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Training on Fixed Asset Depreciation Calculation for Providentia High School Students

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ABSTRACT

This PKM initiative was conducted in collaboration with Providentia High School, located at Jalan Kedoya Raya No. 35, West Jakarta. The primary issue addressed in this program is that students frequently encounter difficulties in answering questions related to fixed assets during accounting competitions. In response, the school requested that the PKM team provide training on types of fixed assets, depreciation methods, and depreciation calculations. To address this challenge, the PKM team from Tarumanagara University organized a Problem-Based Learning (PBL) training session on Thursday, October 24, 2024, involving 26 class XI-Science students. The implementation method of this PKM is carried out in several steps. First, the PKM Team explained material about the definition and examples of fixed assets, the application of the straight line depreciation method, declining balance method and unit of production method. Second, students are invited to work on practice questions in discussion. Finally, as feedback, the PKM Team held a quiz in the form of games with attractive prizes for the quiz winners. The results of this PKM activity indicate a significant improvement in students' comprehension and enthusiasm for fixed asset accounting. Initially, most students were unfamiliar with the concept of fixed assets and their accounting treatment. However, after the training, they demonstrated a substantial understanding of fixed assets and the application of depreciation methods.This PKM program produced two key outputs: (1) a mandatory output in the form of a scientific publication in an ISSN-accredited journal, and (2) an additional output in the form of intellectual property rights (HKI)-eligible works.

Keywords: Fixed Assets, Depreciation Method, PKM Initiative

1. Introduction

The increasingly competitive business world encourages business units to be more careful in making decisions, because if the wrong decision is made, it will threaten the sustainability of the business unit (Widiantoro & Susilowati, 2024). One of the basics in making the right decision is to analyse the resulting financial statements. Hence, it is crucial for financial statements to provide users with trustworthy and precise financial data to aid in their decision-making process. This can be accomplished by adhering to relevant Financial Accounting Standards (SAK) when disclosing the value of fixed assets.

Financial reports are written documents that present numerical data on the financial status and fluctuations, along with the outcomes achieved within a specific timeframe (Sadeli, 2011). A business's financial documents include a variety of sections, including the Statement of Financial Position (Kieso et al., 2020). The Statement of Financial Position provides details on the company's assets, liabilities, and equity as of the period's end. Current Assets and Fixed Assets are the two main categories of assets (Harahap, 2016).

Fixed Assets, being valuable and crucial to the company's daily functions, require appropriate management practices for proper recording, reporting, and administration.

According to the IAI (2015) and PSAK No.16 (Revised 2011), fixed assets are tangible assets that are owned for the purpose of producing goods or services for sale, or for administrative use, and are expected to be used for more than one period (Jannah & Diantimala, 2018). In PSAK No.16 Revised (IAI, 2018), fixed assets are classified based on their class, where a class refers to a group of assets with similar characteristics and uses in the entity's operations. Examples of different categories include Land, Buildings, Machinery, Ships, Aircraft, Vehicles, Furniture, and Office equipment (IAI, 2016). According to PSAK No.16, the accounting for fixed assets is broken down into six categories: Recognition of Assets, Expenses on Fixed Assets, Valuation of Fixed Assets, Depreciation of Fixed Assets, Disposal of Fixed Assets, and Reporting and Disclosure of Fixed Assets (Punusingon et al., 2018).

Depreciation must be regularly performed on fixed assets with a finite economic lifespan. According to Kieso et al. (2020), depreciation involves spreading out the cost of fixed assets over their useful lifespan in a logical and organized way. Land is not subject to depreciation as it does not have a limited lifespan.

The depreciation expense is determined by taking into account the acquisition cost, the expected useful life, and the residual value of the asset (Dewi et al., 2017). The Acquisition Cost refers to all expenses needed to acquire a long-term asset, excluding costs for the asset to be ready for use. Useful life is the expected duration of time that an asset can generate economic benefits for the company. Residual value is the anticipated value of fixed assets after the end of their useful life (Kieso et al., 2020).

