

Enhancing cognitive and entrepreneurship competencies through EBL

Preparation for disruption era

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Cognitive and entrepreneurship competencies

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Abstract

Purpose – Entrepreneurship-based learning (EBL) is one of the student-center learning methods that can answer learning challenges in the era of industrial revolution 4.0. EBL is expected to improve students' competencies and make students more adaptable to the changes in the world of work in the future. The paper aims to discuss this issue.

Design/methodology/approach – This study uses quasi-experiments and divides classes into project class and control class. The project consists of making business proposals, conducting business, liquidating the partnership, and recording business transaction using the Xero platform. The Wilcoxon Signed Ranks Test, Mann-Whitney Test and independent *t*-test were carried out to test whether there are differences of cognitive abilities and entrepreneurial (general, social and functional) competencies between the project class and control class.

Findings – The results of the study shows there are differences of understanding of partnership accounting and the achievement of social and functional entrepreneurial competencies between the project class and control class.

Research limitations/implications – This study implies in using EBL to improve entrepreneurial skills for students beyond cognitive abilities.

Originality/value – The novelty of this research is the implementation of EBL in partnership accounting topics.

Keywords Entrepreneurship competencies, EBL, Cognitive competence

Paper type Research paper

1. Introduction

The accountant is one of the primary professions in supporting economic activities (Kaspina, 2015). However, accounting learning is delivered in large class and teacher-centered learning (Asonitou, 2015). Other learning methods, such as peer teaching, class projects, role-playing, case studies and active student participation, are rarely used (Asonitou, 2015). The reason for using conventional learning methods in accounting is the characteristics of accounting material that is systematic, standardized and has a high level of subjectivity (professional judgment) so that it is not flexible to be integrated with project or field-based learning methods (Mentari *et al.*, 2018).

Nowadays, the world is in a digital revolution that brings a new paradigm in the field of industry. The paradigm is known as the 4.0 industrial revolution (Damiani *et al.*, 2018).

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The main impacts of these changes are seen in the use of new technologies (Damiani *et al.*, 2018), production factors (Damiani *et al.*, 2018; Asonitou, 2015), professional organizations (Damiani *et al.*, 2018) and transformation of institutional globalization (Asonitou, 2015). The industrial sector requires workers who are competent and experts in their fields (Asonitou, 2015). Research institutes, companies and universities contribute to this change by conducting research, establishing experimental units and making applications to support the industrial sector (Liao *et al.*, 2017).

Experimental units as one of the contributions from universities can be executed by applying entrepreneurship-based learning (EBL). EBL is part of experiential learning (Fekri *et al.*, 2012), the student-centered learning methods, and a systematic and goal-oriented method (Fekri *et al.*, 2012). The specific purpose of EBL is to increase creativity, innovation and decision making in business (Fekri *et al.*, 2012). Another goal of EBL is to prepare students to become future leaders who have knowledge, expertise and attitude to support their capabilities. The use of experiential learning can bring students getting closer to the real world and stimulate integrative mindset that is not obtained from traditional learning (Fekri *et al.*, 2012). The closeness of accounting students with real practices can improve students' competence and capability (Mentari *et al.*, 2018).

Some studies suggest that the use of projects in intermediate accounting courses can improve students' understanding of accounting (Porter, 2019; Lawson *et al.*, 2014). Therefore, the purpose of this study is the implementation of EBL to improve students' understanding of partnership accounting. This purpose contains new information on the student learning process and method. It can be a substantial addition to the behavioral accounting of accounting students. The implementation of EBL is done by doing projects for half a semester. The phases are designing a business, implementing the business for one week, and practicing partnership accounting. The project implementation, consisting of several phases, is expected to improve the understanding of accounting practice (Porter, 2019). Besides, the project also utilizes the technology, i.e., Xero, accounting to facilitate the calculations in partnership accounting and preparation of financial statements.

The next parts of this study show the explanation of the research methods, students characteristic in the experimental and the control class, the scores of students in the experimental and the control class, and discussion of findings. The final section is the conclusion, limitations and suggestions for further research.

