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The Distribution of Research Framework on Exsheetlink Module Development for Accounting Education*

Nor Sa'adah JAMALUDDIN[1], Rohaila YUSOF[2], Noor Lela AHMAD[3]

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Abstract

Purpose: The Malaysia Education Blueprint is primarily concerned with the transformation of students' minds through the curriculum offered at the school level (2013-2025). Diversity in the application of teaching and learning methods is one means of achieving the transformation of students' minds through the Secondary School Standard Curriculum. Consequently, the production of ExSheetLink's Module for Accounting Education is the primary outcome of this study, which had three objectives: the need for ExSheetLink's Module in the process of producing financial statements for Accounting Students in secondary school to the Accounting Teacher; and the design of ExSheetLink's Module that meets the entire process in the production of financial statements for Accounting Students in secondary school based on the Documents Curriculum and the Accounting Students' needs. **Research design, data and methodology:** This study outlines the research framework for module development in accordance with the Design and Development Research Method, which combines multiple research techniques (Mixed Method). **Results:** The development of ExSheetLink's Module is completed and can be used for the level of effectiveness purposes. **Conclusion:** The transformation of Accounting Students' minds is a success thanks to the ExSheetLink Module. Researchers also suggested that all Malaysian Secondary School accounting students test the ExSheetLink Module.

Keywords : Module Development Distribution, Research Framework, Accounting Education, Malaysia Education Blueprint

JEL Classification Code I29, I21, M41, O31

1. Introduction

Recognizing the importance of the development of Self-Learning Module (SLM) in a teaching curriculum as a platform to meet one of the eleven major shifts to transform the country's education system, the Malaysian Education Blueprint (PPPM) (2013-2025) details the benefits of information technology facilities (ICT) to improve the quality of learning in Malaysia so that students can be

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1 First Author or corresponding author. Senior Lecturer, Faculty of Management and Economics, Universiti Pendidikan Sultan Idris, Malaysia. Email: norsaadah@fpe.upsi.edu.my OCID: https://orcid.org/0000-0003-0849-380X

2 Second Author. Associate Professor, Faculty of Management and Economics, Universiti Pendidikan Sultan Idris, Malaysia. Email: rohaila@fpe.upsi.edu.my OCID: https://orcid.org/0000-0001-5304-8970

3 Third Author. Associate Professor, Faculty of Management and Economics, Universiti Pendidikan Sultan Idris, Malaysia. Email: noor.lela@fpe.upsi.edu.my OCID: https://orcid.org/0000-0002-5762-3546

completed with high marketability values (Carl et al., 2017; Eny et al., 2020). As a result, in order to achieve competitiveness and continuous survival, many general researches related to the development of Self-Learning Module have been produced (Mohamed Jamion et al., 2020; Ali et al., 2020; Kiong et al., 2021; Husain et al., 2021). However, the attributes of the Accounting Principle Elective Subject are a concern from the lack of development of Self-Learning Module in Accounting Principle subject in addition to the inability of accounting students to produce financial statements covering the entire process that should be fulfilled to ensure that the production of the financial statements is perfect and informative (Shafii & Jaafar, 2018). Thus, with reference to the Documents Curriculum and Assessment Standards of Accounting Principle form 4, this research contributes to creating diversity in teaching methods as well as making a leap to transform the education system at the preventive level as targeted through Malaysia Education Blueprint (2013-2025).

Mohamed Jamion et al. (2020) explained that the practice of teacher-centered teaching methods is still the main method that is often practiced for the purpose of delivering knowledge, resulting in the transformation of the student's mind to be stunted from the inconsistency of critical skills elements during the knowledge transfer session (Heong et al., 2020; Jamaluddin et al., 2021). This is because, the skills of the 21st century require students to always be actively involved in their teaching and learning sessions (Mohd Rusdin et al., 2021; Eny et al., 2020). Through active involvement during teaching and learning sessions can have a positive impact on the students including communication skills, thinking skills, problem-solving skills and other valuable skills (Carl et al., 2017; Muskita et al., 2020; Eny et al., 2020; Srikongchan et al., 2021; Mohd Rusdin et al., 2021)

The learning environment is also associated with learning strategies that are seen to contribute to the transformation of the students' minds (Jamaluddin et al., 2021). A conducive and mutually supportive environment between teachers and pupils and pupils and pupils is able to build the excitement of the students to continue the teaching and learning sessions they are going through (Huda, 2021). Therefore, teachers at the school level and lecturers at the Higher Institution level should be creative in differentiating activities in implementing teaching and learning to encourage individual intellectual development (Sumaryati et al., 2020; Aaron & Frederick, 2021).

