

Dictionary Electronic Accounting Development Eclipse based

Ita Iftitah¹, Puji Handayati^{2*}

¹Graduated school of Universitas Negeri Malang

²Universitas Negeri Malang

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Abstract : This research is dealing with the development of Eclipse-based electronic dictionary on accounting conducted at SMK Muhammadiyah Malang. The purpose of this research and development is to produce products until the stage is validated by material experts and media experts. In addition, as an alternative to support students learning activities especially from the Accounting major. The background of this research is the accounting subject that is often ignored about the understanding of vocabulary and accounting terms. The method used in this research & development is using a modified Borg and Gall development model and only taken up to eight steps. The results of this study obtained a qualitative and quantitative data from media experts, material experts and users of classroom teachers, the tenth-grade students of Accounting and the eleventh grade of Accounting which held two different tests in different classes. The average total obtained from the whole data using descriptive analysis technique percentage obtained result of 90.99% which means the Eclipse-based electronic dictionary on accounting is valid/fit to use. The behavioristic link as a learning theory with the developed product that is based on the results of interviews to students who previously lack the understanding of accounting and choose passively in a discussion group, after the existence of an accounting dictionary to help students becoming active and understand the accounting terms that are being delivered in the group discussion.

1 INTRODUCTION

In the current era of globalization the world developments and information technology has developed so rapidly over the wheel life of mankind. The presence technological advances so rapidly gives the impact of progress to science in the field of the other, one of which, namely in the field of education. Wardiana (2012) to say that the development of information technology have spurred a new way of life, of life began to come to an end. Life as it is known by the e-life, this means that life has been influenced by various needs electronically. And now this is vibrant with many letters that start with the prefix e like e-commerce, e-library, e-government, e-education, e-journal, e-laboratory, e-biodiversity, e-medicine, and other longer-based electronics.

The development of such technology has spurred the emergence of a variety of facilities in the field of IT-based education, in this field cover many things, some of which are the availability of facilities and

infrastructure as well as the subject matter. It is similar with the opinion Kwary, et al (2007) which stated that the development of the digital era in the world of education is pushing for the creation of digital learning resources. In this case the researchers developing the application in the form of accounting electronic dictionary that was created using one of the makers of the software application i.e. eclipse. In this dictionary only focuses on the terms commonly used in the subject matter of accounting in Vocational middle school. As for the features developed in electronic accounting dictionary is composed of key features like menu search and results that contain the translation of accounts searched.

In addition, the use of the term account in English is also one of the constraints for students to understand the lessons of accounting, for example "Bonds" means bonds but which are not securities. The availability of the facilities in the form of accounting dictionary in the library is also considered not fully capable of facilitating the

whole student in understanding accounting terminology. The use of a conventional dictionary is considered less effective and spend a lot of time when search terms too much, so the students had to deal with thousands of other vocabulary is not sought. This is evident from the results of the interview directly by researchers with some students of class X of accounting in Vocational public high school in Malang. Researchers also describe to students that are willing to be interviewed-related research will be developed, as a result many students who need an electronic dictionary of accounting as a tool supporting learning activities.

In addition, from the experience of the researcher when conducting a practice field or the KPL subjected to a Vocational high school in Malang, i.e. in class X Administration offices. While teaching in the classroom many students feel the confusion to understanding the material being taught, because nearly all the students haven't learned accounts and term in accounting. They are not taught the basics of accounting or the introduction of the term in accounting but directly focusing on how to analyze financial statements. Whereas, in order to understand the content of the financial statements, the students should understand the terms in accounting and record-keeping financial reports flow in. Thus, the use of accounting electronic dictionary is not only useful for students in the Department of accounting, but also for students in other majors who get material about the Accounting Office Administration Department as at. From the results of the interview directly to some students X accounting and experience of researchers while performing activities of KPL, that students need learning resources in the form of digital or to accounting dictionary, also known as electronic accounting with the dictionary to help students understand terms accounting obtained from the results of the needs analysis interviews with some of the students. In addition, according to Hanadhy, et al (2012:2) solution of the above problems is to use computerized as one of the media to provide information which now widely uses the software that renders information shaped Digital. Digital objects are already is one of the trends in conveying information such as the existence of digital-based library that uses the online catalog, digital dictionaries, and digital magazine.