2. Theoretical framework and hypothesis development

2.1 EBL and student understanding of partnership accounting

The constructivism theory states that learners (students) are active in constructing knowledge, and social interactions are essential for constructing that knowledge. Therefore, the learning environment must contain five elements, namely, the utilization of students' initial knowledge, authentic and meaningful learning experiences, opportunities to interact, encouragement of independent learning, and introduction to scientific world (Widodo, 2004). Similarly, Supardan (2016) stated that the learning process must be designed as an active process, cognitive conflict resolution, meaning searching, social interaction, knowledge construction and conceptualization. This learning process would produce deeper understanding (Glassersfeld, 1989).

EBL is a new approach conducting on teaching technique for active learning (Romo *et al.*, 2013). Active learning is believed more effective than traditional lecture method (Marbach-Ad *et al.*, 2001). The closeness of students to the real world as a consequence of active learning was found able to improve student competence and capability (Mentari *et al.*, 2018). EBL could also increase student learning outcomes (Serevina, 2017).

In contrast to EBL, in lecture-based learning, lecturer plays a dominant role as a primary source of information (Marmah, 2014). Lecture-based learning is sufficient for basic knowledge, new topics, logical subjects (Killen, 2007), and for clarifying conflicting problems

(Moore *et al.*, 2009). Although it can transfer knowledge more quickly, it limited to growing complex cognitive skills (Liker *et al.*, 1990). Students became passive to spend their time listening and remembering the information from their lecturer. It implicates students quickly forgot the information (Marmah, 2014). Based on the description above, EBL is seen more effective in embedding the information through more students' participation and involving in real practice. Therefore, the hypothesis in this study is as follows:

- H1.* There is a difference of students' understanding about partnership accounting using EBL and traditional learning (lecture model).

2.2 EBL and entrepreneurial competencies

Entrepreneurship can be taught (Henry *et al.*, 2015). Diego (2015) stated that EBL is a learning model that combines the achievement of lecture material and the spirit of entrepreneurship. Gstraunthaler and Hendry (2011) find that the entrepreneurial spirit or entrepreneurial mindset is the basis for achieving entrepreneurial competency. Thus, the learning environment should not only design for the facilitation of knowledge but rather on how to acquire such knowledge and on the training of such abilities. Related to this matter, unlike the scientific method in traditional education, entrepreneurial methods have holistic characteristics (Deshpande, 1983; Von Bertalanffy, 1972); localized, child-centered, active and emotional learner, practical experiences (Tynjälä, 1999); multidisciplinary, know-who and know-how (Cotton, 1991); unleash human nature, inter-subjective, action and co-creation (Saravathy and Venkataraman, 2011); belief that reality as social construction, iterative science process, meaning-making (Cunliffe, 2011); social interaction, process focus (Jeffrey and Woods, 1998); storytelling, practical experiences (Egan, 2008); lived experience (Weber, 2004); and emphasis on creation (Ollila and Williams-Middleton, 2011). More specifically, Romo *et al.* (2013) emphasized that EBL focuses on solving real problems.

Diego (2015) pointed out that by using EBL, 76–81 percent students agree that they are more skilled in creativity and innovation, capable of facing risk and uncertainty, taking advantage of a business opportunity and capable of overcoming difficulties. Contrary to that, in the lecture method, students may receive much knowledge in the quicker and more straightforward way from the lecturer, but lack other competencies such as attitudes, values, analysis, synthesis or evaluation (Marmah, 2014), and cannot achieve higher thinking order (Moore *et al.*, 2009). The lecturer learns harder than students (Marmah, 2014), so that lecture method increases the lecturer's competencies, not the student.

Based on the description above, the competencies achieved by students through EBL and lecture learning could be potentially different. Therefore, the hypothesis in this study is as follows:

- H2.* There is a difference between entrepreneurial students' competencies using EBL and traditional learning (lecture model).

