

The Impacts of Project Based Learning Method on the Basic Accounting Competencies: Analyzed Using Kirkpatrick's 4 Levels Model

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Abstract. Project Based Learning (PBL) is an instructional approach that involves students dealing with their problems by practicing in the field. The PBL is one of the choices of current learning methods in almost all scientific fields, including accounting. Based on the previous research, the PBL will only increase social value and soft skills, not basic accounting knowledge. The policy of implementing PBL in introductory courses is a complicated matter to the consequences of achievement in the essential accounting competencies. This descriptive quantitative research aims to evaluate the effectiveness of the application of PBL in introductory accounting courses for first's year students by using Kirkpatrick's four levels evaluation model. Respondents consisted of 3 subjects in PBL those are of 155 students, five teaching lecturers, and 11 clients. This model includes the evaluation on four levels: reaction, learning, impact, and outcome. This research resulted in exciting findings, namely that the PBL provides more experience in soft skills (human literacy, technological literacy, data literacy) and critical thinking patterns rather than increasing the achievement of the essential accounting competencies. The suggestion that can be given is that the PBL should be applied to subjects with achievements beyond the essential competencies, in which the first year is crucial to equip students with basic accounting knowledge. Basic knowledge becomes the foundation for the following year's course level, so it must be prepared wisely.

Keywords: Accounting, Competency, Kirkpatrick Model, Project Based Learning

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Introduction

Learning is a process involving continuous and permanent changes in knowledge, skills, attitudes (KSA), and values (Polat *et al.*, 2015). Project-based learning (PBL) is one of the choices of contemporary learning methods that are challenging for almost all disciplines, such as pharmacy, agriculture, engineering, information technology, architecture, medicine, and others (Ahmed & Kannaiah, 2020). PBL is an instructional approach that allows students to face problems with direct practice in the field. These problems provide the stimulus for students to focus on the learning topic. As a result, it equips students to think critically and analytically, develop problem-solving skills, and seek & acquire appropriate knowledge (Hsu *et al.*, 2016).

State Polytechnic of Batam (Indonesian: *Politeknik Negeri Batam*) as a vocational campus puts forward PBL as the main learning method applied in almost all courses, including those exploring the main competencies in accounting science, namely basic accounting competencies. As known, basic knowledge is the foundation for the overall accounting science that is built during the study period. For this reason, the basic competence of accounting is the root of all courses in the following semesters of accounting students. The Department of Business Management, State Polytechnic of Batam has applied hybrid PBL (conventional learning combined with PBL) for the basic accounting courses, such as Introduction to Accounting (in the D3 Accounting Study Program) and Basic Financial Accounting (in D4 Managerial Accounting Study Program). This becomes a concern if the goals and objectives of PBL cannot be achieved due to latent factors. These two basic accounting courses are taken by students in the first year, even though PBL should be suitable or appropriate and effective in achieving goals when being applied to students who already have basic accounting knowledge (Abdul Manaf *et al.*, 2011; Dockter, 2012; Hsu *et al.*, 2016). Based on a study conducted by Verhoeven *et al.* mentioned in Abdul Manaf *et al.* (2011), accounting students who carry out conventional learning get a higher score of basic accounting knowledge than those who use PBL. Accounting students who use PBL only have higher social scores, not basic accounting knowledge.

PBL demands to consider the teaching skills of lecturers, habits of using the PBL model, learning design, feasibility, and other factors. Therefore, lecturers must adapt and modify the PBL model

according to their needs on an ongoing basis to achieve the expected competency goals in each course (Hsu *et al.*, 2016). Adaptation and modification of the PBL model require a thorough evaluation of the implementation and outcomes of the learning processes that have been achieved in the previous period. Evaluation is a continuous process and must be carried out as the basis for developing a learning process concept, which produces findings and conclusions regarding needs related to further policy actions. At the end of each learning process, an evaluation is ideally carried out to develop learning improvements (Farjad, 2012). One of the appropriate methods to evaluate the learning process is Kirkpatrick's method. The characteristic advantages of this model include the simplicity of evaluation and measurement criteria with a limited number of variables (Heydari *et al.*, 2019). The crucial element of an effort to improve or refine learning methods requires an empirical evaluation of feedback so that the results are unbiased and can be accounted for (Ahmed & Kannaiah, 2020).