In drawing up a financial statement is sometimes require a game of logic that will be fatal if there are difficulties at present in the process of preparation of the financial statements. For example the confusion occurs in the stage of making such

adjustments to accounts receivable journal revenue/income that still has to be accepted, the two accounts are different but have the same meaning, namely, the income is right but has not been accepted the payout. Both accounts can be different and have their own special meanings if the lack of knowledge about accounting terms giving rise to a new perception in accordance with an understanding of each. Thus, the need for specialized accounting that will explain every term in the fields of accounting to avoid misperceptions and lack of knowledge of the term-term accounting.

2 METHOD

The model in this research and development refers to the development model and modify the Borg and Gall (in Sugiyono, 2015:409) into 8 stages, i.e : (1) the analysis of needs, (2) product development, (3) Validation expert, (4) the initial Revision, (5) trials I, (6) the final Revision, (7) trials II, (8) the end product. The technique of data collection in this study through interviews and question form. The interview was conducted to analyze the needs of the students against the media learning developed namely electronic dictionary of accounting. Types of data used in the research of the development of this form of accounting electronic dictionary data qualitative and quantitative data. Qualitative data obtained through the criticism and advice from experts, media material, as well as students who are used as consideration in conducting product revision. While quantitative data is a number obtained from the results of the research question form or instrument of media experts, material experts, teachers, and students. The data from question form validation analyzed by descriptive percentage analysis techniques. Product testing is conducted twice stage of trials to find out the effectiveness of the product.

3 RESULTS AND DISCUSSION

The development of accounting electronic dictionary-based eclipse was carried out in eight phases. The first stage is the needs analysis. At this stage, researchers conduct interviews with some students of class X of accounting in Vocational public high school in Malang. Based on the results of the interviews of researchers in the field, many students who are not yet familiar with the related

accounts that exist in accounting, because of many terms that elusive one is account insurance paid in advance or referred also to the advance insurance. Students sometimes confused when the teacher explains the insurance paid in advance, and then at other times, teachers use the term advance insurance because students are more familiar with the use of account insurance paid in advance. In addition the use of the term account in English is also one of the constraints for students to understand the lessons of accounting, for example, "Bonds" means bonds but which are not securities. From the results of the interviews, researchers concluded the need for electronic accounting dictionary to help students understand the accounting terms.

The second phase is the development of the product. Based on the results of the needs analysis has been done to some students give an overview on developing learning media, namely in the form of an electronic dictionary of accounting. As for the compilation of a Dictionary consists of three main stages:

3.1 Database

The first step in making accounting dictionary that is setting up a database to be inputted into the dictionary i.e. as many as 500 commonly used term. Once grouped, then all the accounting glossary entries in the database dictionary that are created using the programming language Java Eclipse.

3.2 Icon

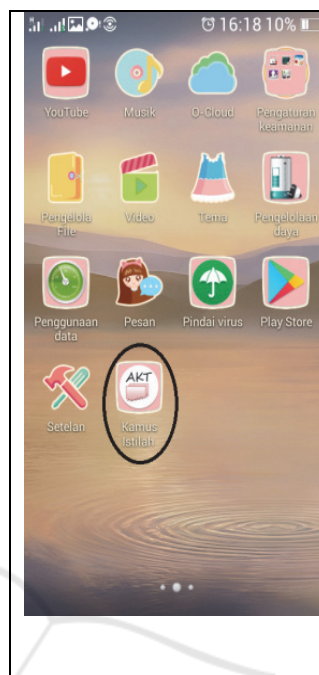


Figure 1: The icon is circled in blue is an icon of Accounting Electronic Dictionary has been created, there are two icons on the coat of arms of the first AKT typed using this type of font Segoe Script that means accounting, while the coat of arms of the municipality in Financial Accounting Reports under it symbolizes.