Chen et al. (2017) through the findings of his study on the well-being issues of the learning environment explained that the tasks and assessments in the tasks have a positive impact in the learning environment. This is evidenced by the findings of the study which shows that most students feel that the tasks and assessments carried out by teachers and lecturers are very helpful in building the skills of combining the formwork, problem-solving skills and innovating skills from the students' existing knowledge to come up with a new idea that is more creative and beneficial for their environment (Chen et al., 2017; Saputri et al., 2019; Wicaksana et al., 2020).

Based on the explanation presented through the Vygotsky Social Constructivist Theory (Vygotsky, 1978; Marginson & Dang, 2017) researchers concluded that the learning environment that promotes the relationship and interaction between teachers, the relationship and interaction of a pupil and the relationship and interaction with the environment contribute to the strengthening of the knowledge that the pupil has thus driving the transformation of the pupil's mind to a higher level, which is the success of mastering higher order thinking skills in pupils (Jamaluddin et al., 2019). Thus, the student's learning environment is an important aspect that needs to be emphasized to prevent the learning process from being stunted as a result of the failure to create a transformation in the minds of the students through the provision of a positive and conducive learning environment for the purpose of learning and development of the students. Attention and focus on the aspects of the student learning environment requires the involvement of all parties to ensure that the transformation of the country's education can be achieved through the success of creating the transformation of the minds of every pupil in the school which is one of the branches of higher order thinking skills (Mohd Rusdin & Ali, 2019a; Jamaluddin et al., 2021).

Thus, the distribution on development of Self-Learning Module (SLM) which involves the integration of the teaching curriculum with ICT elements is seen as appropriate to ensure that the teaching and facilitation process is carried out in tandem with the latest technology and current developments as well as allowing the active involvement of students (Heong et al., 2020) through teaching and learning methods according to their own capabilities as well as successfully increasing the motivation of students to continue learning. Therefore, the purpose of the study is to present and detail:

a) the need for *ExSheetLink's Self-Learning Module* in the process of producing financial statements for Accounting Students in secondary school to the Accounting Teacher.
b) design of the *ExSheetLink's Self-Learning Module* which meets the entire process in the production of financial statements for Accounting Students in secondary school based on the Documents Curriculum and Assessment Standards of Accounting Principle Elective Subject.
c) effectiveness of the *ExSheetLink's Self-Learning Module* for the production of financial statements among Accounting Students in secondary school.

2. Literature Review

2.1. Malaysia Education Blueprint (2013-2025)

The Malaysian Education Blueprint (2013-2025) has identified 11 shifts that need to be made in ensuring that the transformation of the Malaysian education system as intended by all Malaysians can be achieved successfully. By placing the five system successes (access, quality, equity, unity and efficiency) as objectives that each shift needs to achieve, the researchers devised a study in the form of module development to support and realize the seventh shift (7) which is to leverage ICT to improve the quality of learning in Malaysia by maximizing the use of ICT for self-learning to expand access to high-quality teaching regardless of location or level pupil skills.

This study is to realize the desire and support the transformation of education through the 7th shift of the string from the involvement of the technological element which is the focus of the 21st century learning element by focusing on the use of Microsoft Excel in developing *ExSheetLink's Self-Learning Module* in the process of generating financial statements.

2.2. Self-Learning Module (SLM)

The self-control output developed for the purpose of achieving an objective in a short period of time can be referred to as the Self-Learning Module (Meyer, 1988). A short period of time is used from the involvement of the educational technology element in the production of the Self-Learning Module for the purpose of being used as an independent learning reference (Heong et al., 2020) to the module users. Heong et al. (2020) also explained that the best Self-Learning Module is equipped with the procedure of use and evaluation to be in line with the concept of Self-Learning Module itself which attaches importance to the elements of the students' own choice in determining their time, situation and way of learning as long as the learning objectives can be achieved. Thus, previous researchers have acknowledged that the teaching method based on Self-Learning Module is a systematic and orderly teaching material that can have a positive impact in the teaching and learning process (Mohamed Jamion et al., 2020; Ali et al., 2020; Heong et al., 2020; Kiong et al., 2021; Husain et al., 2021).