Based on the explanation of the issues that occurred, this study aims at evaluating the application of the PBL method in achieving basic accounting competencies using Kirkpatrick's 4 Levels of Learning Evaluation Model. From this study, it is expected the effectiveness of the application of PBL for courses that contain basic scientific material, in which the main indicator is that the material in those courses can be understood comprehensively. The results of this evaluation can be used further as policy considerations and add to empirical results regarding appropriate learning methods for basic scientific competencies in general and basic accounting science in particular.

Literature Review

The PBL method originated from the concept of small group learning for business education which was introduced in the 1920s. McMaster University in Canada in the 1970s modified this learning process through research and development of student-centered pedagogy in which students learn "from problems", "in small groups", and through "discussion" (Hsu *et al.*, 2016). However, the PBL method in accounting developed slowly starting two decades ago unlike PBL in the health sciences or other scientific studies (Ahmed & Kannaiah, 2020).

Concept of hybrid PBL is a combination of conventional learning and collaborative learning that is more interactive with a student-centered approach

(Hsu *et al.*, 2016). Conventional learning is a learning method in which the stand-and-deliver lecturer approach is preferred so that students tend to be passive (lecturer-centered) (Hansen, 2006). In PBL, the role of the lecturer is more as a facilitator (Hansen, 2006) and as a catalyst (Hsu *et al.*, 2016) in the learning process than as a knowledge provider. In the context of PBL, lecturers as instructors must be able to develop understanding, guide, support the student learning process, and avoid providing immediate answers to students. In this learning model, students must be able to demonstrate self-management, enthusiasm in finding solutions, and learning through group collaboration. Through this process of sharing knowledge and opinions, it is expected that students can collaboratively build a comprehensive knowledge system (Hsu *et al.*, 2016).

PBL is a very challenging learning method (Hsu *et al.*, 2016) in transferring knowledge using structured or unstructured problems (Ahmed & Kannaiah, 2020) that can benefit students' soft skills development. Soft skills that can be obtained from PBL include teamwork, communication skills, leadership (Abdul Manaf *et al.*, 2011), analytical skills, ability to solve complex problems, evaluation, intellectual skill development (Dockter, 2012), ability to consider problem-solving, creativity, critical thinking, and the ability to integrate information to solve a problem (Hsu *et al.*, 2016). In their study, Hsu *et al.* (2016) summarize the PBL focus on student competencies into 3 aspects, as follows 1) The aspect of knowledge (core knowledge), 2) The aspect of cognitive skills, such as analysis, integration, evaluation, and critical thinking, and 3) The aspect of action skills, such as conflict resolution skills, time management, organization, and negotiation skills.

An evaluation is a systematic process to determine the effectiveness of a learning process. The Kirkpatrick's model pioneered by Donald Kirkpatrick is an evaluation framework for learning that is widely used in the world of work, education, and research (Ikramina & Gustomo, 2014; Ulum, 2015).

The advantages of this Kirkpatrick's model are simplicity, practicality, easiness to understand, not requiring special requirements, not requiring much time for analysis, and providing an adequate evaluation structure but still contributing to evaluation considerations both in theory and practice (Alsalamah & Callinan, 2021). The framework of Kirkpatrick's 4 Levels of Learning Evaluation Model according to Temasek (2021) can be seen in Figure 1 below.

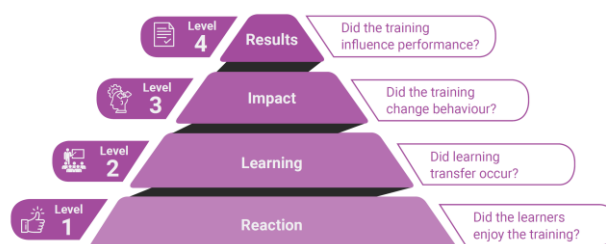


Fig. 1. The Framework of Kirkpatrick's 4 Levels of Learning Evaluation Model

Kirkpatrick's evaluation model formulates the learning evaluation area which includes 4 levels: reaction, learning, impact, and result. At the first level (reaction), the evaluation describes the level of students' reactions, perceptions, and subjective evaluations for the relevance and quality of learning. At the second level (learning), the evaluation measures the extent to which students' attitudes have changed, knowledge has increased, skills have expanded, and so on after completing the learning process. At the third level (impact), the evaluation describes the changes in student behavior and performance as a result of the learning process. Finally, at the fourth level (results), the evaluation focuses comprehensively on evaluating students' learning outcomes (Farjad, 2012; Ulum, 2015; Heydari *et al.*, 2019; Alsalamah & Callinan, 2021).

Accounting education consists of theoretical and applied accounting learning. With globalization and rapidly developing technology, mastery of accounting applications is very important. Mastery of theoretical accounting skills and quality of accounting application skills are closely related to the learning model that students undergo from each course taken (Polat *et al.*, 2015).