3.3 Design The Layout

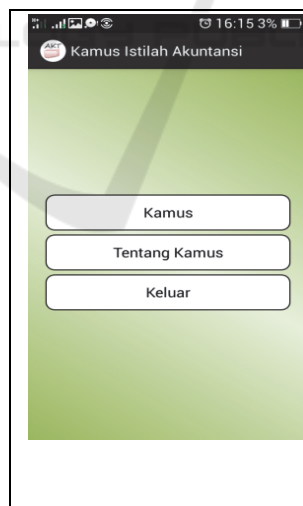
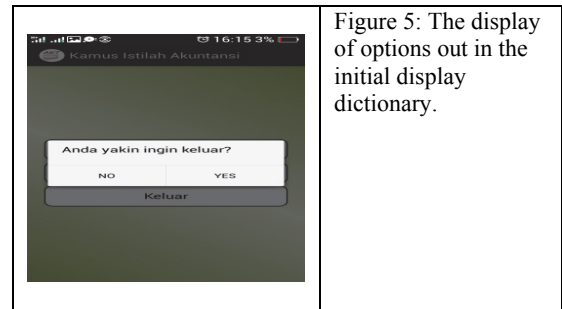
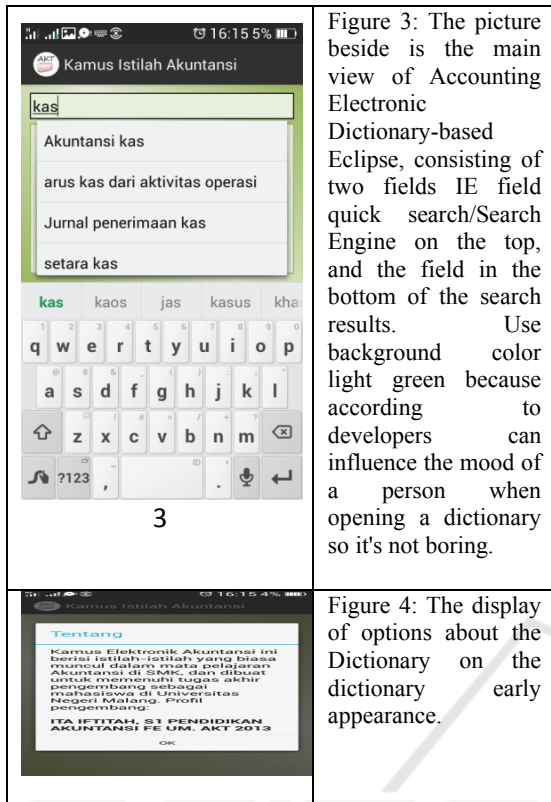


Figure 2: Get in on the display of the main dictionary will be served 3 menu options: a dictionary, a dictionary, and out Of. Dictionary Sign in to your main view dictionaries short Expository Dictionary About about the purpose of the development of the dictionary and the developer profile Out Exit options



The third stage is the validation experts. Validation involves two people of experts consisting of expert material and learning media expert. Expert material for electronic accounting dictionary is one of the Accounting teachers at SMK Muhammadiyah Malang. As for media experts is one of the educational technology Professor State University of Malang.

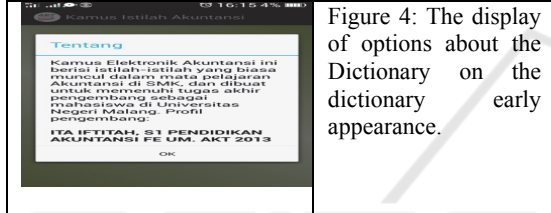


Table 3.1: Summary of the quantitative Data the results of the validation of the learning Media expert.

No	Aspects Of Assessment	Percentage	Description
Applications			
1	This accounting terms dictionary application is easy to install	100%	Valid
2	The application dictionary is not easily bogged down/stop when used	100%	Valid
3	Accounting terms dictionary application is not complicated in its use	100%	Valid
4	Every word in this dictionary gives the correct output	100%	Valid
5	Each key of the dictionary gives the correct output	100%	Valid
Total		100%	Valid
Graphics			
6	The use of the font (type, size, and color) is clear and appropriate	100%	Valid
7	Interesting layout design	75%	Quite valid
8	Setting the layout and the layout of the balanced	100%	Valid
9	The application icon is appropriate, clear and interesting	75%	Quite valid
10	Interesting background color selection	100%	Valid
Total		90%	Valid
Average		95%	Valid

Table 3.2: Summary quantitative Data Results Validation Expert Learning Material.