2.3. Research Model

The application of the teaching module in leading to the transformation of students' minds, Vygotsky's Social Constructivist theory is a theory that corresponds to describe the relationship between the predictor factors of the learning environment using the module and the academic achievement of students. This is because Vygotsky's Theory of Social Constructivists emphasizes existing knowledge in shaping new knowledge through previous interactions and current interactions between teachers, friends, materials, and knowledge possessed (Vygotsky, 1978; Chen et al., 2017). In addition, behaviorism learning theory is also related to shaping students' minds through behavioral elements.

The Theory of Learning Behaviorism pioneered by B. F. Skinner. Skinner (1958) explains that learning occurs when it takes the form of a change in behavior over the student. For example, rather than not knowing something or science to knowing something things or knowledge. After the Theory of Learning Behaviorism, the Theory of Learning Cognitivism was also born by Jean Piaget which gave a focus related to the human mentality. Thus, through the use of the Self-Learning Module as a teaching and learning material, the transformation of students' minds can be developed as well as providing them with high marketability values.

Based on the comprehensive literature review, learning environment through Self-Learning Module contribute to the achievement of subject's objective. Therefore, based on literature review and the research framework, to understand the relationship of *ExSheetLink's Self-Learning Module* and excellent in preparing Financial Statements the following hypotheses are set up to be tested:

HA1: There is a positive and direct significant relationship between *ExSheetLink's Self-Learning Module* and production of financial statements among accounting students in high school.

Thus, these hypotheses have been developed based on the proposed conceptual model. This model presented in Figure 1.

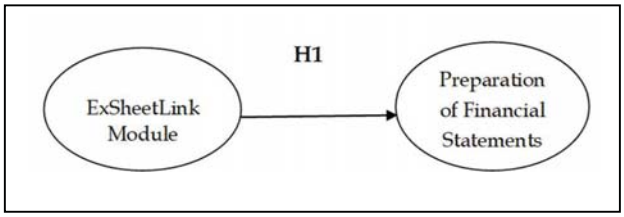

Figure 1: A Proposed Research Model

3. Research Methods

3.1. Data Collection and Sample Distribution

ExSheetLink's Self-Learning Module development research in the process of producing these financial

statements using the design and development study approach (DDR) involving combined research techniques (Mixed Method). The DDR approach backed to Richey and Klein (2007) emphasizes the elements of a systematic and orderly process in the development of models and products considering the theory underlying a study.

The basis for the development of this module is the findings of the questionnaire, content analysis, expert consensus of the Fuzzy Delphi Method as well as the findings of the module usability assessment by researchers using the Modified Nominal Group Technique. Thus, three important phases, namely the needs analysis phase, the design and development phase and the evaluation phase will be involved in this research using different study tools in each phase. The involvement of study participants which includes expert groups and user groups can provide comprehensive input considering the needs of this *ExSheetLink's Self-Learning Module* in the context of accounting teaching and learning in Malaysia.

The development of *ExSheetLink's Self-Learning Module* is produced using the ADDIE design model as a guide to ensure that the modules developed successfully achieve the overall objectives set by the researchers. Analysis (A), Design (D), Development (D), Implementation (I), and Evaluation (E) is an acronym for a five-step process in ADDIE's model. The ADDIE design is selected strings from the importance of systematic elements that contain structured and logically sequenced steps in the development of Self-Learning Module (Zulkifli et al., 2018; Budoya et al., 2019; Misesani et al., 2020).

ExSheetLink's Self-Learning Module development also comes with a usage manual for the purpose of making it easier for users to complete their teaching accurately and systematically as well as to realize the intention to enable teaching and learning sessions to be conducted independently by all students even in different localities (Ministry of Education Malaysia, 2013). Hence, researchers are excited and eager to jointly realize the transformation of the Malaysian education system by creating research to develop *ExSheetLink's Self-Learning Module* in the process of producing these financial statements.