The Ministry of Research, Technology, and Higher Education (Indonesian: *Kementerian Riset Teknologi, dan Pendidikan Tinggi*) has launched guidelines on policy directions and strategies for 2020-2024 which include, among other, improving the quality of industry-based vocational universities, adjusting learning by integrating new literacy to respond to the industrial era 4.0, and strengthening students' skills (hard and soft skills). For making accounting graduates more competitive according to their era, the learning process needs a new orientation.

Therefore, teaching only old literacy (reading, writing, and mathematics) is not enough as basic working capital but must be supported by new literacy.

According to Joseph E. Aoun in Sudlow (2019), new literacy consists of (a) data literacy (the ability to read, analyze, and use information (big data) in the digital world), (b) technological literacy (understanding how machines work or regarding technology applications) and (c) human/social literacy (humanity, communication, and design). Human literacy is part of general learning that must be mastered by students, while data and technology literacy can be applied in elective courses. Learning models that can be used to produce new literacy are thematic studies, connecting students to the real world, project-based learning, and internships/practical work/co-op programs (Sudlow, 2019).

Accounting learning theoretically can be evaluated from the mastery of competencies that are often tested, both nationally and internationally. In this study, researchers mapped basic accounting competencies

using a comparison of basic accounting competencies from internal (State Polytechnic of Batam) and external sources (Accountant Technician certification and certification from the Indonesian Institute of Accountants). The internal document used in this study is the accounting syllabus of each study program for the first-year students. Meanwhile, for comparison, the bases for the national and international scale competencies used in this study are the Accountant Technician certification and the Chartered Accountant Level 1 certification regarding the Basic Competencies of Corporate Reporting (IAI, 2019). Table 1 provides a comparative summary of the competencies that must be mastered from each accounting syllabus (Diploma of Accounting and Bachelor of Managerial Accounting study programs), Accountant Technician certification, and Chartered Accountant Level 1 certification: Corporate Reporting.

Table 1
Summary of Basic Accounting Competencies

| No | Accounting Competencies | Diploma | Bachelor | Accounting Technician | Chartered Accountant (CA) – Level 1 – Corporate Reporting |
|----|--|------------------------|------------------------|-----------------------|---|
| | | Internal Passing Grade | External Passing Grade | | |
| 1 | Conceptual Framework, IFRS, SAK | √ | √ | √ | Level 3 |
| 2 | Recording Process | √ | √ | √ | √ |
| 3 | Adjusting Entries | √ | √ | √ | √ |
| 4 | Completing the Accounting Cycle | √ | √ | √ | √ |
| 5 | Accounting for Merchandising Operations | √ | √ | √ | √ |
| 6 | Subsidiary Ledger and Special Journal | √ | √ | √ | √ |
| 7 | Incomplete Records | √ | √ | √ | √ |
| 8 | Current Asset (Cash, AR, Inventory) | √ | √ | √ | √ |
| 9 | Income Tax | √ | √ | √ | √ |
| 10 | Fixed Asset (PPE, Intangible Asset, Natural Asset, Depreciation) | √ | 2nd Year | √ | √ |
| 11 | Liabilities | 2nd Year | 2nd Year | √ | √ |
| 12 | Ethic and Governance | 2nd Year | 2nd Year | √ | √ |
| 13 | Revenue | 2nd Year | 2nd Year | √ | √ |
| 14 | Provision and Contingency | 2nd Year | 3rd Year | - | √ |
| 15 | Bussiness Combination and Consolidation | 3rd Year | 3rd Year | - | √ |
| 16 | Investment for Other Entities | - | 3rd Year | - | √ |
| 17 | Accounting for Rent | - | 3rd Year | - | √ |
| 18 | Financial Instrument | - | 3rd Year | - | √ |
| 19 | Financial Statement Analysis | - | 3rd Year | - | √ |

Several previous studies have discussed what methods are effectively applied in learning basic accounting knowledge, as follows.

The pioneer of empirical research on PBL in the field of accounting which is widely used as a reference for other research is a study conducted by Hansen (2006). This study concludes that PBL can be used in delivering an introductory material while containing points of accounting learning material.

Comprehensive PBL can even motivate students to acquire, communicate, and integrate information. PBL can also help students to develop their critical thinking skills, solve problems holistically, work in teams, improve effective communication skills, increase the ability to find, use learning resources in solving problems (continual learner), and promote lifelong learning.

