

Designing the Worksheet Book to Support the Implementation of Flipped Classroom in Introduction to Accounting Course

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Abstract. This worksheet was designed as a part of the development of flipped classroom (FC) model to enhance students' critical thinking skills in Introduction to Accounting course. The worksheet book was designed as an appropriate media for learning accounting cycle for students in Introduction to Accounting class. This paper focuses on how the design of worksheet book looks like, what kinds of learning activities are facilitated, and the result of expert validation. The procedure of designing the worksheet adopted the steps of system approach to instructional learning program design by Dick and Carey, especially step one to nine, namely from identifying instructional goals to formative evaluation. The formative evaluation was conducted in expert validation. The design of worksheet adopted the characteristics of FC model which facilitate student learning activities outside and inside the classroom. The learning syntax of the FC model that has been developed consists of six steps, namely connection, quiz, exploration, construction, reflection, and expression. The learning activities that are facilitated with worksheets are independent study, preparing discussions, and applying the understanding of the materials by doing exercises and cases in groups. The result of the expert validation showed that the worksheet book was appropriate to be used as the media for Introduction to Accounting course that implement FC model .

Keywords: Accounting Course · Flipped Classroom · Worksheet Book

1 Introduction

This student worksheets were designed to facilitate student learning activities in learning Introduction to Accounting courses by applying the flipped classroom (FC) model to improve students' critical thinking skills. FC is a learning model incorporating a "blended learning" approach that reverses traditional teaching and learning models [1–4]. In the FC model, learning activities that are usually carried out in class are replaced with learning activities that are usually carried out by students outside the classroom. Usually in traditional classes students listen to explanations in class and then do assignments at home, but in FC students read literature and assimilate subject matter through videos

at home, then in class they are involved in problem solving, analysis, and discussion activities guided by the teacher [5, 6].

In general, learning activities in the FC model include three parts: before class, during class, and after class [7]. Learning activities before class are activities to prepare the students for learning in class. This activity is carried out independently to learn basic concepts that require low-level thinking skills (in Bloom Taxonomy). Learning activities that are usually carried out before class include: learning through videos, power points, textbooks; doing on the worksheets, making mind maps, taking notes, taking quizzes, and engaging in online discussions. Class time is prioritized for activities that activate students and develop higher order thinking skills. Learning activities during class include: discussion of difficult concepts, solving problems or cases in groups, working on worksheets, presentations, simulations, debates, role plays, and practices. Activities in the classroom can integrate several innovative learning strategies to activate students, such as problem-based, case-based, inquiry-based, and collaborative learning. Learning activities after class include: reflection, online discussions, working on projects, quizzes, and completing worksheets [3, 7–9].

To support the implementation of the FC model in learning, various supporting facilities and learning media are needed, such as video materials to facilitate learning activities before class, and worksheets that can be used by students both outside and inside the classroom. The FC model emphasizes the application of active learning strategies [10]. Therefore, the availability of worksheets is important. Through worksheets, students are engaged in what learning activities they should do and how they do it. Some other benefits of using worksheets in learning are helping students form their own knowledge, increasing efficiency in learning, and simplifying concepts so that they can be more easily constructed in students' minds. In conceptual learning, in particular, well-designed tools and materials are needed, such as worksheets [11]. The use of worksheets is also seen as a way that can keep students focused on doing assignments during the learning process [12].

Accounting courses, including Introductory Accounting, are practical courses which need understanding and application of a large number of complicated accounting standards. In addition to teaching accounting rules and concepts, educators need to improve practical skills so as to help students understand and remember rules better. It will also facilitate the achievement of other goals of accounting education, such as developing thinking skills, communication and problem-solving skills, and the ability to learn lifelong [13].

By considering the content and characteristics of the materials in an Introduction to Accounting course that requires a lot of practices, the application of active learning strategies and the use of worksheets are very relevant. Working on worksheets, students can more easily understand the application of accounting rules and concepts. Worksheets can also demonstrate the articulation of the financial statements that may help accounting students to understand better the relationship between a beginning and ending balance sheets, income statements, and the cash flow statements. Understanding the articulation of the financial statements should enable students to understand better the effects of transactions on the financial statements of an entity [14].