3. Research method

This study used a quasi-experimental design. Sample of this study was two classes selected from five classes which took advance financial accounting subject. Initially, all classes were tested by the same tests. Based on these pre-test results, two classes CC and DD had similar mean results, so that chosen as the research objects. DD, as the experimental and CC as the control class, were determined randomly. DD consists of 40 and CC of 36 accounting education students. The treatment for experimental and control class was different. Learning methods conducted in DD was project-based learning, whereas students were divided into eight groups, and each group consists of five students. All eight partnership

business did real selling goods. Each student, as a member of the group, acted as a real partner to understand the process of partnership accounting for two and a half months.

Each group obtained capital from the research team. They performed all stages in the partnership process. The first stage was the formation of a partnership such as creating a business proposal, determining financial budgets and presenting business ideas. The second stage was the operation of the partnership, whereas students learned how to realize business ideas, focused on targets and sold products directly to customers. The third stage was dissolution and liquidation of the partnership, including the distribution proses of profit and all the financial position. The last was the preparation of activity reports and financial statements for partnership entities.

CC, as the control class, used the lecture method. It was a traditional method in which the lecturer was the central role in transferring the subject's contents to the students. Students received the material by listening, asking the questions and discussing the topic in every meeting. After obtaining the information, students work on the problem related to partnership accounting from the book. The answer to the problem then was discussed in the class. After the partnership accounting content has been completed in two and a half months, the post-test was conducted to students of DD and CC classes. The post-test was in the form of case problems and questions related to partnership accounting started from establishment until the liquidation of the partnership. Students' score of the post-test of DD and CC were analyzed using Wilcoxon Signed Ranks Test and Mann-Whitney Test to know whether there is different understanding of partnership accounting between project-based and traditional learning.

Furthermore, to assess the entrepreneurship competencies of the students from the project and traditional class, there was a self-assessment by the students themselves. Students filled in the self-assessment questionnaire about how far the competencies they attained from the learning process. The questionnaire measured three kinds of competencies, namely, general, social and functional entrepreneurial competencies, referring to Nicklaus (2011). The definition and indicators of entrepreneurial competencies are shown in Table I.

The questionnaire started with demographic data, class DD or CC, and gender. Then, it followed by statements related to competencies such as "I can make a decision related to [...]" of which general entrepreneurial competencies consisted of seven, social three and functional six statements. A five-point Likert scale was used with answer choices: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree. Data of self-assessment of entrepreneurship competencies were analyzed by using an independent test between DD and CC class. The difference test was to know whether there were different entrepreneurial competencies between project and traditional learning class.

4. Results

4.1 Descriptive test of students' score

The descriptive test is intended to know the score of the assessment regarding the students' understanding of partnership accounting in the experimental and control classes before (pre-test) and after (post-test) the learning process. The descriptive data are presented in Table II.

The control (CC) and the experimental class (DD) have almost the same pre-test values, average scores of 13,278 and 14,225, minimum values of 5 and 6, and maximum values of 25 and 24. These results indicate that CC and DD have similar understanding of partnership accounting. Therefore, the experimental and control classes are chosen randomly without considering the academic competencies of the students.

The post-test results show a difference in the mean values between the experimental class and the control class. The score obtained by the control class is a minimum of 15, a maximum of 70 and an average of 38,972, while the score for the experimental class is a minimum of 40, a maximum of 85 and an average of 53,825. These results indicate that there are differences scores of the pre-test and post-test in both classes.