No	Aspects Of Assessment	Percentage	Description
The Eligibility Of The Contents			
1	The language is easy to understand and does not give rise to ambiguous	100%	Valid
2	Punctuation and symbols in dictionaries that are used properly and according	100%	Valid
3	The term in the dictionary according to the needs of students	75%	Quite valid
4	The use of the font (type, size, and color) is clear and appropriate	100%	Valid
5	Every word in this dictionary gives the correct output	75%	Quite valid
Total		90%	Valid
The Appropriateness Of The Material			
6	The definition of the term in the dictionary according to accounting subjects	100%	Valid
7	Accounting terms in the English language on the dictionary on the accounting subjects	100%	Valid
8	A description of the nature of the account of the account properties in the dictionary on the accounting subjects	100%	Valid
9	The vocabulary that is in the dictionary is complete and appropriate accounting subjects	75%	Quite valid
10	The use of other terms (synonyms) from an account in accounting is correct and in accordance	100%	Valid
Total		95%	Valid
Average		92,5%	Valid

The results of the validation study for the media in the form of an electronic dictionary of the accounting-based eclipse of media experts study gained an average of the percentage of the overall aspect of the assessment of 95%, as for the material experts acquire an average of 92.5%. It can be concluded that the media learning in the form of an electronic dictionary of accounting-based Eclipse the feasibility to support learning activities.

Table 3.3: critique and advice on Learning Media in the form of an electronic Dictionary of accounting-based Eclipse of Media expert learning and Learning Material Experts.

Experts Study Media	
Criticism and suggestions	
1	If possible, the concept of specific concepts enriched/come with explanatory information, such as a chart or graphic objects so that the definition of the term non-text more optimal
Expert Learning Material	
Criticism and suggestions	
1	Basic vocabulary in terms of accounting should be specified so useful for understanding the overall accounting
2	Give a vocabulary about the elaboration of accounting cycle (definition, elements of the vocabulary on each cycle in detail

The fourth stage is the initial revision. The initial revision was done after getting feedback from the experts. The purpose of doing this initial revision is to improve the quality of learning developed media.

Table 3.4: Revision products from criticism and suggestions by Learning Media expert

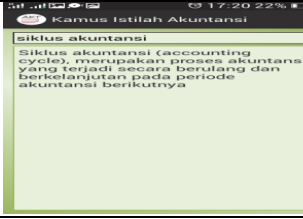
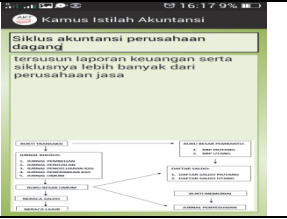
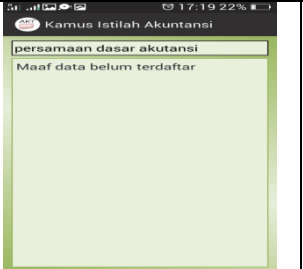
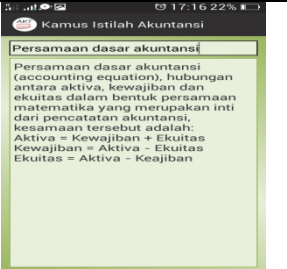


	<p>Figure 6: There has been no chart to explain the specific accounting terms</p>		<p>Figure 7: Already exists, i.e. added chart for some accounting terms such as accounting cycle trade and service company</p>
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Table 3.5: Revision products from criticism and suggestions by experts of the material

	<p>There has been no explanation of basic terms of basic accounting equation such as accounting, the accounting principles and accounting methods</p>		<p>Has been added</p>
	<p>There is some discussion about vocabulary term in accounting cycles have not been inputted in detail in the dictionary of accounting</p>		<p>Has been added</p>

The fifth stage is the first test. Field trials are limited to first find out the feasibility of accounting electronic dictionary learning media from the users i.e. 1 accounting teachers and students of class X2 semesters Accounting for as much as 18 students in

SMK Muhammadiyah Malang. The results of the field trials limited to obtain the data in the form of quantitative and qualitative data. Those result made a second revision from media experts and expert material.

Table 3.6: Summary of Quantitative Data per Statement Item (Teacher).