The application of an active learning strategy and the use of technology are important elements in accounting learning. FC is an innovative approach that is suitable to be implemented to support active learning in teaching accounting [15]. Some researches showed that students in the FC class performed significantly better on the students' academic achievement, retention, and learning motivation compared to students in traditional method [16–20].

This paper describes the design of worksheets to facilitate active learning in Introduction to Accounting courses by applying the FC model. The developed FC model consists of six stages, namely connection, quiz, exploration, construction, reflection, and expression. The worksheet book was designed to facilitate student learning activities in the six learning stages. The materials learned through worksheets are about the accounting cycle in Introduction to Accounting class. This paper focuses on how the design of the worksheet book looks like, what kinds of learning activities are facilitated, and the result of expert validation.

2 Methods

The procedure of designing the worksheet adopted the steps of system approach to instructional program design by Dick and Carey. The steps involved in designing this worksheet are 9 out of 10, especially step one to nine. Those steps are: 1) identify instructional goals, 2) conduct instructional analysis, 3) identify entry behaviors, 4) write performance objectives, 5) develop criterion referenced tests, 6) develop instruction strategy, 7) develop and select instruction materials, 8) develop and conduct formative evaluation, and 9) revise instruction [21]. The formative evaluation was conducted in expert validation.

3 Results and Discussion

1) Worksheet Design

The design of worksheet adopts the characteristics of FC model which facilitate student learning activities outside and inside the classroom. The learning syntax of the developed FC model consists of six steps, namely connection, quiz, exploration, construction, reflection, and expression. Therefore, the prepared worksheets are designed to facilitate the six stages of learning activities. The connection stage is carried out outside the classroom (before class), and followed by doing online quizzes. The exploration and construction stages are carried out during face-to-face learning in class. The reflection and expression stages are carried out outside the classroom after learning in class. The worksheet comprises questions, practice questions, and cases, as well as spaces to answer questions, do exercises, and solve cases at each stage of learning in each learning topic.

The learning activities in the syntax of the FC model are shown in the following Fig. 1:

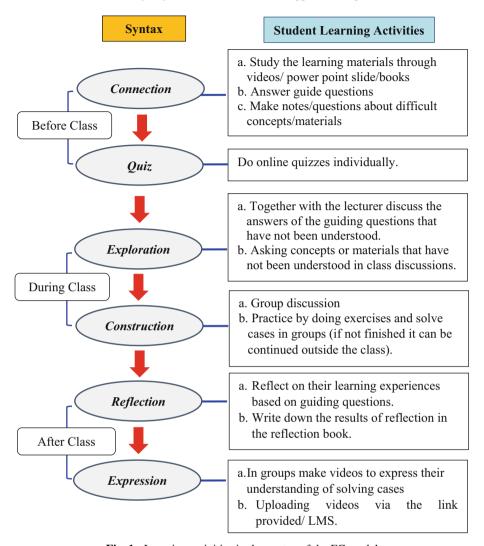


Fig. 1. Learning activities in the syntax of the FC model

The six learning activities are designed and applied to each learning topic, in the Introduction to Accounting course. The worksheets developed to facilitate these learning activities are as follows:

Connection Stage

The connection stage is a learning activity carried out outside the classroom (before class). This activity is intended to prepare the students for face-to-face learning in class. To facilitate the connection stage learning activities, student worksheets consist of three components, namely: 1) description of learning activities; 2) guide questions; and 3) formulation of questions about difficult concepts.

The description of learning activities provides a description of the learning activities that must be carried out by students. The guide questions section contains guiding questions related with the material learned by students through videos provided by lecturers, textbooks, and other learning resources. These guiding questions are answered by students while studying the assigned material. For each question, there is a place to write a description of the answer. This guide question discusses more about concepts, principles, and procedures in accordance with the characteristics of the materials in the Introductory Accounting course, especially on the materials of the service and trade business accounting cycle. Another reason is that learning activities outside the classroom are carried out independently so that the materials assigned for the students to learn are those that require low-level thinking skills according to Bloom's taxonomy, especially the ability to remember and understand.

