrepreneurship: A Review of the Literature

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**Abstract.** Entrepreneurship teaching has an important role that contributes to the creation of new businesses. However, what kind of teaching method can make this happen? This paper conducts a literature study on project-based learning research in the teaching of entrepreneurship for 20 years (2000-2021). By using systematic review, this paper collects over 200 articles indexed on Scopus. The findings show three types of project-based learning in teaching entrepreneurship: project-based learning focusing on business development, project-based learning focusing on product development, and project-based learning focusing on business consulting. How it is applied and its effect in the teaching of entrepreneurship is further discussed. Suggestions for implementing project-based learning in the teaching of entrepreneurship in the future are also present.

**Keywords:** Entrepreneurship Teaching, Project Based Learning, Business Development, Product Development, Business Consultancy

## 1 Introduction

Entrepreneurship education facilitates individual learning and acquires knowledge, abilities, and values to resolve broader difficulties [1]. Therefore, teaching entrepreneurship plays an important role, such as project-based learning (PBL). PBL is a means for instilling thinking competence and creating a flexible learning environment. Improve the ability of outstanding students [2]. PBL has the potential to support learners gain the skills and knowledge needed in today's industry. One of the main criticisms of PBL is that instructors cannot cover as much content as in traditional lectures [3].

On the other hand, to engage effectively in PBL, students must take responsibility for their learning and actively build knowledge and make meaning [4]. PBL is effective student-centered teaching identified by student independence, constructive inquiry, goal setting, collaboration, communication, and consideration in real-world practice [5]. Various research results show that students prefer mixed learning methods over traditional learning methods. When using the traditional method, more than half of the students asked for an explanation to understand the subject better. Most of the students stated that they were more prepared to face the test using the PBL method. PBL in entrepreneurship learning is an effective learning method that requires meaningful student effort. Thus, it is suggested that the subject syllabus be modified not for students [6].

Thus, teaching entrepreneurship cannot be well performed by using traditional methods but requires more appropriate methods, such as project-based learning. This paper

conducts a systematic review to answer the following research question: How is project-based learning implemented in teaching entrepreneurship?

## 2 Method

This paper conducts a literature study on project-based learning research in entrepreneurship teaching. This paper conducts a systematic review of the literature with the following stages. First, this paper reviews articles over the last two decades using the publish or perish software. The cited articles are indexed articles on Scopus for 20 years (2000-2021). The search using the keywords „project-based learning“ and „entrepreneurship“ and the software found 200 articles. In the second stage, the first screening was carried out on article titles because not all articles showed the same focus on project-based learning and entrepreneurship. The results of the first screening found only 22 articles that had appropriate titles. The third stage, the second screening, was done by reading the abstract, and it showed that only eight articles were most relevant to project-based learning and entrepreneurship (Table 1). At the final stage, the synthesis is conducted and displays the results.

**Table 1.** Types of Entrepreneurial PBL

<b>PBL Type</b>	<b>Description</b>	<b>Source</b>
Business development	Creation of Enterprise	[28]
	Innovation and Entrepreneurship Project	[21]
	Pharmaceutical management	[14]
Product development	Assembly activities	[17]
	Game-development workshop	[29]
	Ethno-STEM in the making of batik products	[8]
	Software Engineering Project	[11]
Business Consultancy	Consulting with industrial clients	[15]

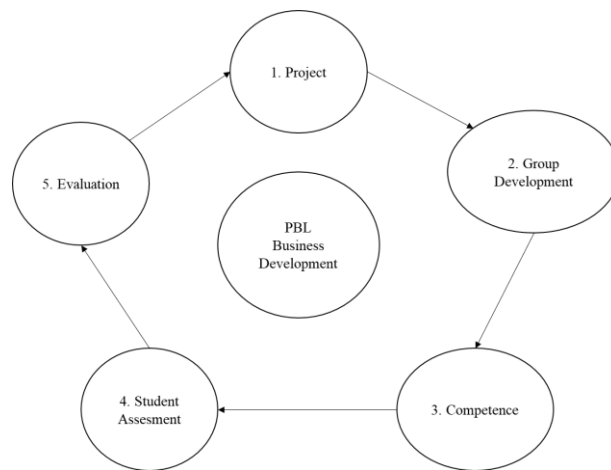
## 3 Result and Discussion

Project-Based Learning (PBL) entrepreneurship articles reviewed in the past two decades show that entrepreneurship PBL in universities is diverse. Table 1 shows that entrepreneurship PBL implemented in entrepreneurship teaching consists of business development, product development, and business consulting.