No	Aspects Of Assessment	Persentase	Description
Application			
1	This dictionary term accounting application is easy to install	100%	Valid
2	The term dictionary application is not easily jammed/stopped when used	100%	Valid
3	This accounting term dictionary application is not complicated in its use	100%	Valid
4	Every word entered in this dictionary gives the correct output (search)	75%	Quite Valid
5	Each of these dictionary keys provides the correct output	75%	Quite Valid
Total		90%	Valid
Graphis			
6	The use of fonts (type, size, and color) is clear and appropriate	100%	Valid
7	Attractive layout design	100%	Valid
8	Balanced layout and layout settings	100%	Valid
9	Interesting application icon	100%	Valid
Total		100%	Valid
Feasibility of Content			
10	The language used is easy to understand and not ambiguous	100%	Valid
11	Punctuation in the dictionary that is used correctly and accordingly	100%	Valid
12	The term is in the dictionary according to the needs of students	75%	Quite Valid
Total		91.7%	Valid
Kelayakan Materi			
13	Definisi istilah yang ada pada kamus ini sesuai pada mata pelajaran akuntansi	100%	Valid
14	Istilah akuntansi dalam bahasa inggris pada kamus ini sesuai pada mata pelajaran akuntansi	75%	Cukup Valid
15	Keterangan sifat-sifat akun pada kamus ini sesuai pada mata pelajaran akuntansi	75%	Cukup Valid
Total		83.3%	Valid
Average		91.2%	Valid

Table 3.7: Summary of Quantitative Data per Statement Item.

No	Aspects Of Assessment	Persentase	Description
Application Aspects			
1	This accounting term dictionary application is easy to install	91.7%	Valid
2	This term dictionary application runs quickly	90.3%	Valid
3	This accounting term dictionary application is not complicated in its use	82.0%	Valid
Total		88%	Valid
Graphic Aspects			
4	The dictionary design of this accounting term is interesting	91.7%	Valid
5	The writing/font used in this dictionary is clear and appropriate	90.3%	Valid
Total		91%	Valid
Feasibility Aspects of Content			
6	The term is in the dictionary according to the needs of students	86.1%	Valid
7	Description of the terms in this dictionary is easy to understand	81.9%	Valid
8	The term used is in accordance with the accounting field	88.9%	Valid
9	The language used is easy to understand	88.9%	Valid
10	This application helps me in learning accounting	87.5%	Valid
Total		86.7%	Valid
Average		88.6%	Valid

Table 3.8 Summary of Qualitative Data for the 1st Limited User Test (Class X Accounting).

No	Criticism and suggestions
1	This application is very helpful in learning
2	Good, it's very easy to do accounting problems (accounts)
3	This application is good, good and not complicated to use
4	This application is very good and not complicated in the use of this accounting application
5	This application is easy to understand and greatly helps the work of accounting students
6	This application is easy to understand but more effective and complete book
7	This application is very helpful in the accounting learning process
8	The application is less interesting but easy to understand and helps me to learn
9	The dictionary term accounting application is very good and easy to obtain
10	Good application, facilitate learning, know the meaning or explanation and accounting terms
11	The accounting term dictionary application is interesting and easy to understand, and not too complicated
12	In my opinion, with this dictionary application, I find it easier to understand accounting terms
13	This application is very good for accounting lessons
14	This application is very helpful in learning accounting
15	Good, and makes it easy to learn accounting well, and makes it easy to learn accounting
16	This application is very good and makes me interested and easy to get
17	This application is very good and not complicated in the use of accounting applications
18	This application is very helpful for learning and easy to understand

The results of the questionnaire above obtained a percentage of 91.2%. Thus, it can be concluded that in general according to the teacher's perspective as a user of dictionary learning media it is declared valid or feasible to be used in learning activities.

Based on the quantitative data above, as a whole, this aspect obtains an average percentage of 88.6%, which means it is valid or feasible to use according to the student's perspective as a learning media user.

The sixth stage is the final revision. After the first revision was passed, then a second revision was made from criticisms and suggestions which according to the user is still less valid in terms of vocabulary contained in the accounting dictionary, then in the second revision only added vocabulary and accounting terms that users think should be included in accounting dictionary developed. The second revision was carried out by filling out questionnaires and also assessments, criticisms, and suggestions by limited users, namely in class XI Accounting students. The result of this second revision is a revision used for the completion of the final product.

The seventh stage is the second trial. After the first trial, then the initial revision of the user is done to evaluate the learning media obtained from students' criticisms and suggestions. The second limited field trial was conducted to determine the feasibility of the electronic accounting dictionary learning media in accordance with the needs of

students. This second trial was conducted for the second semester of Accounting XI class students as many as 11 students in Muhammadiyah Vocational High School Malang. The results of this second field limited trial obtained data in the form of quantitative and qualitative data. These results are the final data from this study after 2 revisions were made, namely from experts for learning media and students.

