

Using Project-Based Learning (PBL) in Management Accounting Course: Lesson and Reflection From Entrepreneurship Education *

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One of the main issues in entrepreneurship education is integrating core course to entrepreneurship course. Many educators fail to integrate core course and entrepreneurial education. The purpose of this study is to investigate whether the integration of management accounting course in entrepreneurship course will accomplish the objective of entrepreneurship education. This study is derived from the experience of entrepreneurial project course at Management Department of Ciputra University, Surabaya. This study uses an explorative approach to investigate the implementation of project-based learning (PBL) in management accounting course. The result shows variation of output. There are about 91% business can be implemented by business groups and about 33% target achieved. Several management accounting techniques are used in this study, such as balanced score card (BSC), activity-based costing (ABC), activity-based management (ABM), cost-volume-profit (CVP) analysis, and tactical decision making. This study found that by using management accounting techniques, student can run the business well especially when they have to make decision. This study strengthens the role of management accounting in business practices, and furthermore, this study proves that management accounting is beneficial for entrepreneurs who are still in the start-up business stage.

Keywords: management accounting, entrepreneurship, project-based learning (PBL)

Introduction

During years of 2004-2007, the total number of unemployment is increasing, and 32.6% of the unemployed are graduated from college (Ritonga, 2008). Again in 2007, the number of educated unemployment is about 5,660.036, and the range varies from high school to college (Ham, 2008). According to Central Bureau of Statistics (CBS), the unemployment from college graduate reached 1.1 million (Primartantyo, 2012). Several causes such as the competition of job market are increasing, since there is less job market availability comparing with students who graduate every year. Many graduates are reluctant to start their own business. One way to reduce unemployment is through entrepreneurship (Tanan, 2008).

There is a myth that that entrepreneurship begins from the day it was born, called as talent. Therefore, only

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people who were born as entrepreneurs will become entrepreneurs. But Ciputra emphasizes that entrepreneur can be shaped by 3L, that is, “Lahir” (Born), “Lingkungan” (environment), and “Latih” (training). Born means that a person whose parent is entrepreneur will automatically become an entrepreneur. Environment means that a person who stays within entrepreneur environment will gradually become an entrepreneur. They see, feel, and act like entrepreneurs, because they were influenced by entrepreneurs. As a result, they become entrepreneurs (Radianto, 2009). For a person who does not born and stays in an entrepreneur environment but managed to become an entrepreneur, training is the key. Entrepreneurship training through integrated and comprehensive program as well as good pedagogy makes it possible for people to become entrepreneurs (Tanan, 2008). Through training, university students will be trained to become entrepreneurs.

Implementing entrepreneurship education in the university is difficult to be done, particularly if it has come into integration between entrepreneurship and the curriculum of the university. Lecturers find the difficulty in integrating the entrepreneurship with the courses, and the vice versa. The content of entrepreneurship course still engages at the level of “to know entrepreneurship” instead of “to become entrepreneurs”. Many courses only introduce and explain about what entrepreneurship is. Therefore, the students only get the knowledge and theory instead of practice. As such, it is difficult for students to develop the spirit of entrepreneurship and integrate course content in entrepreneurship project.

There are several methods of teaching in the college, e.g., problem-based learning, case study, and tutorial and project-based learning (PBL). PBL is a very useful method implemented in a course that aims to solve problems (Endahgf, 2007). This paper employed PBL to study the integration between management accounting course and entrepreneurship during one semester in the accounting department. Through this method, several entrepreneurial spirits are delivered to students, including innovativeness and creativity, opportunity creation, and calculated risk taking. Action-based research is used in PBL, as such several treatments are given to the students in order to sharpen and increase their entrepreneurship spirits. This study also tries to increase the performance of student project by implementing management accounting technique during the courses.

The purpose of the study is to investigate the role of management accounting as a tool for students to increase the performance of their business projects. Another purpose is to find out how core course (in this case, management accounting course) can be integrated to entrepreneurship course. This study is expected to give an inspiration for the lecturer of management accounting and/or entrepreneurship course to keep improving the creativity in teaching management accounting and entrepreneurship.

Method

Management accounting and entrepreneurial project 3 course are chosen in this study. PBL is used in this study to increase innovativeness, that is, emphasizing on contextual learning through the complexity of activities that are conducted by the students. PBL is done through some steps and duration, so that it is not simply representing class meeting series but also group learning collaboration. One of the most important parts of PBL is reflection (Global SchoolNet, 2000). Through reflection, students will be able to understand what they have learned. This project is focusing on product development (Kamdi, 2008). Both management accounting and entrepreneurship project 3 are in the same semester, so the integration process is easier to be implemented. Action-based research is also used in this study to make sure that management accounting course can be integrated in the entrepreneurship project course.