Competencies	Definition	Sub-competencies	Indicator	Code	Cognitive and entrepreneurship competencies
General entrepreneurial competencies	Conceptual ability or cognitive competence	1. Conceptual and analytical	Decision making in analyzing problems	X1_1	
		2. Innovation	Creativity and innovation	X1_2	
		3. Enforcement	Completion of the task quickly and under pressured	X1_3	
		4. Flexibility	Adaption with environment	X1_4	
		5. Self-knowledge and confidence	Understanding about self	X1_5	
		6. Learning ability	Learning and exchanging experiences	X1_6	
		7. Communication	Communication in discussion	X1_7	
Social entrepreneurial competencies	Social competence in the context of communication and relationship with other people	8. Teamwork	Working in group	X2_1	
		9. Leadership	Leading and organizing tasks	X2_2	
Functional entrepreneurial competencies	Skill or applied competence about how to do the tasks	10. Networking	Building network	X2_3	
		11. Commercial management competencies	Marketing concept	X3_1	
		12. Technology management competencies	Utilization of information technology	X3_2	
		13. Financial management competencies	Calculation of cost and profit	X3_3	
			Accounting and financial report of partnership accounting	X3_4	
		14. Strategic management competencies	Business activity chain holistically	X3_5	
15. Organizational management competencies	Business planning and performance controlling	X3_6			

Table I.
Definition and indicator of entrepreneurial competencies

	<i>n</i>	Min.	Max.	Mean	SD
DD_Project_Pre-Test	40	5	25	14.225	4.912
DD_Project_Post-Test	40	40	85	53.825	15.576
CC_Control_Pre-Test	36	6	24	13.278	5.219
CC_Control_Post-Test	36	15	70	38.972	14.680

Table II.
Descriptive data of students' score of partnership accounting

4.2 Descriptive data of entrepreneurial competencies score

The three entrepreneurial competencies used are general, social and functional entrepreneurial competencies. Each competency is measured by sub-competencies and indicators shown in Table I. The descriptive data for the three competencies are presented in Table III.

The results of the questionnaire show that the average scores of competencies obtained for the project class are higher than the control class. The highest competency score in the project and control classes is obtained from social entrepreneurial competencies with an

Code	n	Project class (DD)				Control class (CC)				
		Min	Max	Mean	SD	n	Min	Max	Mean	SD
X1_1	40	1.00	5.00	4.050	0.904	36	1.00	5.00	3.583	0.906
X1_2	40	1.00	5.00	4.250	0.929	36	1.00	5.00	3.417	1.180
X1_3	40	1.00	5.00	4.075	0.917	36	1.00	5.00	3.528	0.910
X1_4	40	1.00	5.00	4.000	0.877	36	1.00	5.00	3.472	0.971
X1_5	40	1.00	5.00	4.125	0.853	36	2.00	5.00	3.778	0.960
X1_6	40	1.00	5.00	4.300	0.791	36	1.00	5.00	3.944	1.040
X1_7	40	1.00	5.00	4.225	0.891	36	1.00	5.00	3.667	1.069
X1_Mean	40	1.00	5.00	4.146	0.703	36	1.57	5.00	3.627	0.830
X2_1	40	1.00	5.00	4.350	0.770	36	1.00	5.00	3.972	1.028
X2_2	40	1.00	5.00	4.175	0.903	36	1.00	5.00	3.694	1.142
X2_3	40	2.00	5.00	4.100	0.744	36	1.00	5.00	3.639	1.175
X2_Mean	40	1.33	5.00	4.208	0.699	36	1.33	5.00	3.769	0.995
X3_1	40	2.00	5.00	3.975	0.768	36	1.00	5.00	3.278	1.085
X3_2	40	2.00	5.00	4.200	0.883	36	1.00	5.00	3.528	1.000
X3_3	40	1.00	5.00	4.075	0.971	36	1.00	5.00	3.722	0.974
X3_4	40	2.00	5.00	4.075	0.859	36	2.00	5.00	3.833	0.878
X3_5	40	2.00	5.00	4.175	0.813	36	1.00	5.00	3.472	1.055
X3_6	40	2.00	5.00	4.100	0.709	36	1.00	5.00	3.500	1.028
X3_Mean	40	1.83	5.00	4.100	0.671	36	1.67	5.00	3.556	0.809

Table III.
Descriptive data of
entrepreneurial
competencies score

average value of 4.208 for the project class and 3.769 for the control class. This result indicates that students got social entrepreneurial competencies after the learning process.