The development of *ExSheetLink's Self-Learning Module* also contributes to the development of the curriculum for Accounting Principle Elective Subject in producing a variety of teaching materials that attach importance to the ICT element while providing students with a high market proficiency score of a series of important ICT proficiency in placing themselves in the job market in the ranking of Malaysia and the world as a whole (Malaysian Ministry of Education, 2013; Mohamed Jamion et al., 2020; Ali et al., 2020; Heong et al., 2020; Kiong et al., 2021; Husain et al., 2021).

The development of *ExSheetLink's Self-Learning Module* in the process of producing the financial statements involves three (3) main phases covering the analysis phase, the design and development phase and the usability assessment phase of the module. Development of *ExSheetLink's Self-Learning Module* for Accounting Education for each phase explained as follows:

3.1.1 Analysis Phase

The Analysis Phase in the development of this module includes the analysis made by the researcher to identify problems, set the goals of the development of the modules, determine the scope of the contents of the lessons to be modulated and the main targets for the modules produced. Considering the objectives of the first study:

The need for ExSheetLink's Self-Learning Module in the process of producing financial statements for Accounting Students in secondary school to the Accounting Teacher.

Respondents for the analysis phase of this requirement involved 25 Accounting Teachers from a total of 250 Accounting Teachers who are currently serving throughout the daily secondary school in the state of Perak until the end of 2021. The total number of respondents selected represents 10% of the total population of Accounting Teachers currently serving as required by Baker (1994). Analysis of requirements is carried out by distributing questionnaires for the purpose of identifying the needs of users towards the development of the *ExSheetLink's Self-Learning Module,* namely the Accounting Teacher. Thus, the use of the Self-Teaching Module Compatibility Questionnaire built by Shaharom (1994), modified according to the study requirements will be used as a study tool and the data obtained are statistically descriptively analyzed in the form of mean and mean deviation.

3.1.2. Design and Development Phase

In the design phase, The Fuzzy Delphi Method (FDM) technique is used in this phase to develop the *ExSheetLink's Self-Learning Module* in the process of producing financial statements based on the Curriculum and Assessment Standard Document of the Accounting Principle Elective Subject. Apart from that, the researcher explains the overall design and structure, teaching approach, learning theory, types of media and technology involved in the construction of this module. Taking objectives of the second study:

Design of the ExSheetLink's Self-Learning Module which meets the entire process in the production of financial statements for Accounting Students in secondary school based on the Documents Curriculum and Assessment Standards of Accounting Principle Elective Subject.

Sample of the study suggested by Adler and Zinglio (1996) that the number of specialists would be 10 to 15 if there was high uniformity among the experts. In this study, a total of 10 experts were selected using *the purposive sampling* method based on their respective areas of expertise. The expert panel consists of lecturer in Higher Institution. The breakdown of the 10 experts involved in this research is as per Table 1.

Table 1: List of Study Experts

Name	Place of Duty	Expertise
Expert 1	Ministry of Education Malaysia	Curriculum Development Division
Expert 2	Ministry of Education Malaysia	Curriculum Development Division
Expert 3	Department of State Education	Teaching and Learning Module Drafter of Accounting Principle Elective Subject
Expert 4	Department of State Education	Teaching and Learning Module Drafter of Accounting Principle Elective Subject
Expert 5	Secondary School	Outstanding Teacher of Accounting Principle Elective Subject
Expert 6	Secondary School	Outstanding Teacher of Accounting Principle Elective Subject
Expert 7	Secondary School	Outstanding Teacher of Accounting Principle Elective Subject
Expert 8	Education Technology Division	IT Officer
Expert 9	Higher Learning Institution (IPT)	Main reference expert in the field of Fuzzy Delphi/Produced some writing fruits related to the Fuzzy Delphi Technique.
Expert 10	Higher Learning Institution (IPT)	Main reference expert in the field of Fuzzy Delphi/Produced some writing fruits related to the Fuzzy Delphi Technique.

The development phase of *ExSheetLink's Self-Learning Module* uses a set of investigative questions that are purified as a result of the Analysis phase study, namely the needs analysis phase by referring to the Documents Curriculum and Assessment Standards of Accounting Principle Elective Subject. The Fuzzy Delphi Technique is used for the purpose of obtaining expert approval of the construction of the resulting module.