In the entrepreneurship project course, each group has to make real business. One of the important phases is making business plan for the project. The business plan should be implemented for one semester, and if the business ran well, then the project could be continued for the next semester. Lecturer, in this case, becomes facilitator, formulating PBL phase which begins from target formulation to evaluation. Then, facilitator formulates the topic of management accounting course that will be implemented along with entrepreneurship course.

The framework of this study is as follows.

Results

The purpose of this study is to explore how to integrate management accounting course in entrepreneurial project 3 and whether management accounting course could support business projects of the students. Management accounting and entrepreneurship project 3 course are in the same semester. Therefore, implementation of management accounting course is easier, because the students take all these courses together. PBL is conducted in order to achieve the purpose of the course. Action-based research is employed to make sure that PBL is going well. Action-based research covers several phases, namely, planning, action, observation, and reflection. Through this cycle, students will have a deeper understanding of their actions, thus increasing their awareness and expanding rationality of their actions during the assignment. In every phase, groups always discuss with facilitator in order to achieve their targets in the semester.

Target Formulation

The outcome of entrepreneurial project 3 is developing real business projects and the purpose of management accounting course is to equip students with management accounting techniques to run their business well. Students are expected to be creative in performing their businesses and also upgrading the innovative ability. Creativity and innovation allow students to develop product differentiation, so their products will bring added value for the customers. Market sensitivity is important for an entrepreneur to market the product. Facilitators are very concerned of students' capability to create opportunity and measure the marketability of their products. Calculate risk taking is to let the students be experienced with taking the risks. In the PBL, students become entrepreneurs. It means that they have to face the risk by calculating it.

The target of this study is to proof that management accounting is very important for entrepreneurs in order to achieve the goals. Another target is to increase and develop the spirit of entrepreneurship through starting up students' business project.

Designing Project Planning

Designing project planning covered dividing group, formulating regulation, planning activities, monitoring, and formulating assessment. In this phase, facilitators integrate management accounting course and entrepreneurial project 3 course that will be implemented during one semester. There are several sub-topics of management accounting course that will be implemented namely intro to management accounting, balanced score card (BSC), activity-based costing (ABC), activity-based management (ABM), cost-volume-profit (CVP) analysis, performance evaluation, and tactical decision making.

Dividing group. In this phase, students form 33 groups which consist of several business types as follows (see Table 1).

Table 1

Number of Business

Type of business	Number
Distributor	8
Food and beverage	3
Fashion	7
Services	8
Merchandise	7
Total	33

Formulating regulation. The facilitators discussed the regulation for the entrepreneurial project course. The regulation covers the rights and the obligations of students during the project. The regulation also covers report, assignment, etc. from the first day until the end of the semester.

Planning activities. The facilitators created events for students to launch their business, namely, “diversified ideas to be a great entrepreneur” and business expo. The purpose of this event is to give students the opportunity to get external capital and promotion.

Monitoring. Monitoring was performed in several activities. For example, regular visit once or twice a week, on the spot visit and regular evaluation once a week during the class hour. Students are often given the opportunity to discuss with the facilitator on a daily basis. Assignment of management accounting course in every week is also designed in order to understand management accounting techniques in practice.

Formulating assessment. The assessment is performed through several steps, namely, midterm test, final test, assignment, quiz, and the execution of the project. Target achievement also becomes an important assessment.

Designing Project Schedule

Project schedule is designed from the beginning until the end of the semester. Schedule of Business launching is designed in the early semester, that is, two weeks after the semester begun. Regular visit is scheduled, but the information of when the facilitator will visit the project is kept confidentially. Consultation with facilitators is also scheduled on a daily basis; hence, students can use this opportunity to discuss the problems of their projects with their facilitators. Weekly monitoring and coordinating are scheduled in order to gain information regarding the progress of projects. The schedule of management accounting topics is also delivered to the students as it stated on the syllabi. The structure of the course is as follows (see Table 2).

Table 2

Management Accounting Topic

Topic	Goal
Introduction to management accounting	Students understand the role of management accounting in business
Cost concept	Students understand and implement cost concept in their real business, such as calculating production cost, identifying cost behavior, etc.
BSC	Students understand the role of management accounting in strategic planning, etc.
ABM	Students can identify value-added and non-value-added activities
CVP analysis	Students can master breakeven point (BEP), profit planning, etc.
Tactical decision making	Students can make decision regarding such as making or buying decision, etc. in their real business projects
Performance evaluation	Students are able to design performance evaluation and use it in their real business projects

Other topics of management accounting were delivered during consultation of the projects, for example, when a group of students plan to measure cost efficiency, the facilitator will give the standard costing topics.