General entrepreneurial competencies obtain the second-highest score. Seven indicators measure these competencies, i.e. decision makers in analyzing problems, creativity and innovation, completion of the task quickly and under pressure, adaptation with the environment, understanding of self, learning and exchanging experiences, and communication in the discussion. The general entrepreneurial competencies score is 4.146 and 3.627 for the project class and control class, respectively. This result indicates that the average student agrees that they got general entrepreneurial competencies after the learning process.

The lowest score among the three competencies is of functional entrepreneurial competencies, which shows a value of 4.100 for the experimental class and 3.556 for the control class. It means that students agree that they got functional entrepreneurial competencies about how to do the tasks and applied work.

4.3 Wilcoxon Signed Ranks Test

Different test of two paired samples was carried out by the Wilcoxon Signed Ranks Test. Positive ranks of project class indicate the post-test score of all samples in the project class is higher than the pre-test score. Similarly, the traditional control class also shows positive ranks. With a significance level of 0.000, it shows that there is a difference between the score of the post-test of the experimental class and the control class before and after learning. Table IV shows the result of different tests of two paired samples.

4.4 Mann-Whitney test

Different tests of two unpaired samples were carried out by the Mann-Whitney test. The test results show that there are no difference scores of the pre-test between the experimental class and the control class. Unlike the results of the pre-test, the post-test results showed differences in the post-test values between the experimental class and the control class. On average the post-test scores of the experimental class is higher than the control class. The test results are presented in Table V.

4.5 Independent t-test of entrepreneurial competencies

The entrepreneurial competencies were examined by an independent t-test. The test results show that there are differences in social entrepreneurial and functional entrepreneurial competencies, but no difference in general entrepreneurial competencies between the project class and control class. Nevertheless, all of the t-test scores are negative, which means that the project class achieves higher competencies than the control class. The results are presented in Table VI.

More detailed testing is also conducted on each competency. The test results are presented in Table VII.

The results of the detailed tests show that there is no difference in general entrepreneurial competencies between the project class and the control class. Besides, the sub-competencies of self-knowledge and confidence, and learning abilities are higher in the control class than the experimental class. This means that students in control class with traditional and teacher-centered learning feel more self-knowledge, confident and able to learn than the students in project class.

There is a difference of social entrepreneurial competencies in general, as shown in Table VI, but differences in each sub-competency are significant at 10 percent, which are teamwork (0.052), leadership (0.063) and networking (0.088). Even so, the negative value means that the project class has higher competencies achievement than the control class.

Five indicators of functional entrepreneurial competencies, which are commercial, technology, financial, strategic and organizational management, are significant at 5 percent. These results are in line with the overall result of competencies in Table VI. Besides, the negative

	<i>n</i>	Mean rank	Sum of ranks	Sig.
<i>DD_Project_Post-Test – DD_Project_Pre-Test</i>				
Negative ranks	0	0.00	0.00	0.000
Positive ranks	40	20.50	820.00	
Ties	0			
Total	40			
<i>CC_Control_Post-Test – CC_Control_Pre-Test</i>				
Negative ranks	0	0.00	0.00	0.000
Positive ranks	36	18.50	666.00	
Ties	0			
Total	36			

Table IV.
Wilcoxon signed ranks test (paired difference test between pre-test and post-test)

	Sig.
Pre-test DD experiment and CC control	0.190
Post-test DD experiment and CC control	0.000

Table V.
Mann–Whitney test (independent difference test between experimental and control class)

	<i>t</i> -test	Sig.
General entrepreneurial competencies	-0.841	0.403
Social entrepreneurial competencies	-2.221	0.029
Functional entrepreneurial competencies	-4.151	0.000

Table VI.
Independent t-test of entrepreneurial competencies between experimental and control test