Through the development phase, the module development process is carried out with the involvement of the Word 2010 application as a medium of delivery of learning content and display products in this module. Excel 2010 software is the main software used in producing this module, in accordance with the name used for this module which is '*ExSheetLink's Self-Learning Module* in the process of generating financial statements. Using the Documents Curriculum and Assessment Standards of Accounting Principle Elective Subject of Form 4 as the main reference in ensuring that the teaching objectives are appropriate and cover the entire module developed, then researchers will focus on the development of this module as per Table 2.

Table 2: Performance Standards and Levels of Mastery for the Production of Financial Statements

Standard Achievements	
Mastery Stage	**Explanation**
1	Explain the purpose of the preparation of the Financial Statements consists of Trading Accounts and Profit and Loss Accounts and Statement of Financial Position.
2	Describes the requirements and process of closing revenue and expenses accounts correctly.
3	Close revenue and expenses accounts to be transferred to Trading Accounts and Profit and Loss Accounts.
4	Describes the reasons why real accounts are not closed at the end of the accounting period. Closing the Inventory Account by linking it to the Billing Notes System at the end of the financial period.
5	Prepare the Financial Statements in the form of a T and format the statement manually and the Capital Account considering the net take and profit or loss and share of the owner's equity by showing the final capital.
6	Produce Financial Statements in the form of 'T' and statement format by using the Information Technology and Communication (TMK) application.

3.1.3. The Usability Assessment Phase

The module usability assessment phase is the last phase in the ADDIE model which aims to test the effectiveness of the module being developed so that any problem that exists can be added well and corrected before the module is deployed for general use to users. The user's feedback on the suitability of the content to the set objectives, graphs and all the elements implemented in this module is very meaningful in ensuring that the module being developed attracts the interest of the user from various backgrounds (Zulkifli et al., 2018).

In this phase, the applicability assessment of the model is carried out using the Nominal Group Technique or Nominal Group Technique (NGT). The aim is to look at the perception and satisfaction of consumers, which is the accounting students' perception of the *ExSheetLink's Self-Learning Module* developed to answer objective of the third study:

Effectiveness of the ExSheetLink's Self-Learning Module for the production of financial statements among Accounting Students in secondary school.

The respondents for the usability assessment phase of this module are accounting students and Accounting Teachers from three (3) secondary schools offering Accounting Principle Elective Subject in the state of Perak. The selection of these three schools represents 10% of the total population of the District Education Office (PPD) in the state of Perak as required by Baker (1994). The random sampling method is easily used with the aim of ensuring that all districts in the state of Perak have an equal chance of being selected as a sample of studies.

The *ExSheetLink's Self-Learning Module* and partial interview method are used as a study instrument in this phase. Accounting Students from the three (3) selected schools will test the usability of this module in the teaching and learning sessions of Accounting Principle Elective Subject and the school's Accounting Teachers will monitor the module testing process. Next, researchers will conduct interviews to three teachers from the three (3) schools for the purpose of obtaining a response on the usability of the resulting teaching modules. For the purpose of the interview, the interview protocol is used to ensure that the findings meet the purpose of the implementation of the interview can be analyzed verbatim.

The summary of the research design by phase shown in Table 3.

Table 3: Summary of the Research Design

Research Phase	Research Instrument	Data Analysis	Expectation Outcome
First Research Objective The need for *ExSheetLink's Self-Learning Module* in the process of producing financial statements for Accounting Students in secondary school to the Accounting Teacher.			
Phase I (Needs Analysis)	Self-Instruction Module Compatibility Questionnaire	Descriptive statistics in the form of mean and standard deviation.	The formulation of the need to develop the module.
Second Research Objective Design of the *ExSheetLink's Self-Learning Module* which meets the entire process in the production of financial statements for Accounting Students in secondary school based on the Documents Curriculum and Assessment Standards of Accounting Principle Elective Subject.			
Phase II (Design and Development)	Fuzzy Delphi Method (FDM)	Threshold (d) ≤ 0.2 Expert deal percentage ≥ 75% and α-cut ≥ 0.5	Prototype design & module development based on expert agreement.
Third Research Objective Effectiveness of the *ExSheetLink's Self-Learning Module* for the production of financial statements among Accounting Students in secondary school.			
Phase III (Module Usability Assessment)	*ExSheetLink's Self-Learning Module* & Interview Protocol	Transcripts are analyzed verbatim	Formulation of the capability stage of the module

4. Discussion and Conclusion

The application of the ADDIE's model to focus on the three (3) main processes in this study proved helpful in building *ExSheetLink's Self-Learning Module* as stated in the study's objectives. This study is only focused on providing exposure in the research framework related to the development of the Self-Learning Module. Various Self-Learning Modules can be produced as teaching materials capable of supporting teaching and learning activities to attract involvement of students in their intellectual development (Balqis et al., 2020; Lestari et al., 2020).