A study conducted by Abdul Manaf *et al.* (2011) found that PBL in the Financial Accounting Principles course at Universiti Utara Malaysia, which was carried out in a hybrid problem-based learning, resulted in findings that presentation skills, teamwork, leadership, and the ability to use information technology empirically have increased significantly. In addition, students also become more open to problems in the world of work. This study concludes that PBL is a challenging approach to accounting learning methods because it requires careful planning to achieve the desired learning outcomes for each course.

A study conducted by Dockter (2012) concludes that PBL in the form of case studies, custom-built case studies, simulations, and projects using IT (e.g., user-friendly software) provides advantages, such as facilitating student communication. In other words, the accessibility of information between lecturers and students is more efficient and effective.

A study conducted by Polat *et al.* (2015) introduced the concept of Learning Style Theory which divides students into 4 types: abstract conceptualization (AC), active experimentation (AE), concrete experience (CE), and reflective observation (RO). To achieve the learning objectives, the model and learning environment must be set by considering the combination of the 4 types of students. PBL shows a positive significance for attitudes, academic success, discipline in forums, and internal discipline in completing assigned tasks.

A study conducted by Hsu *et al.* (2016) results in empirical findings that focus on the subjective assessment of student perceptions towards PBL in intermediate accounting courses. Students in this research stated that PBL increased their curiosity to read financial accounting literature and improved their independent study skills.

A study conducted by Stanila (2017) concludes that in the teaching and learning process, lecturers have roles as a planner, manager, quality controller, group organizer, facilitator, motivator, empowerer, and team member. Developing critical thinking soft skills (analysis, interpretation, evaluation, concluding, explaining, and self-regulation) can be carried out in applying many learning models, such as plenary lectures, individual assignments, pair assignments, and group assignments. However, the most two effective models empirically are paired tasks and group assignments.

A study conducted by Ahmed & Kannaiah (2020) focuses on the implementation of PBL in accounting learning. The results of this study illustrate that the

accounting learning process is still carried out conventionally for the past two decades (starting in the late 1990s). The development of accounting PBL is still slow compared to PBL in the health sector and other fields of science. The different needs of stakeholders from the world of work are the triggers for changes in the curriculum and accounting learning methods. In addition, the process of formulating PBL feedback is a crucial element for realizing PBL success.

Research Methods

In this study, the researchers used Kirkpatrick's 4 Levels of Learning Evaluation Model. This model was selected and adopted as the basis for evaluating the effectiveness of the implementation of accounting PBL because this model presented more comprehensive data by including all aspects in evaluating the final results of a lesson. This model measure satisfaction not only from the students but also from users. As a result, it may become a comprehensive evaluation for lecturers. In addition, Kirkpatrick's model is an evaluation model that is specifically applied to the teaching and learning process and may address topics related to PBL. This method was derived from studies conducted by Ikraina & Gustomo (2014) and Temasek (2021). The outline of the stages of planning the evaluation process in this study can be seen in Figure 2 below.

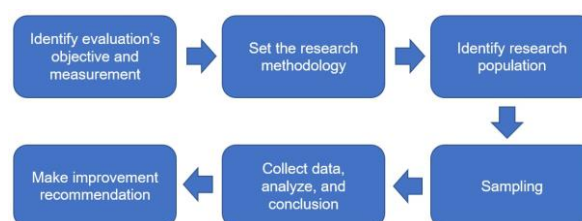


Fig. 2. Stages of Evaluation

The following is a description of the stages of the evaluation process, as seen in Figure 2 as above.

1. Defining the purpose and measurement of evaluation

The evaluation of PBL is an important factor in ensuring an efficient and high-quality learning system. Evaluation is ideally based on a set of valid indicators, measurements, and certain criteria. In addition, supporting evidence must be collected as a basis for evaluation. In the end, from the whole process in this evaluation, the

main objective is to obtain proposed corrective actions for the sustainability of PBL in the future.

2. Determining the method of data collection

This study was descriptive quantitative research which contains an explanation of the answers to research problems using narrative techniques, graphs, and presentation of processed data from primary data sources obtained through a questionnaire/survey process, assessment, and observation during the PBL process.