Competencies	Sub-competencies	Code	t-test	Sig.
General entrepreneurial competencies	Conceptual and analytical	X1_1	-0.486	0.628
	Innovation	X1_2	-1.908	0.060
	Enforcement	X1_3	-0.928	0.357
	Flexibility	X1_4	-0.601	0.550
	Self-knowledge and confidence	X1_5	0.235	0.815
	Learning ability	X1_6	0.158	0.875
	Communication	X1_7	-0.880	0.382
Social entrepreneurial competencies	Teamwork	X2_1	-1.978	0.052
	Leadership	X2_2	-1.889	0.063
	Networking	X2_3	-1.732	0.088
Functional entrepreneurial competencies	Commercial management competencies	X3_1	-3.882	0.000
	Technology management competencies	X3_2	-3.971	0.000
	Financial management competencies	X3_3	-2.380	0.020
		X3_4	-2.077	0.041
	Strategic management competencies	X3_5	-4.011	0.000
	Organizational management competencies	X3_6	-3.679	0.000

Table VII.
Independent *t*-test of entrepreneurial sub-competencies between experimental and control test

value of each indicator also shows that all indicators of this competency in the project class are higher than in the control class.

4.6 EBL and student understanding of partnership accounting

The different results between the experimental class and the control class indicate that there is a difference in understanding of partnership accounting between the two classes. The difference is due to the learning method used. EBL is student-centered learning which can improve student understanding because it brings students closer to the accounting practice (Porter, 2019; Lawson *et al.*, 2014; Egan, 2008; Tynjälä, 1999), life experience (Weber, 2004) and problem solving. Specifically, Mentari *et al.* (2018) stated that the closeness of students to the real world can improve the student competencies and capabilities.

The experimental class is carried out by implementing an entrepreneurial project for the half of semester. Students are divided into several groups. Group members consist of four students to optimize the effectiveness of the project. This is in line with Porter (2019), which states that the effectiveness of group members in the project can be achieved if the group consists of between three and four people. Students have the same workload, so that the project becomes achievable. However, the main problem in the project method is a workload (Porter, 2019). This was confirmed by one class member who stated that "I could not manage my time, I sold coffee at night, when it was not my turn, I also did assignments for other courses. I like the project, but I could not manage the time." The students focus on the workload instead of those benefits. This can lead to the frustration because they have a heavier workload (Porter, 2019).

The exam is focused on three main topics. There are formations and changes in ownership interest, operation, and liquidation of the partnership. Partnerships allow a business venture's investment and share its risks by two or more people (Beams *et al.*, 2015). The operations of a partnership are similar to other forms of the organization operating in the same line of business (Beams *et al.*, 2015). The partnership operating topic explains the influence of the partnership agreement on the allocation of partnership profits (Martani, 2017). In measuring partnership income for a period, the expense should be scrutinized to make sure that the partner's expense is excluded and separated from the partnership's business expenses (Beams *et al.*, 2015).

The partnership agreement should be precise in specifying the measurement procedures to be used in determining the amount of bonus, salary and interest allowances (Beams *et al.*, 2015). At this stage, students learn to estimate the impact of workload on bonuses and salaries obtained by each partner. Almost all groups share bonuses and salaries in the same

proportion, whereas the capital contribution of partners is considered in profit sharing. Students practice to implement the salary allowance of income among the partners based on the time and talents devoted to the partnership. However, two groups distinguish the proportion of profit allocation among group members because there are members who have more workload than others. This condition causes discussion in the class to be more concern on the topic of implementation of operations than the other topics.

Formations and changes in ownership interest became the second-highest topic that could be solved by students. A new partner can be admitted with the consent of all partners by purchasing an interest directly from the existing partners and investing cash or other assets in the business (Beams *et al.*, 2015). If the assets are revalued and identifiable accounts are adjusted, the procedures refer to the goodwill approach (Beams *et al.*, 2015). The goodwill can be recorded to the new or existing partners based on the excess of the fair value of unrecorded assets. If the assets of new or existing partners are not to be revalued, the partnership uses the bonus approach (Beams *et al.*, 2015). At this stage, students feel confused with the impact of the bonus method and goodwill on the new partner. Students implement a bonus method for a new partner in project implementation. Thus, the difference in investment value and fair value is treated as a bonus for the old partner (Martani, 2017). The students decide to not do the revaluation which causes the goodwill approach is not learnt by the students. It affects the students' scores related to this topic is not optimal because they only use the bonus approach.