Management has the freedom to select the depreciation technique that they feel accurately reflects the asset's impact on profitability throughout its lifespan (Kieso et al., 2020). There are three types of depreciation methods generally accepted in accordance with Financial Accounting Standards. The first is the **Straight-Line Method**, which is the simplest and most widely used. This method generates a consistent depreciation expense for each period, making it easy to apply and predict. The second is the **Diminishing Balance Method**, also known as the declining balance method. Under this approach, the highest depreciation expense occurs in the initial period and gradually decreases over time. Lastly, the **Units of Activity Method** calculates depreciation based on production units rather than time periods or years. This method ensures that depreciation expense aligns with the actual usage or output of the asset.

Fixed assets refer to concrete assets that are possessed with the intention of using them for the production or acquisition of goods or services, for providing to others, or for administrative use, and are anticipated to be utilised for multiple periods (Kasmir, 2017). As per this explanation, an asset is categorised as a fixed asset if it possesses three qualities at the same time. To start with, it has a tangible shape like real estate, structures, and machinery. Second, it is used to produce or provide goods/services, leased to others or for administrative purposes. Factory machinery is an example of assets that are used to produce goods so that they can be categorised as fixed assets.Third, it has a useful life of more than one accounting period.

Fixed assets with a finite useful life need to be depreciated over time and are displayed in the financial statement at their original value minus depreciation. This category includes buildings, machinery, furniture, vehicles, tools, and natural resources. Conversely, fixed assets with an unlimited useful life are shown at their original cost in the financial statement. It is important to depreciate fixed assets with a limited time frame to accurately reflect their value over time.

Depreciation involves spreading out the cost of fixed assets (excluding land) as an expense over their useful lifespan in a structured manner. The main goal of asset depreciation is to show the decrease in value of assets as time passes. Depreciation is done to ensure that the value of assets in financial records accurately reflects their true worth. There are several key goals of asset depreciation. First, it serves to **recognize impairment over time**, as fixed assets such as buildings, machinery, and equipment deteriorate due to usage and other factors. Second, depreciation helps **present a more accurate book value** of fixed assets in the balance sheet by reflecting their net value after accumulated depreciation. Lastly, it facilitates **asset replacement planning** by allowing companies to anticipate when a fixed asset will reach the end of its useful life, enabling more effective planning for its replacement or renewal.

In addition, there are three elements that impact the determination of depreciation. Initially, the initial cost of the asset (price), encompassing all expenses needed to acquire the asset and prepare it for use. Secondly, the estimated useful life, which is a projection of how long the asset will remain functional based on maintenance needs, durability, and vulnerability to becoming outdated. Ultimately, residual value refers to the predicted amount an asset will be worth once it reaches the end of its operational lifespan. Some examples of fixed assets requiring depreciation include buildings, machinery, equipment, vehicles, and the like. On the other hand, land is considered a fixed asset that does not depreciate due to its limitless useful life.

Depreciation methods commonly used in practice include the **Straight-Line Method**, the **Units of Activity Method**, and the **Double Declining Balance Method**. The **Straight-Line Method** depreciates fixed assets by allocating the same depreciation expense each year until the end of the asset's economic life. This method is suitable when the economic value of the asset remains consistent over time and is often applied to assets whose benefits are not influenced by production volume, such as office equipment and buildings. The **Units of Activity Method** calculates depreciation based on the total number of units produced rather than the passage of time. This approach is particularly suitable for machinery used in factories, as its depreciation is directly related to usage, unlike buildings or furniture, which depreciate over time. Lastly, the **Double Declining Balance Method** applies higher depreciation expenses in the initial years and lower expenses in later years. This method reflects the common trend of assets being more efficient and productive in their early years, making it useful for assets that experience rapid initial wear and tear.