In designing the questionnaire/survey to make it more interesting and get the data needed, the researchers followed certain provisions: (a) applying the KISS (Keep It Simple Stupid) principle, (b) arranging questions in stages, (c) using concise and direct questions, (d) putting easy questions at the beginning, (e) setting the most important questions in the first half of the questionnaire/survey, (f) inserting the option “don't know” or “cannot apply” if it is deemed necessary, and (g) before the questionnaire was given to the sample, doing a tryout on respondents who were not included in the research sample to find out if the questions prepared could be easily understood and were able to produce relevant responses. In addition, the researchers in this study carried out the reliability test towards the question items by following the provisions of Cronbach's Alpha (Alsalamah & Callinan, 2021). The measurement scale used to measure the questionnaire was a differential semantic scale (developed by Osgood), arranged in a continuum line, in which the response “very agree” was set on the right side of the line and the response “very disagree” was put on the left side of the line (Sugiyono, 2016).

3. Identifying students and divisions involved in the evaluation

The research population in this study was all students who took courses related to basic accounting competencies (Introductory Accounting 2 and Basic Financial Accounting 2).

4. Determining the samples

To select samples, the researchers applied a purposive sampling technique with the following criteria: (a) active students involved in the

implementation of PBL and (b) students taking Introductory Accounting 2 and Basic Financial Accounting 2 courses which is total 155 students.

5. Collecting and analyzing data to conclude findings

At this stage, the researchers carry out the following sequence of processes: (a) analyzing the data and information that has been collected, (b) determining the findings and relate to the PBL evaluation indicators, and (c) drawing conclusions which then the results will be processed in the 6th stage.

Furthermore, the indicators for PBL evaluation are as follows.

1. Satisfaction of PBL users

The survey of satisfaction and reviews of PBL users consists of several indicators, including (i) mastery of social literacy competencies, (ii) work attitudes, and (iii) areas for student improvement.

2. Student workability

This survey was used to get an overview of the experiences of students completing PBL with the following question items: (i) Did students use the theoretical knowledge gained in PBL? (ii) Were they able to easily solve problems that arise in the field? (iii) How long did it take students to complete PBL? (iv) What is the final score obtained by students from PBL?

3. Level of success

Concerning this indicator, the researchers tried to get the percentage range of students who complete PBL with good grades and can satisfy all the assessment requirements.

4. Quality of PBL

The quality indicators of PBL in this study were used to get an idea from students regarding (i) the duration of PBL, (ii) the relevance of the use of PBL to the course, and (iii) the difficulty level of PBL.

5. Quality of PBL process

The indicators for the quality of the PBL process were applied to get an idea of (i) Is the PBL guidance delivery method effective via Zoom? (ii) Is the learning process in the field interesting? (iii) Is the learning environment between lecturers and students satisfactory? (iv)

Are the PBL facilities (laboratory or introductory materials) adequated?

6. Recommending improvement plans for PBL

At this stage, the researchers carried out the process of preparing proposed corrective actions and possible steps to be taken in the future, which will be discussed further in the discussion section of this article.

Results And Discussion

This study puts forwards a comprehensive evaluation model covering four levels which are expected to produce holistic suggestions and input regarding the application of accounting learning concepts using the PBL method. It is considered to be able to provide more comprehensive findings because this evaluation is seen from three assessment points of view, namely students (155 respondents), users (11 respondents), and lecturers (5 respondents).

In addition, the purpose of this study is to determine the extent to which the results of the PBL method have succeeded in achieving the desired objectives of basic accounting competencies. If the concept of PBL is never evaluated thoroughly, it will be a domino effect in which the transfer of the basic accounting knowledge cannot be in maximized which the end will be fatal for the graduates who will have fewer skills and cannot compete with the needs of the world of work.

The results of this PBL evaluation may provide decision options that may be taken into consideration, including discontinuing the PBL concept, revising or improving the accounting learning concept, increasing/decreasing the proportion of PBL time, or keeping running it without changes for the next semesters.

The obtained value of Cronbach's Alpha on standardized items is 0.592, which is > R_{table} (0.444) ($df = 20.5\%$). It means that the overall test of the question items for student questionnaires is considered reliable. For complete survey's result from students, users and lecturers can be seen on appendix.

From figure 3 below, the 55% of users stated that based on their experience and history, in terms of mastering the ability to solve problems in the field, students who can provide maximum benefits are fourth-year students (internship students). The 36% thought third-year students (semester 5 and 6) and 9% thought second-year students (semester 2 and 4). Meanwhile, for first-year students (semester 1 and 2)

it is 0%. It means that the first-year students still do not have the practical ability to solve problems in the work field. In the field, the PBL user supervises students with 4-7 members per group with the PBL duration of 1-4 weeks. The summary of the PBL evaluation survey from students' responses is as follows.