The lowest score obtained by students are related to the liquidation. Liquidation is the situation in which the partnership is dissolved and the business ceases to operate (Beams *et al.*, 2015). The partnership liquidation involves converting noncash assets into cash, recognizing gains and losses and expense during the liquidation period, settling all liabilities and distributing cash to the partners (Beams *et al.*, 2015). At this stage, students get difficulties because they have to make a profit in sales asset scenario. Assets used in projects are not material, such as spoons, forks, bowls and other simple equipment, so students have difficulty imagining that these assets can be sold at a high value. The impact of wrong recognizing gains or loses is the wrong calculation of safe payments. Safe payments are distributions that can be made to partners with assurance that the amounts distributed will not need to be returned to the partnership to cover known liabilities or realign partner capital (Beams *et al.*, 2015). Difficulties in project implementation cause difficulties in answering questions. Nevertheless, the value of students in the experimental class is much higher than the control class.

Learning in the control class is carried out by the lecture-centered method and the assignments given from the book. In the control class, students are not required to be able to solve the comprehensive accounting problem. Tasks given are partial and only focus on one topic. This causes students difficulties when the questions are in the form of comprehending illustrations that illustrate accounting practices for the entire topic. This is in line with Li *et al.* (2016), which mentions several weaknesses of traditional learning that focus on the instructor, such as the teacher who is busy explaining and writing on the board, the students passively obtain information, copy the instructor's writing in their respective books, recall the material during the exam and cannot identify differences in the potential of each student (Li *et al.*, 2016). Classroom time is limited and very little time can be used to work on an integrated assignment (Porter, 2019). Besides that, the lecturer learns harder than students (Marmah, 2014), so that the lecture method increases the lecturer's competencies, not the student.

4.7 EBL and entrepreneurial competencies

The other advantages gained from the EBL are not only cognitive competencies, but three types of competencies, which are general, social and functional entrepreneurial competencies, according to Nicklauss (2011). At the phase of business implementation, students are required to make business ideas in business proposals. The proposal contains an overview, the budget

of income and costs, and job description of each student. There are ten business proposals at this stage. The proposal consists of eight trading and two manufacturing companies. Almost all of the businesses chosen by students are food sector. Students coordinate with each other, so that the business proposed do not produce or sell the same product. After the business proposal is completed, students present their business ideas. The presentation of business ideas then gathers a peer review and lecturer's suggestions.

Student input relates to the project's budget and job description. At this stage, students learn to recognize the business opportunities, optimize their resources in the face of risk (Clouse *et al.*, 2008; Egan, 2008), find solutions in everyday life (Clouse *et al.*, 2008; Egan, 2008; Fekri *et al.*, 2012), think creatively and have an entrepreneurial mindset (Diego, 2015). Besides, at this stage, students get general entrepreneurial competencies such as the internalization of the concept of entrepreneurship and partnership, innovation in product selection and marketing strategies, flexibility for the environment through responses to input, self-knowledge, confidence to make business ideas and communication skills. Nonetheless, the results of the study indicate that there is no difference between general entrepreneurial competencies obtained by students in the project and the control class.

Actually, the students of accounting education get entrepreneurship courses in the same semester with this project implementation (UM, 2016), so that both project and control class receive entrepreneurial subjects. But this project in partnership accounting course also requires students to join the program of entrepreneurial week as well as the entrepreneurship course. The students also make stands and sell products. It implies students from both project and control class learn general entrepreneurship skills, so there is no difference of general entrepreneurial competencies between the project and control class.