Monitoring and the Progress of the Project

Every week, facilitator visits students to observe their business group. During regular visit, facilitators make notes, minutes, evaluate, and give recommendations to students to improve their business. In each business group, the facilitator also asks what the problem faced by the students is and gives advice on how to solve the problem. Every visit always ends up with discussion. The discussion explores the weaknesses, strength, opportunity, and threat of the project. The discussion also investigates the business progress, effort to overcome problems, barriers, etc.. Evaluation is directly informed to the related students or groups, so they can improve their business immediately. Deadline and timeline for improvement are given by facilitator to students.

Weekly monitoring is conducted every once a week during the class hour of entrepreneurial project 3 and management accounting course. In the class of entrepreneurial project 3, each group gives presentation about their business performance, the barrier and the challenge they face, the way they solve the problems, as well as their future plans. The presentation is performed in front of all students, thus they can learn from each other. Discussions among students and between students and facilitator are conducted during the presentation process.

Monitoring in management accounting class also took place in the class of management accounting course. Facilitator gives students the opportunity to ask about the difficulty of how to implement management accounting techniques in their business projects. In addition, consultation regarding the project and management course could happen every day based on the available time of the facilitator. Monitoring is also done through focus group discussion (FGD). Through this method, many problems come up and many solutions are delivered by facilitator or by students themselves. For example, there is one culinary business which sells several foods, and they find that only several foods are marketable. They plan to stop slow-moving food product. In this case, their facilitator advises them to use relevant cost (stop or continue the product topic) to make decision in order to solve the problem. Other groups find that their product price is not competitive in the market. Again, their facilitator helps them to identify value-added and non-value-added activities in order to make cost efficiency; also, they have to re-calculate cost of product to make sure that they did it correctly. Other management accounting topics such as standard costing, variable costing, and budgeting also explained, during the consultation, when the groups need these tools.

Assessment

Assessment is conducted, since the business group was formed until at the end of semester. Facilitator assessed the feasibility of the business plan. Several points of assessment cover market sensitivity, financial aspect, human resource aspect, environmental aspect, etc.. Students are given two options, either improving the business plan or creating a new one. BSC concept also included in this assessment, such as objectives, lag indicator, lead indicator, initiatives, target, etc..

Assessment covers midterm test, final test, assignment, quiz, and project execution. Midterm test consists of the business progress from the beginning until midterm test, the way students overcome the problems, future planning, and reflection on entrepreneurship spirit. Final test consists of the business progress from midterm test until final test, the way students overcome the problems, financial reports, and reflection on entrepreneurship spirit. Assessment of regular visit and weekly evaluation consist of teamwork, business development, creativity and innovation to increase revenue, student attendance both in the class and during the

project, and student contribution to the business as well as their discipline. All assessments are the bases for their final grades.

Evaluation

At this phase, the evaluation is conducted by accumulating all the assessment points. Evaluation is also done through student reflection both for management accounting course and entrepreneurial project 3 course. Reflection is very important in order to know whether the goal of course is achieved.

From the 33 groups, at the end of semester, there are three groups that still prepare for their business, because they have to invest big asset. Thirty groups have already implemented their business plans. Ten of the 30 groups can achieve high target from facilitator, and others can achieve moderate target. Table 3 shows realization vs. target from those groups.

Table 3

Target vs. Realization

Target	Realization (%)
Making business plan	100
Implementing project (30 groups)	91
Achieving high target (10 groups)	33
Achieving moderate target (20 groups)	67

Discussion

As entrepreneurial project course is a compulsory course, students have to take this course from the first semester until the seventh semester. This course gives students three kinds of entrepreneurial spirits of Ciputra, namely, opportunity creation (frequently referred to as the market sensitivity), innovation, and calculated risk taking (Harefa & Siadari, 2006). This part will explore obstacles, spirit of entrepreneurship, and the way students overcome the problems. Students have to take management accounting course and entrepreneurial project 3 in their third semester.

Time limitation. Students faced difficulties in time management. Students had to run business, attend regular classes, complete assignments from other courses, etc.. Students running food and beverage industry only open in the afternoon, since they had regular courses in the morning until at noon. Several actions are performed by students to overcome this problem, such as making schedule for each member and hiring staff to support them while they were at campus. This experience enhanced their creativity and innovativeness in running their business and class attendance at the same time. Students experienced risk when they hiring staff, since they had to give salaries to the employees.

Student's character. The varieties of students' characters often result in different opinions and actions occurred among members. There are about five groups from 33 groups which had problem among members. Nevertheless, they could solve the problem before the final test. This situation helps students to experience the importance of teamwork and leadership skill. The progress of business depends on leadership and competency. Teamwork was very important to solve the problem and plan for determining the business in the future.

Management accounting techniques. The concept of BSC enables business group to push members to work hard in order to achieve the target. From students' reflections, most of them experience that BSC could guide them to implement the strategy. They also feel that they can measure more accurately, for example, when

they measure the weekly target. Through BSC, they can identify the reasons why they cannot achieve the target. This is a very positive improvement, because they can make improvement immediately.