Formulation of questions about difficult concepts comprise suggestions for students to take note of concepts that are difficult to understand and formulate questions. This section provides a place to write questions. Questions that have been formulated by students can then be submitted in online Learning Management System (LMS) or class WhatsApp group, or submitted during class discussions.

Through learning activities at this stage, students are expected to be able to prepare themselves well, before participating in class learning so that while in class students can be actively involved in class or group discussions.

Quiz Stage

At this quiz stage, the student's activity is to do the quiz questions given by the lecturer. The purpose of this stage is to measure the extent to which students have understood the material assigned by the lecturer, which is learned through videos, textbooks and other learning resources. Giving quizzes is also intended to motivate the students to learn the materials before learning in class. In addition, by giving quizzes, lecturers have the opportunity to provide incentives in the form of certain points or scores to students.

Quizzes are carried out online before the classroom learning is carried out. Therefore, at this stage the student worksheet only consists of 2 parts, namely: 1) description of learning activities; and 2) quiz work. As in the previous stage, the description of learning activities contains a description of the learning activities that must be done by students. Because the quizzes are conducted online, the quiz section only contains instructions for students to do quiz questions via the links provided in the LMS or WhatsApp group.

Exploration Stage

The exploration stage is carried out during face-to-face meetings in class. At this stage students are given the opportunity to deepen their understanding of the materials they have learned outside the classroom. There are two main activities in this stage, namely:

- 1. At the beginning of the meeting, the lecturer opens a discussion by reviewing the guiding questions that the students have done at the connection stage. Students are given the opportunity to share their difficulties in answering the guiding questions.
- The discussion activity is followed by reviewing the questions that have been submitted by students online or which have been recorded in the worksheet by students at the connection stage. Next, the lecturer and students discuss these questions, while

doing question and answer activities. During the discussion, students are also given the opportunity to ask questions.

At this stage the main learning activity is class discussion. To support this learning activity, the worksheet consists of two components: 1) description of learning activities; and 2) class discussion. In the class discussion section, there are two activities, namely, 1) students are asked to write questions that arise during the discussion, and 2) new knowledge gained through class discussion activities.

Construction Stage

The construction stage is also carried out in face-to-face meetings in class, which is a continuation of the exploration stage. At this stage, students apply the understanding that has been obtained in the previous stages by doing exercises, and solving cases. In this case, exercises and cases are differentiated. The exercises are intended to implement or apply directly the stages in the accounting cycle that students have theoretically learned in previous learning activities. Cases are aimed to develop students' critical thinking skills. So, the cases are not just requiring students to apply knowledge about the accounting cycle (application and analysis), but in solving it the students are required to develop high-level thinking skills, namely: analysis, evaluation, and creation.

To facilitate learning activities in the construction phase, student worksheets consist of components, namely, 1) description of learning activities and 2) practice. The practice section is divided into two: 1) exercises, and 2) cases. Each topic is provided with several exercises and cases, depending on the breadth and depth of the materials. In each exercises and cases, spaces or forms are provided to write down the answers according to the instructions. For example, students are asked to make journal entries, postings, trial balances, and financial statements, then a space to answer or journal form, forms for accounts in the general ledger, and a space to make financial reports such as income statement, retained earnings statement, and statement of financial position are provided.

Through doing the exercises, students learn through hands-on experiences practicing knowledge of concepts, principles, and procedures in the accounting cycle. Meanwhile, through solving cases, students are given a stimulus so that their critical thinking skills are developed. The practice of working on practice questions in exercises and solving cases is done collaboratively through discussion in small groups consisting of 3–5 students.