Social competencies are obtained by working together to create business ideas, choose one member as a group leader, and choose suppliers and consumers. Achievement of cooperation can be measured by the timeliness of the proposal collection and the suitability of the proposal with the learning objectives. Students learn to persuade other group members to lead groups. Also, students learn to use relationships to choose suppliers and consumers. Suppliers are selected based on the proximity to the location of product sales. One of the marketing strategies used is the use of social media to sell the products.

The experience possessed by students during this projects influences the way they fill out the questionnaire related to entrepreneurial competencies. As per the results, as shown in Table VI, there are differences in the achievement of social competencies between students in the project class and the control class. Nevertheless, the results of the detailed testing in Table VII show that there are differences in the achievement of the social sub-competence between the project class and the control class. But, there are no differences of three sub-social competencies, which are teamwork, leadership and networking. It may be caused by several reasons. Students in the control class also obtain teamwork by working on several tasks in groups. Teamwork also requires students to learn to choose leaders among group members, so control class students also obtain leadership. Networking is a general competency that is used by students to socialize with students, communities or other parties who are perceived to help students complete the study.

The next stage is the implementation of the business. At this stage, students realize their business ideas for two weeks. In the first week, the students carried out their business with full motivation, but in the second week, they lack motivation. This student motivation decreased because some group members have begun to ignore their duties, so that other members must bear the workload of the member. At this stage, the members have conflict among the group. This conflict is similar to what Syariati *et al.* (2018) stated that the existence of conflict that originates from a lack of leadership and desire to cooperate well, some students tend to stand out from others when they feel they have better abilities or self-knowledge. At this stage, students gain experience of active and emotional learners (Tynjälä, 1999), know-who and

know-how (Cotton, 1991), unleash human nature and inter-subjective (Sarasvathy and Venkataraman, 2011), meaning-making (Cunliffe, 2011), social interaction and process focus (Jeffrey and Woods, 1998), lived experience (Weber, 2004) and focuses on solving real problems.

The final stage in project implementation is accounting reporting and activities. Reporting on activities is carried out by filling in the e-module. Excel and the Xero platform are used in accounting reporting activities. At this stage, students implement an accounting understanding of partnership in financial statements. Students practice the journal-making process of transactions, post to ledgers, create a trial balance and make financial reports. Students are required to use the excel formula that they understand, for example, using the sum if formula, v-lookup or linking accounts for similar accounts.

At this stage, the students also confirm the accuracy of the partnership accounting calculation to the lecturer. Students learn the impact of the partnership agreement on profit allocation, make the scenario for the entry of new allies with technical and fundamental analysis, and liquidate the partnership. Most groups record proper partnership operations. The difficulties obtained by students are the selection between goodwill and bonuses approaches for new partner and calculation of safe payment in the liquidation. At this stage, students get functional competencies which are commercial, financial, strategic and organizational management (Nicklaus, 2011).

At this stage, there are differences competencies achievement between the project and the control class. At this stage, students learn to process accounting information to be comprehensive information to make financial reports using either Excel or Xero. This learning experience was not obtained by students in the control class so that the competencies achievement in these two classes was different. This difference is in line with Syariati, who states that the commercial and financial management capabilities increase with the use of EBL. Besides, students learn for practical experiences (Tynjälä, 1999; Egan, 2008), know-who and know-how (Cotton, 1991), action and co-creation (Sarasvathy and Venkataraman, 2011), process focus (Jeffrey and Woods, 1998) and lived experience (Weber, 2004).

5. Conclusion, implication and limitation

EBL can improve students' understanding of partnership accounting. The test results show that student grades in the project class and control class are different. Although the average score obtained by students is low, students in project class result higher score of cognitive abilities than the control class. Besides, through EBL, the students do not only get cognitive competencies, but also entrepreneurial which are social and functional competencies. The limitation of this research is the test to measure students' cognitive abilities that is less sufficiently validated. Future research is expected to use more valid and comprehensive questions to measure partnership accounting capabilities. This study implies that EBL can be used as an alternative learning method in partnership accounting topics to maximize competencies achieved by the students.

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