Frequently used depreciation method formulas:

Table 1. Depreciation Methods and Their Formulas

No.	Depreciation Methods and Formulas
1.	Straight Line $\text{Depreciation/year} = \frac{\boldsymbol{cost - residual\ value}}{\boldsymbol{useful\ (in\ year)}}$ or $\text{Depreciation} = \frac{\mathbf{100\%}}{\boldsymbol{useful\ (in\ year)}} \times (\boldsymbol{cost - residual\ value})$
2.	Units of Activity $\text{Depreciation expense} = \frac{\boldsymbol{cost - residual\ value}}{\boldsymbol{total\ units\ of\ activity}} \times \boldsymbol{units\ of\ activity\ during\ the\ year}$
3.	Double Declining Balance $\text{Depreciation} = \frac{\mathbf{100\%}}{\boldsymbol{useful\ life\ )in\ year)}} \times \mathbf{2} \times \boldsymbol{book\ value\ at\ beginning\ of\ year}$ or $\text{Depreciation} = \frac{\boldsymbol{cost - acc\ depreciation}}{\boldsymbol{useful\ life\ )in\ year)}} \times \mathbf{2}$

Source: Kieso et al. (2020)

The approach chosen will vary depending on the status of the business in possession of the physical assets. Proper documentation is needed for fixed assets, from acquisition to disposal, to ensure accuracy of accounting records. The purpose of recording is to keep the book value of fixed assets current and provide accurate information to users of financial statements.

This Community service (PKM) activity is carried out by establishing a partnership with Providentia High School which is located at Jl. Kedoya Raya No. 35. West Jakarta. Based on interviews with the school, the problem faced by Partners is that the accounting material provided to students is very limited, which only reaches the accounting of service companies and trading companies. These two materials are felt to be insufficient as provisions in participating in the high school accounting competition. It is evident that students sent in the competition always have difficulty in solving questions related to fixed assets and calculation of depreciation methods. Therefore, students need to be equipped with broader accounting knowledge,

especially in calculating the depreciation expense of fixed assets so that they are better prepared to participate in accounting competitions and can get to know accounting knowledge more broadly.

This PKM will also support the Road Map of PKM activities in line with RIP-PKM, by providing training with useful topics to encourage students to have an entrepreneurial spirit by introducing broader accounting knowledge applied in the business world, especially regarding various depreciation methods used in calculating the book value of fixed assets. The expected contribution in the implementation of this PKM activity is that by understanding the methods of depreciation of fixed assets and being able to calculate depreciation expenses correctly, students can report fixed assets in the Financial Statements in an appropriate manner in accordance with applicable Accounting Standards. In addition, this training can attract students to study accounting more deeply at the university level, because this training will be carried out with teaching methods that are easy to understand and a lively atmosphere, namely: with questions and answers, group discussions, discussing exercise questions accompanied by various games with attractive prizes as feedback. SMA Providentia implements a holistic education programme, covering cognitive, affective, dynamic, and psychomotor aspects. Bellow is the figure of Providentia High School as a location of current community service (PKM) activity:

Figure 1. Providentia High School

2. Methodology

The following is a description of the form/type of implementation method in this PKM, namely:

1. Using a Theory-based approach. The PKM team will create a training module that contains material: Definition of Accounting, Accounting Users, Basic Accounting Concepts and Paired Journal System. This module will be discussed by lecturers providing teaching and question and answer.
2. Using an exercise-based approach and group discussions. The PKM team provided several practice questions that were discussed and worked on in groups. The goal is to have a discussion and transfer of knowledge, where students who understand faster will teach other friends to understand faster.
3. Using the Games approach in groups. The purpose of the Games is as feedback to find out the extent to which students understand the material that has been given. Games will be designed like a quiz, where after the questions are read, the group is given the opportunity to compete to answer the questions given. The more correct answers given, the more points earned and the winning group is entitled to a prize provided by the PKM Team

3. Results and Discussion

This PKM activity was held on Thursday, 24 October 2024, at 08.30 - 10.00 am. The PKM team consisted of one lecturer (PKM Implementation Team Leader) and two accounting students (PKM Implementation Members). While the PKM participants consisted of 26 students from class XI-IPA.