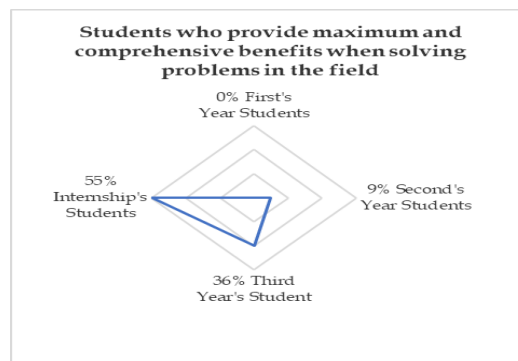


Fig. 3. The Summary of User's Responses

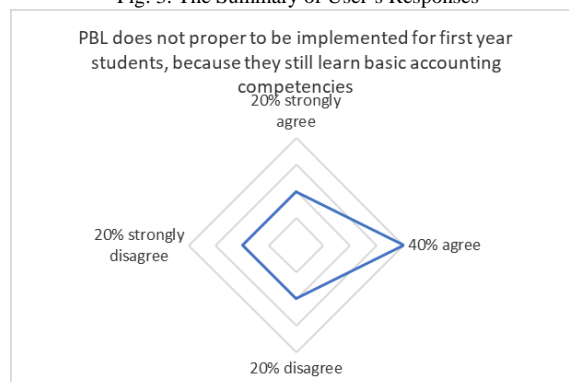


Fig. 4. The Summary of Lecturer's Responses

A great idea can lose its appeal and usefulness if it is not implemented properly. However, it does not make a great idea a bad idea. As with the PBL, this complex learning method must be supported by extensive research. To be able to make students competitive in the labor market competition in the 21st century which is rapidly changing as it is today. It is necessary to master learning skills, literacy skills, and life skills. Learning skills consist of critical thinking, creativity, collaboration, and communication. Literacy skills consist of skills in the fields of information, media, and technology. Meanwhile, life skills consist of flexibility, leadership, initiative, productivity, and social skills. According to the World Economic Forum (2020) and Sumarna (2020), there is a shift in the main types of

soft skills that need to be mastered in the business world, as summarized in the following table.

Table 2
Changes in Soft Skills Needs

| Year 2020 | Year 2015 |
|---------------------------------|---------------------------------|
| 1. Complex Problem Solving | 1. Complex Problem Solving |
| 2. Critical Thinking | 2. Coordinating with others |
| 3. Creativity | 3. People Management |
| 4. People Management | 4. Critical Thinking |
| 5. Coordinating with others | 5. Negotiation |
| 6. Emotional Intelligence | 6. Quality Control |
| 7. Judgment and Decision Making | 7. Service Orientation |
| 8. Service Orientation | 8. Judgment and Decision Making |
| 9. Negotiation | 9. Active Listening |
| 10. Cognitive Flexibility | 10. Creativity |

As seen in Table 2, the needed of soft skills five years ago had shifted quite significantly. The two soft skills are not the important ones in 2020, namely quality control skills and active listening. Besides, there are two new soft skills in 2020, namely emotional intelligence and cognitive flexibility. From the table above illustrating the comparison in 2015 and 2020, the top position for soft skill needs that has not changed is complex problem-solving skills.

Today’s companies in the era towards Social Revolution 5.0 require their employees to have balanced soft skills and hard skills, especially in the field of information technology. There are five main types of soft skills needed in the world of work, including creativity, persuasion skills, collaboration, adaptation, and emotional intelligence. Meanwhile, there are ten main types of hard skills needed in the world of work, namely knowledge of blockchain, cloud computing, analytical reasoning, AI, UX design, business analysis, affiliate marketing, marketing, scientific computing, and video creation.

Based on the results of the PBL method’s evaluation at the level of learning, by students’ responses, indicated that there was an increase in mastery in the field of social/human literacy by 60% (figure 5), technological literacy by 70% (figure 6), and data literacy by 74% (figure 7).