Several other management accounting techniques can also be implemented by students, though it is very hard for them. Product costing helps students to measure cost of product more accurately, though they feel that it is difficult than measure with traditional cost. Students are very interested, when comes to ABM especially when they identify value-added and non-value-added activities in their business projects. Many students can get a lot of benefits when they understand ABM.

CVP analysis helps students to plan their sales for short term, especially when they calculate BEP, margin of safety, and make simulation among cost, volume, and profit. They can understand fixed cost and variable cost easily, since they implement cost in their business projects. Using CVP analysis, several groups get benefits of how to choose favorable products, since they sell several products.

Tactical decision making, consists of relevant and differential costs, can give benefits for business project, especially when it comes to keep-or-drop decision and special-order decision. Several business projects, such as fashion and furniture, always face with order decision. So when they get special-order decision topics, they found it very beneficial for them. Although in the first time, many of them still do not understand, they keep asking facilitator outside the class. The other business projects (food and beverages and souvenir) face with keep-or-drop decision, since many of them sell more than one product.

Several interesting and positive outcomes are found through student reflection. Students get more understanding of how to formulate vision and strategy and how it can be implemented. Many business groups make creative and innovative initiatives. Although they spend a large amount of money to run their business, but they have no regrets, because they feel satisfied of learning process in this semester. They are satisfied, because almost all the groups are able to accomplish their targets. The most important thing they realized is that management accounting is very important for their business.

Action-based learning was implemented through observation in every activity of each group. Facilitator observed the problems within each group, and they made planning to solve the problems through treatments. Treatments were implemented to the groups and all of the facilitators made the reflection and evaluation.

Conclusions

Integration process between management accounting course and entrepreneurial project 3 is not an easy task. It takes more effort and strategy to complete the target of the course. Although it is very difficult and time-consuming, the role of management accounting techniques is very important. Using management accounting techniques, most of business groups are able to complete their targets. Moreover, students really understand the theory, since they apply it along with their real business projects. Even though not all students can understand quickly, through intensive consultation and mentoring beyond the class, they understand step by step. Assignment and weekly report also become the key success factors for students to have a deeper understanding of management accounting techniques.

The positive outcome is that those students have really realized that management accounting techniques are very beneficial for them in order to run their business well. Management accounting can contribute to students, especially when they have to make decision. This study also strengthens the role of management accounting in business practice.

Action-based research should be implemented together with PBL to give better output. Although this research is time-consuming for facilitators, the results show that it is very beneficially not only for students but also for lecturers/facilitators to increase capabilities, knowledge, and moreover, practice experience in the real business life. Finally, experiential learning such as PBL can become an alternative method to teach accounting.

References

- Endahgf. (2007). *Metode project-based learning (PBL) dalam mata diklat KKPI*. Retrieved from <http://endahgf.blogspot.com>
- Global SchoolNet. (2000). *Introduction to networked project-based learning*. Retrieved from <http://www.gsn.org/web/pbl/whatis.htm>
- Ham. (2008). *Pengangguran Terdidik 4.5 juta orang (Educated unemployment around 4.5 million people)*. Retrived from <http://www.kompas.com>
- Harefa, A., & Siadari, E. E. (2006). *The Ciputra's way: The best practice to be a true entrepreneur*. PT Elexmedia Komputindo.
- Kamdi, W. (2008). Project-based learning: Pendekatan Pembelajaran Inovatif (Project-based learning: Innovative learning approach). Disampaikan Dalam Pelatihan Penyusunan Bahan Ajar Guru SMP dan SMA Kota Tarakan, October 31, 2008-November 2, 2008, Universitas Negeri Malang (Delivered in Teacher Training Teaching Material Preparation Junior and Senior Tarakan City, October 31, 2008-November 2, 2008, Malang State University Indonesia).
- Primartantyo, U. (2012). *One million graduate students in Indonesia is unemployment*. Retrieved from <http://www.tempo.co>
- Radianto, W. (2009). Developing entrepreneurship education: Using action-based research in project-based learning. Paper presented at *the 1st Indonesian Conference on Innovation, Entrepreneurship, and Small Business*, School of Business and Management Institute Teknologi Bandung.
- Ritonga. (2008). *Jumlah Pengangguran Perguruan Tinggi Bertambah Karena Tidak Memiliki Kewirausahaan (Educated unemployment is increasing since they don't have entrepreneurship skill)*. Retrieved from <http://www.hariansib.com>
- Tanan, A. (2008). *Quantum Leap Bagaimana Entrepreneurship dapat mengubah masa depan anda dan masa depan bangsa (Quantum leap: How entrepreneurship can change you and your nation future)*. PT Elexmedia Komputindo.