The team arrived at Providentia High School at 08.00. Various preparations were made before the training began, including: (1) The school welcomed the PKM Team and escorted the PKM Team to the room that had been provided, which was the counselling room, (2) The school provided the trainees, classrooms and equipment such as markers, In-Focus, and presentation screens, and the attendance list of the trainees; (3) While waiting for the trainees to enter the room, the PKM Team prepared the training materials and tools; and (4) The training event was opened with introductions by the school and the PKM Team at 08.30 am.

Furthermore, after the introduction, the first session was opened with the presentation of training materials in the form of ppt by the PKM Team. The material presented consisted of: Definition of Fixed Assets, Determination of Acquisition Price of Fixed Assets, Definition of Depreciation, Factors Affecting Depreciation Calculation, and Types of Depreciation Methods. Before the presentation of the material, the training participants were given questions and answers about examples of fixed assets and mentioned the characteristics of fixed assets. The results obtained from this first session were that the material we delivered could be followed well and enthusiastically by the students. This can be seen from the way they pay attention and ask questions. The following is a documentation of the first session situation:

Figure 2. First Session Situation

After the presentation of the material for approximately 15 minutes, the Second Session continued by discussing exercise questions about journals and calculating depreciation of fixed assets. In this session, students were invited to actively count and actively answer questions given by the PKM Team. The atmosphere was relaxed and there was good communication in both directions, all participants had good feedback or satisfactory understanding of the material presented. The atmosphere of questions and answers or games was exciting, all participants competed enthusiastically. The results obtained in this second session are: students who previously did not know the calculation method of depreciation of fixed assets, now they understand and understand the calculation of depreciation of fixed assets with 3 methods, namely: straight line method, declining balance and unit of activity. The following is a documentation of the Second Session situation:

Figure 3. Second Session Situation

In the third or final session, a quiz was held in the form of fast-paced games. In this session, participants were given various questions about the material that had been given. Those who were entitled to a prize were the participants who answered the most correctly and the fastest. The results obtained in this last session were: the emergence of great interest from students to compete in answering the questions given. This has a very positive impact on the trainees and the school, so that later they are motivated to take part in accounting competitions organised in the community. The following is a documentation of the last session, which is the prize-giving session and the last documentation:

Figure 4. Prize-giving Session and the Last Session Situation

4. Conclusion

Fixed Assets Accounting Training was held at Providentia High School Jakarta on Monday, 24 October 2024, located in class XI IPA, at 08.30-10.00 WIB. The participants were 26 students of class XI. The activity began with an introduction to the concept of fixed assets, followed by an interactive discussion where students mentioned examples of fixed assets according to their understanding. The main material presented included depreciation methods (straight line, declining balance, number of years) equipped with examples of applicable problems.

Furthermore, students worked on practice questions to evaluate their understanding. A question and answer session was used to explore the learning obstacles faced by students. This evaluation helped the PKM team adjust learning materials and methods, in line with the Problem-Based Learning (PBL) approach that directs students to understand and solve problems actively. As motivation, small prizes were given to students who were active and successfully answered the questions. This approach is designed to create an interactive learning atmosphere, increase enthusiasm, and develop students' critical and analytical thinking skills in accounting learning.

From the PKM that has been held, there are several conclusions. First, this training has successfully answered the problems faced by the Partners, namely the PKM Team equipped the students, especially class XI-IPA, with the topic of fixed asset accounting and how to calculate the depreciation expense of fixed assets, so that students are better prepared to take part in accounting competitions in the community. Secondly, the result of this PKM is that students showed a significant increase in understanding and enthusiasm for fixed asset accounting material: previously they had never heard of fixed assets and their accounting, but after the training, they were able to understand and understand enough about fixed assets and the application of depreciation methods. Third, the school was quite cooperative in providing the facilities and infrastructure needed in this PKM activity. Fourth, the training participants were enthusiastic and excited during the presentation of material and questions and answers. There are two outputs of this PKM, namely: Mandatory Outputs in the form of scientific publications in journals with ISSN, and Additional Outputs in the form of works that can be registered as Intellectual Property Rights (IPR).

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