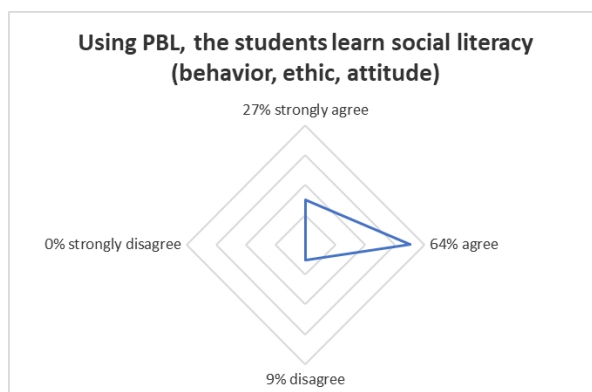


Fig. 5. The Summary of Users’s Responses

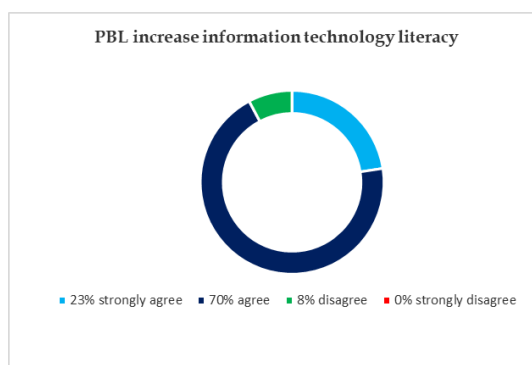


Fig. 6. The Summary of Students’s Responses

At the level of reaction, it was found that PBL provided a positive experience in group interaction (57%) and PBL was more challenging than questions provided in reference books (55%). What can be criticized from these findings, among others, is that 52% of respondents felt that to achieve basic accounting competencies, it is more effective to use conventional learning methods (case-type questions and practicum). In addition, the implementation of PBL per subject is burdensome (44%) and the implementation of several types of PBL results in reduced learning focus for courses carried out conventionally (52%).

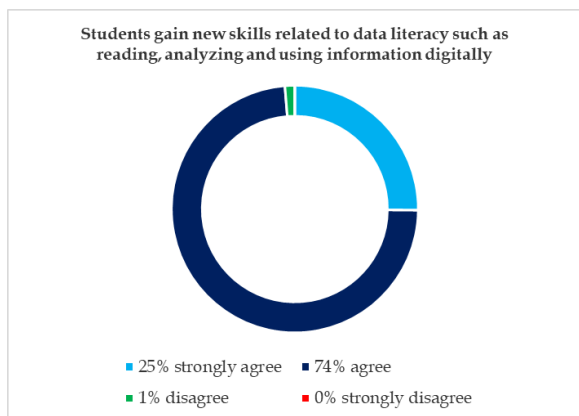


Fig. 7. The Summary of Students’s Responses

At the level of impact, it was found that students experienced an increase in their soft skills by 68% higher more than knowledge (figure 8). PBL in accounting courses can empirically increase student motivation, student involvement, positive interaction with lecturers or educators, and the development of 4C learning, namely creativity, critical thinking, collaboration, and communication. Hybrid learning is a course where some sessions are held offline (using PBL method), while others are held online (theory). Offline learning have more effective because it is less distraction, deeper understanding, and greater collaboration. While online learning have less costs, innovative delivery method and more relaxed. Student’s achievement was higher in hybrid learning when compared to either fully online or offline learning. For hybrid learning should be make interactive by encouraging questions and polling.

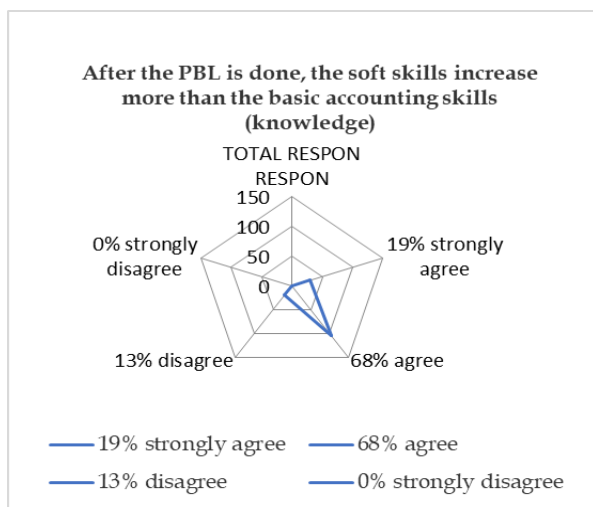


Fig. 8. The Summary of Students’s Responses

From the evaluation of PBL achievement using Kirkpatrick’s 4 Levels of the evaluation model, improvement plans and reconsideration of PBL implementation can be carried out in the following aspects:

1. Goals of PBL

PBL should be used as a method for students to become individual learners in which PBL is a means of providing cognitive experience (new knowledge), behavior (new skills), and comprehensive learning performance (outcomes). PBL should not only be implemented to fulfill administrative obligations. It must be remembered that a strong PBL is a PBL that can connect students with real-world work-oriented learning processes. When PBL has no connection to the real world, it will be felt artificial and can lose the power to motivate students to engage in deeper learning. PBL is an inquiry-driven learning process. If higher education institutions consider the product as the ultimate goal, it will obscure the expected learning development. PBL ideally involves students participating in solving challenging and interesting real-world problems. Through this process, students build and develop problem-solving skills and how to produce creative solutions to answer complex problems. In short, PBL should teach students not only content and product development but also how to learn through inquiry.
2. Forms of PBL