In conventional learning models, this process is usually carried out outside the class-room as home assignments or homework, after students learn theories in class. Doing exercises and solving cases require higher order thinking skills in Bloom's Taxonomy. Therefore, in this FC model, face-to-face activities in class are focused on learning activities that can develop students' high order thinking skills. In this process, students actually need more help from lecturers and also from other friends through interaction and communication in group discussions.

Reflection Stage

The reflection stage is carried out outside the classroom. At this stage students are given the opportunity to reflect on the learning experiences. The students' reflection process is carried out based on the reflection guide questions that have been prepared by the lecturer. Through this activity, students are directed and guided to recall and reflect on the various learning experiences they have had, both related to cognitive processes, values or meanings that can be found from these experiences. This reflection activity helps students realize the extent of understanding and knowledge they have acquired. Based on the results of the reflection, students are directed to develop good intentions that can be done for self-development as students, especially related to the development of critical thinking skills and learning responsibilities.

To facilitate reflection activities, student worksheets consist of components, namely: 1) description of learning activities; and 2) reflection. To support reflection activities, a separate reflection book is provided, so that the reflection section contains instructions for students to reflect on the learning experiences that they have experienced and write down the results of reflection in students' reflection book. The students' reflection book contains reflection guide questions and spaces to write down the reflections. The students' reflection book is shown in Fig. 2.

Expression Stage

The expression stage is carried out outside the classroom after face-to-face learning in class. At this stage the main activity is to express the understanding that has been achieved in the previous stage. This activity is carried out by making videos with a duration of 5–10 min about what they have understood, especially from the case resolution process. Students work on this task in groups, then the results are uploaded in LMS.

Through expressing the students' understanding, it is hoped that it helps students deepen the knowledge that has been obtained in the previous stage. In addition, this task can also motivate students to carry out each stage seriously and truly understand the expected concepts, procedures, and reasoning processes. From the lecturer's side, the results of student expressions can also be used as feedback, and at the same time to measure the student achievement after going through the learning process.

To facilitate expression activities, student worksheets consist of two components: 1) description of learning activities, and 2) the expression of understanding. The expression-of-understanding session is meant to ask the students to express their understanding of cases that have been completed at the construction stage and the results of their reflections. In addition, they are provided with detailed instructions to do this task.

The worksheets are expected to: (1) assist the students to understand the materials; (2) increase students' involvement in the learning processes; (3) make the students easier



Fig. 2. Students' reflection book

to learn (because the cases and worksheets are packaged into one); (4) create a more meaningful learning experience; and (5) direct the learning process to be more planned, directed, and systematic.

The worksheet book consists of three books. Each book contains worksheets for material: 1) recording process, 2) adjusting the accounts and completing the accounting cycle, 3) accounting for merchandising operations. The worksheet books are shown in Fig. 3.

2) Facilitated Learning Activities

This section describes the learning activities that can be facilitated through the use of worksheets at every stage of learning. The learning activities that are facilitated with worksheets are independent study, preparing discussions, and applying the understanding of the materials by doing exercises and cases in groups.

Independent Study

At the connection stage, students are directed to study independently by watching videos of materials that have been provided by lecturers, textbooks, and other learning resources. While studying, students answer the guiding questions that have been provided in the worksheet. These guiding questions are intended to help students find important points to understand, and also check students' understanding of the materials being studied. Therefore, with these guiding questions, it is hoped that the students' independent learning process be carried out in a more focused and structured manner.

Preparing Discussions

In addition to answering the guiding questions, at the connection stage students are also asked to write down difficult concepts or materials on the worksheets that they have not yet understood. The questions then are asked during class discussions or online discussions. Through this activity, every student has the opportunity to prepare questions for discussion. Therefore, students can be more actively involved in discussions.

Applying the Understanding of the Materials

The application of understanding occurs at the construction stage through direct practices by working on exercises and solving cases. In the Introduction to Accounting



Fig. 3. Worksheet books

course, the practices are carried out in manually applying the accounting cycle in both service businesses and merchandise operation. The exercises and cases in worksheets accompanied by various forms to work on help facilitate students to apply the understanding of the materials learned in learning activities at the previous stage. The provided form for exercises and cases make the students to work faster and more easily rather than answering manually in a notebook using their handwriting. The questions and answers in one book, as well as the answers written on the worksheets also look neater, making it easier and enjoyable to learn.