Based on the quantitative data above, obtaining a percentage of 91.8% which means valid or feasible to use. So, in general, according to the user's perspective, students of Class XI Accounting that this learning media is interesting to be used in learning activities.

The final stage is the final product. The final product of this research and development is a learning media in the form of an electronic accounting dictionary that uses the Eclipse programming language. Based on the results of data analysis obtained from the validation of media experts, material experts and limited users, namely accounting teachers and students of Class X Accounting in the first trial and students of Class XI Accounting in the second trial at SMK Muhammadiyah Malang, it can be concluded that the learning media in the form of electronic accounting dictionaries are stated valid or feasible to be used as learning media for accounting students especially in Vocational High Schools.

Table 3.9: Summary of Quantitative Data per Statement Item

No	Assessment Items	Persentase	Description
	Application Aspects		
1	This accounting term dictionary application is easy to install	93.2%	Valid
2	This term dictionary application runs quickly	95.5%	Valid
3	This accounting term dictionary application is not complicated in its use	95.5%	Valid
	Total	94.8%	Valid
	Graphic Aspects		
4	The dictionary design of this accounting term is interesting	72.3%	Quite Valid
5	The writing/font used in this dictionary is clear and appropriate	93.2%	Valid
	Total	83%	Valid
	Feasibility Aspects of Content		
6	The term is in the dictionary according to the needs of students	95.5%	Valid
7	Description of the terms in this dictionary is easy to understand	95.5%	Valid
8	The term used is in accordance with the accounting field	95.5%	Valid
9	The language used is easy to understand	86.4%	Valid
10	This application helps me in learning accounting	95.5%	Valid
	Total	94%	Valid
	Average	91.8%	Valid

Table 3.10: Summary of Qualitative Data for the Second Limited User Test (Class XI Accounting).

No	Criticism and suggestions
1	The application is good, very helpful for the learning process for accounting
2	Very good and easy to understand
3	This application is very good and not complicated in the use of the application
4	I like this App, because it's easy to use, and looks attractive
5	This application is very helpful in the accounting learning process
6	The application is very helpful in learning accounting
7	I really like it, because this makes it easy for us to learn
8	Very good and really helped me in doing the assignments
9	The application is good, very helpful for the accounting process
10	Very interested and as needed. Hopefully, it will soon be disseminated to facilitate learning based on IT
11	The application is good, very helpful for the learning process

Table 3.11: Data Analysis.

Aspect	Subject try					Total percentage
	Media expert	Expert material	Teacher	Student X Accounting	Student XI Akuntansi	
Application	100%		90%	88%	94.8%	93.2%
Graphis	90%		100%	91%	83%	91%
Feasibility of Content		90%	91.7%	86.7%	94%	90.6%
Material Feasibility		95%	83.3%			89.15%
Average	95%	92.5%	91.2%	88.6%	91.8%	90.99%

4 CONCLUSION

The end result of the product developed is an Eclipse-based electronic accounting dictionary. Electronic accounting dictionaries have several distinct advantages with digital dictionary products that have been developed by previous researchers,

including: (1) in the accounting dictionary, in addition to accounting terms in English also displays the properties of each account / estimate for some terms in accounting, (2) in certain accounts there is a chart as in the terms of the basic accounting equation and the flow of recording financial statements that can explain the purpose of each term in general, (3) dictionaries can be obtained easily as long as the smartphone used still supports applications created

using Java Eclipse, (4) there is a quick search (search engine) like on google, (5) do not need to be connected to the internet, just send via Bluetooth or share it students can use the accounting dictionary directly.

In addition, electronic accounting dictionaries also have several weaknesses. The weaknesses are as follows: (1) the dictionary created is an offline dictionary, so the next researcher will find it difficult even unable to update the vocabulary or features contained in this accounting electronic dictionary., (2) its effectiveness has not been tested in real learning, (3) there are no available transaction examples that describe how these accounts appear in accounting records for each vocabulary or accounting terms, one of which is an account receivable account., (4) not yet fully able to facilitate students in accessing every vocabulary needed, so that there are still some accounting terms that may not have been inputted in the database of accounting dictionaries developed.

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