To be able to adapt to unpredictable changes in the future, students need supporting soft skills. This ability can be formed by (1) learning problem solving, (2) learning through systematic experimental activities, (3) learning from experience, (4) learning from the world of work or through internships, and (5) transferring and applying what has been learned in the classroom. In other words, lecturers should create real-world connections by investigating problems that occur locally or globally, connecting students’ interests and concerns, simulating professional products, and simulating professional processes to solve real-world problems.
3. Complexity of PBL

The 69% of students considered that PBL while was carried out per subject only applied 1 or a few course materials, make it ineffective in achieving the main goals of PBL. The implementation of PBL like this is not efficient

because the time for the teaching and learning process will be spent on completing PBL, especially for basic accounting courses which require more and longer lecture sessions to explore the case questions that can strengthen the basic understanding of accounting. The 69% of students expect PBL to be implemented comprehensively (figure 9) in which PBL can cover several courses, not just per subject. Therefore, the PBL must be designed to facilitate students to identify their respective problems to deal with and to build their respective investigations without detailed, interventional guidance.

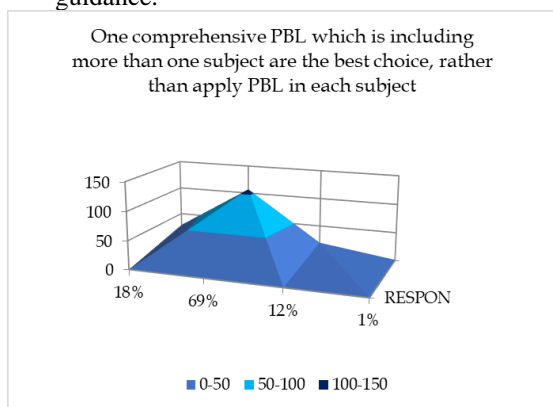


Fig. 9. Responden's Respon

4. Time of PBL

The comprehensive PBL can be implemented by carrying out the concept of problem-solving using the combination of material from several courses. Therefore, the implementation time can be more efficient and more effective in achieving learning objectives regarding complex soft skills. The atmosphere in the PBL class should look and feel different from most conventional classes. It is because PBL classes can be designed in such a way so that students can choose their respective learning journeys by collaborating with that classmates and other students other classes and even across studies programs in a study group called a team.

5. Assessment Tool

This evaluation needs the preparation of standard and comprehensive assessment tools that cover all aspects to be assessed, such as the assessment component for soft skills and written tests assessing the components of knowledge,

presentations, PBL outputs, and continuous feedback. Although the assessment of the final PBL product is important, the design of the concept of formative and summative assessment on individual learning must also need attention. Also need peer review from each team members. Student will give score to other tim's member in some softskills aspect such as team work, cooperative, ideas, leadership, inisiatif, etc.

Conclusions

The objective of learning outcomes for basic accounting courses is to master competencies that are take least equivalent to the competencies required to get Accountant Technician certification & Chartered Accountant Level 1 certification and to pass the basic accounting courses (D3 Accounting and D4 Managerial Accounting). From the discussion of the PBL evaluation for the basic accounting competency courses using Kirkpatrick's 4 Levels of Learning Evaluation Model, it can be concluded that the implementation of PBL for the basic accounting competency courses is less effective in achieving learning outcomes (figure 4) and inefficient in terms of time (having too many sessions or lecture weeks focusing only for PBL topics which cover very little material from the total lessons per course). First year students prefer full offline or conventional learning, while final year students prefer hybrid learning.

Based on the discussion of PBL evaluation for the basic accounting competency courses using Kirkpatrick's 4 Levels of Learning Evaluation Model, it results in several suggestions or inputs, as follows.

1. For basic accounting competencies, the best choice is the conventional method to strengthen the competency foundation so that students can prepare for certification at the same time.
2. PBL in basic accounting competency courses should be considered for not applied into the 1st year students because it is not effective in improving students' basic accounting skills.
3. PBL can be applied to courses outside the basic accounting competencies, such as for the advance accounting, advance auditing, advance financial management, etc.
4. Basic accounting competency courses should be intensified to deepen concepts by the case questions and practicums rather than by project based.

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