3) The Result of Expert Validation

To ensure that the developed worksheets are of good quality or worth from various aspects so that they can be used in introduction to accounting learning, validation is carried out by experts. The validation process is carried out by the use questionnaires as the instrument consisting of four aspects of assessment, namely, content, content presentation, cover, layout, and language. The qualitative data in a form of comments and feedback were then used to revise the worksheets. The quantitative data were analyzed using descriptive statistics. The result of analysis is presented in Table 1, as follows (Tables 2 and 3).

The results of the validation of the three worksheet books by four validating experts showed that all aspects had an average score that was included in the very valid category (more than 3,4). For the worksheet book 1, content aspect has an average score of 3,49; the content presentation aspect has an average score of 3,56; the cover aspect has an average score of 3,54; the layout aspect has an average score of 3,63, and the language aspect has an average score of 3,70. The worksheet book 2 has an average score for the content aspect of 3,60, for the content presentation aspect of 3,50, for the cover aspect of 3,79, for the layout aspect of 3,63, and for the language aspect of 3,60, for the cover aspect of 3,80, for the content presentation aspect of 3,69, for the cover aspect of 3,83, for the layout aspect of 3,66, and for the language aspect of 3,95. Based on the result of worksheet evaluation from all the experts, and their feedback, the worksheet books were revised.

Evaluated Aspects	Number of Item	Average Scores of Each Expert				Average	Categories
		Expert 1	Expert 2	Expert 3	Expert 4	Score	
Content	21	4,00	3,52	3,00	3,43	3,49	Very valid
Content Presentation	8	4,00	4,00	3,00	3,25	3,56	Very valid
Cover	4	4,00	4,00	3,00	3,17	3,54	Very valid
Layout	6	4,00	4,00	3,00	3,5	3,63	Very valid
Language	5	4,00	4,00	3,00	3,80	3,70	Very valid
Total/Average	44	4,00	3,90	3,00	3,43		

Table 1. Result of Expert Validation of Worksheet Book 1

Evaluated Aspects	Number of Item	Average Scores of Each Expert				Average	Categories
		Expert 1	Expert 2	Expert 3	Expert 4	Score	
Content	21	4,00	3,57	3,62	3,19	3,60	Very valid
Content Presentation	8	4,00	3,50	3,50	3,00	3,50	Very valid
Cover	4	4,00	4,00	3,33	3,83	3,79	Very valid
Layout	6	4,00	3,38	4,00	3,13	3,63	Very valid
Language	5	4,00	4,00	3,40	3,80	3,80	Very valid
Total/Average	44	4,00	3,69	3.57	3,39		

Table 2. Result of Expert Validation of Worksheet Book 2

Table 3. Result of Expert Validation of Worksheet Book 3

Evaluated Aspects	Number of Item	Average Scores of Each Expert				Average	Categories
		Expert 1	Expert 2	Expert 3	Expert 4	Score	
Content	21	4,00	3,57	3,90	3,71	3,80	Very valid
Content Presentation	8	4,00	3,50	4,00	3,25	3,69	Very valid
Cover	4	4,00	4,00	3,83	3,50	3,83	Very valid
Layout	6	4,00	3,38	3,88	3,38	3,66	Very valid
Language	5	4,00	4,00	4,00	3,80	3,95	Very valid
Total/Average	44	4,00	3,69	3,92	3,53		

4 Conclusion

The results of validation by experts indicated that the developed worksheet is appropriate to be used as one of the learning media in Introduction to Accounting learning by implementing the FC model. By using this worksheet, it is hoped that the learning activities carried out by students at each stage of learning both outside the classroom (before class), during class, and after class be more focused and systematic. Likewise, student involvement in the learning process can also be improved.

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