### **Project Base Learning Focuses on Business Development**

The type of PBL that focuses on business development (Figure 1) is carried out in the following stages. First, the lecturer proposes the theme of the project to be developed, for example, Creation of a Technology-Based Enterprise [28], an integrated project of innovation and entrepreneurship [21], or pharmaceutical management [14]. Thus, PBL directs students to focus on establishing a business. The second stage is group development. The development of groups is important to establish interaction in the work team, coordinate the volume of work, the time to be spent, discuss information about the project organization, the level of involvement, and help the level of students' understanding of the material. At this stage, the group can be given a particular class/space or moodle platform if using online learning [21]. The third stage is competence. Competence is divided into two technical competence and

general competence [14]. Technical competence relates to abilities or skills that link organizational functions with projects, such as business feasibility studies, site selection and layout, strategic business planning, staffing, and financial management. General competencies are the working in a team, organizational tidiness and professionalism, and present projects. The next stage is student assessment. At this stage, an assessment of student performance, perception of appropriate assessment, student satisfaction, and student loyalty is carried out. The final stage is the PBL evaluation. This evaluation is important to assess whether PBL is running effectively and the project can be successfully implemented.



**Fig. 1.** Type of PBL that focuses on business development

Shahiwala's (2017) findings are interesting that moment used up teaching and nurturing entrepreneurial tendencies, and administering needed resources might be a helpful tool to students. Therefore, academics can afford to advance the pharmacist profession's status, financial stability and development of pharmacies, and patient care quality [30].

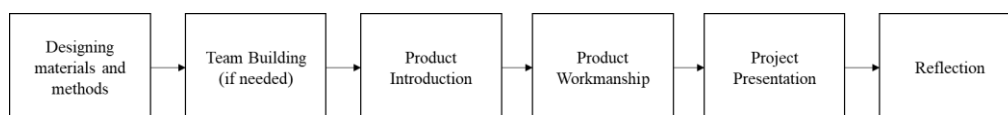
From the viewpoint of lecturers tied in the PBL, it is argued that multidisciplinary PBL provides students with a beneficial skill. Particularly in dealing with real-world problems, their innovations can be performed in partner industries. In addition, student learning satisfaction also increases. The most challenging soft skills are team and project management. The core of the whole process is team coordination. If it does not run correctly, it can disrupt the entire process of PBL [21]. In addition to team coordination, lecturer coordination is also an essential requirement for the success of the PBL experience and student perceptions and academic results [28].

### **Project Base Learning Focuses on Product Development**

PBL focuses on product development focuses on creating products, for example, assembling (such as 3D printers, remote control cars, laser tag systems) [17], game development [29], and designing Batik motifs [8], or develop specific software [11]. In product-based PBL, there are several stages (Figure 2). The initial stage is to design the materials and methods that will be used. Game development, for example, is necessary to modify the curriculum design to ensure students learn appropriate materials and are competitive in the job market, given the rapidly changing gaming field. For example, in the making Batik, lecturers use material design

by including ethnoscience in the Organic Chemistry and Entrepreneurship course. This PBL uses the Ethno-Stem method, i.e., traditional essential oil distillation at Cepogo, Boyolali, Indonesia.