The production and distribution of *ExSheetLink's Self-Learning Module* can provide broad benefits not only in the field of curriculum and instruction, but also impact society, the economy, and the country.

The production of the ExSheetLink's Self-Learning Module in the process of producing financial statements will provide students with self-teaching skills that are able to shape them into systematic individuals in producing financial statements, thus applying the systematic elements learned in everyday life. In addition, the production of this self-taught module also gives the Accounting Teachers an advantage in finding ideas to diversify their teaching and learning methods while encouraging students to apply information and communication technology skills in their learning.

Apart from that, the development of the *ExSheetLink's Self-Learning Module* in the process of producing these financial statements is seen as being able to add value to the economic aspect of the string of skills involved in this module providing high marketability value (Eny et al., 2020; Carl et al., 2017) to the students even though they are still in secondary school level. This is because, students' ability to produce financial statements using *ExSheetLink's Self-Learning Module* is sufficient for them to apply them in small businesses. Hence, their opportunities to work in small agencies/small businesses are very bright and contribute to the country's economic development.

Furthermore, the development of the ExSheetLink's Self-Learning Module contributes to the development of information technology applications in education in Malaysia as well as being able to upgrade the country's education sector. In addition, the publication of journal articles from this research will further enhance the development of research in Malaysia, especially in the field of education. Next, the development of the ExSheetLink's

Self-Learning Module can benefit lecturers in Institutions of Higher Learning in diversifying teaching methods to students at IPT to ensure that the educational transformation target through the Malaysian Education Blueprint of Higher Education (PT) (PT) (2015-2025) can be achieved immediately thus making the level of Malaysian educators comparable and may even be much better than the level of education at the Global's level (Carl et al., 2017).

The summaries relating to the impact provided through *ExSheetLink's Self-Learning Module* are as in Table 4.

Table 4: The Impacts of *ExSheetLink's Self-Learning Module*

Third Party Impact	Details Explanation
Community or Society	- will provide students with self-teaching skills that are able to shape them into systematic individuals in producing financial statements, thus applying the systematic elements learned in everyday life. - gives the Accounting Teachers an advantage in finding ideas to diversify their teaching and learning methods while encouraging students to apply information and communication technology skills in their learning.
Economic	- being able to add value to the economic aspect of the string of skills involved in this module providing high marketability value (Eny et al., 2020; Carl et al., 2017) - opportunities to work in small agencies/small businesses are very bright and contribute to the country's economic development.
Country	- contributes to the development of information technology applications in education in Malaysia as well as being able to upgrade the country's education sector. In addition, the publication of journal articles from this research will further enhance the development of research in Malaysia, especially in the field of education. - Give benefit to lecturers in Institutions of Higher Learning in diversifying teaching methods to students at IPT - to ensure that the educational transformation target through the Malaysian Education Blueprint of Higher Education (PT) (PT) (2015-2025) can be achieved immediately.

5. Recommendation and Research Limitation

Based on the research framework on the Development of *ExSheetLink's Self-learning Module* for Accounting Education, the researchers suggest that *ExsheetLink's Self-Learning Module* be promoted to be adopted by Accounting Teachers in Malaysia.

Apart from that, the researcher suggests to expand the usability of these module to students in Higher Institution who take accounting course as their subject in learning. It is because the usability value of this *ExSheetLink's Self-learning Module* for Accounting Education is not only suitable for secondary school level, but also suitable for use by lecturers at Higher Learning Institution (IPT) who teach Accounting Education and make the production of financial statements as an objective of their course.

Based on the module prepared, researcher also suggest to further researches to contribute more on teaching and learning progress by prepare dan develop more module based on their specialties and professional field. So, these initiatives will contribute colorful in source of learning to students and teachers.

Thus, through the recommendations, researchers were able to improve the constraints faced in this study, namely the inability to perform the usability test on the *ExSheetLink's Self-learning Module* for Accounting Education as a result of the time constraints that need to involve many students.

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