The next stage is to develop a team if needed because PBL focuses on creating or developing products. Then proceed to the stage of product introduction and product work. In the final stage, students reflect on their work. Game Development and Entrepreneurship facilitate the cognitive learning process through student-centered learning and challenging them to learn through experience. The expert creates the appropriate educational scaffolding. Materials from all the courses are integrated to allow students to see the merits of the theoretical concepts covered and relate to game development [31]. PBL is an innovative action in learning. It makes students face real projects that can take place in a real work environment. The student must manage the whole project and develop a model to tackle the project. Students learn how to do the planning, search and selection resource, improvement, and carrying problems. Solving these problems helps them perform better when handling project development in companies and institutions [17].

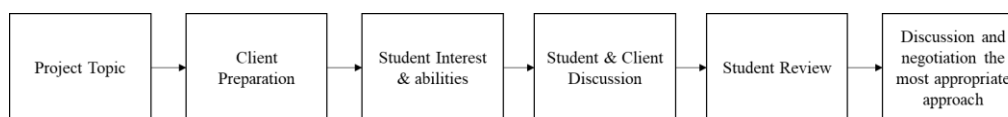


**Fig. 2.** Type of PBL that focuses on Product Development

In education, finding the right stakeholders who are able and willing to invest the necessary resources is the challenge. This stakeholder will collaborate with students. From the lecturer's view, the challenge is to prepare students to work in real-world contexts. It is mainly the case when the student's technical skills are not aligned with the skills required in the tools used by professionals [11].

### Project-Based Learning Focuses on Business Consulting

Project-Based Learning focuses on consulting with the industry. The implementation of this type of PBL consists of several stages (Figure 3). First, prepare the topic of the project to be carried out. Next, prepare clients from the industry who are willing to become consultants and, if possible, participate in assessing student activities (see Table 3). The third stage prepares student and client meetings for mutual discussion. The fourth stage is review. Students are asked to review and present the results of their consultation. The last is the discussion and negotiation stage. This stage is aimed at selecting which approach is most appropriate for the student project.



**Fig. 3.** Type of PBL that focuses on Consultancy

**Table 3.** Example of Client and Student Consultancy

Client Industries and Sectors	Project Topics and Issues
Automotive; Club; Drink; Fashion; Food; Furniture; Gallery; Health; Hotel;	Acquisition targets; Identifying customers; Launching a new product;

Jewelry; Museum; Public Relations; Publishing; Retail; Shoes; Travel; Wine.	Pricing; Raising awareness; Salesroom layout; Service levels; Social media presence
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Sumber: [15]

One of the advantages of the consultancy method is in the non-academic field. Students learn many things that are necessary for success in situations like real-life work. The primary benefit for students is behavioral skills like communication, confidence, English language, planning, thinking, and time management. PBL offers them different skills beyond what students typically obtain in traditional teaching and learning environments [32].

Involvement in external projects allows students to promote vital skills that are not always reflected in test or subject scores. Collaborative skills include patience and compassion, interpersonal competence, accountability skills, soft skills, critical thinking, professional knowledge, communication skills, teamwork, leadership, also consulting skills [32]. One of the important roles is the academic supervisor or lecturer and his/her expertise in appropriate industry and sector knowledge and practical and empathetic client relationship management skills [15].

#### 4 Implications and Suggestions for Future Research

The results of the PBL review in entrepreneurship show that PBL is divided into three types: business development-based PBL, product development-based PBL, and business consulting-based PBL. The three types of PBL have different focuses. Business-based PBL is intended to develop a business. In contrast to product-based PBL, this type focuses on the development of a product. Meanwhile, consultation-based PBL focuses on discussions and consultations with practitioners in the industry. Of the three types of PBL, of course, the application can be different. PBL based on business development and product development can be applied to undergraduate students because they are more focused on finding work experience after graduating from University. Consulting-based PBL seems to be more appropriate for postgraduate students because they are general practitioners, both workers in industry and entrepreneurs. Thus, the PBL type of consultation follows learning objectives at the postgraduate level.

The research findings show that teaching entrepreneurship is not appropriate if it uses traditional teaching methods. Combining PBL teaching methods by choosing either to focus on business development, product development, or business consulting will give students a clearer perspective on entrepreneurship.

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