



Material Requirements for Computer-Assisted Inquiry Models Development in Investment Assessment Learning

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ABSTRAK

Di era literasi digital saat ini, lulusan dituntut untuk mampu bersaing dalam bisnis sekaligus mampu mengatasi permasalahan teknologi informasi. Salah satu cara untuk meningkatkan kompetensi mahasiswa dengan memberikan kompetensi dalam pemilihan keputusan bisnis melalui proses pembelajaran. Tujuan dari penelitian ini adalah untuk mengidentifikasi materi model pembelajaran inkuiri dengan bantuan media komputer. Jenis penelitian ini yaitu kualitatif. Metode yang digunakan dalam penelitian ini adalah yang mengacu pada Sugiono. Subjek penelitian dari penelitian ini adalah manajer perusahaan, dosen mata kuliah manajemen keuangan, ahli validasi terkait isi, tampilan, dan model pembelajaran yang dikembangkan, serta mahasiswa akuntansi yang sedang mengikuti mata kuliah manajemen keuangan. Teknik analisis data yang digunakan yaitu analisis deskriptif kualitatif. Hasil penelitian ini mengidentifikasi materi model pembelajaran inkuiri berbantuan komputer media pembelajaran penilaian investasi meliputi tingkat keuntungan dan risiko, modal kerja dan struktur modal, serta biaya modal dan struktur modal. Metode yang digunakan adalah Payback Period, Tingkat Pengembalian Rata-rata, Nilai Sekarang Bersih, dan Tingkat Pengembalian Internal. Model pembelajaran yang dapat digunakan adalah model pembelajaran inkuiri berbantuan komputer yang memuat materi sintaks model pembelajaran inkuiri, materi, kertas kerja, dan power point.

ABSTRAK

In the current era of digital literacy, graduates are required to be able to compete in business while being able to overcome information technology problems. One way to increase student competency is by providing competency in selecting business decisions through the learning process. This research aims to identify the inquiry learning model material with the help of computer media. This type of research is qualitative. The method used in this research refers to Sugiono. The research subjects of this study were company managers, lecturers of financial management courses, validation experts regarding the content, appearance, and learning models developed, and accounting students who were taking financial management courses. The data analysis technique used is descriptive qualitative analysis. The results of this study identified the material of the computer-assisted inquiry learning model of investment assessment learning media, including the level of profit and risk, working capital and capital structure, as well as the cost of capital and capital structure. The method used is Payback Period, Average Rate of Return, Net Present Value, and Internal Rate of Return. The learning model that can be used is a computer-assisted inquiry learning model that contains inquiry learning model syntax, materials, worksheets, and power points.

1. INTRODUCTION

The current digital era needs qualified university students (Baba & Rostam Affendi, 2020; Binali et al., 2021; Sundarasen et al., 2020). A graduate's adequate competence can be realized if there is a synergy from all parties related to the learning process (Daniels & Gierl, 2017; Xia et al., 2021). Improving the learning process is done by conducting learning process research related. A scientific group that concern with teaching-learning namely the economic and financial education scientific group does exist in

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the department of economics and accounting (Jazuli, 2021; Karadag, 2015). Making business decisions is one of the learning outcomes competencies that must be mastered by economics and accounting graduates. Financial Management course becomes a compulsory requirement course before the students take business decision-making. The status-quo occurs in the field is that students experience learning process difficulties, especially in investment decision assessment materials understanding. Difficulties faced by students are especially in mastering and understanding the process of choosing a business decision to choose between accepting or rejecting a business or investment decision. Investment selection is carried out with information and data from various sources, and various methods of investment selection criteria are used. Investment assessment methods can be used including the payback period method, net present value, the average rate of return, internal rate of return, accounting rate of return, cost of capital, and others. The decision-selection process concepts understanding concepts need more of student's abilities. To facilitate student understanding in the process of selecting business decisions, the use of learning models is considered necessary in facilitating a business decision-making course. A learning process can run well when assisted with clear learning steps (Pawar et al., 2020; Rahim et al., 2020). Syntax describes logically a series of teacher and learner activities called phases (Permatasari et al., 2019; Syarifah & Sumardi, 2015). The syntax describes in detail the learning flow carried out. The syntax itself elaborates the activities starting from the beginning, the main activities which are the information explanation and learning to set, lastly the closure of the learning activity. The length of learning model syntax depends on several factors, namely: children's learning readiness; the desired intensity of student participation; the level of complexity of the abilities to be built; and the difficulty or novelty of teaching materials (Anggraini & Wulandari, 2020; Hernawati, 2016; Qomariyah, 2019). For example, problem-based learning learning activities are divided into six phases, namely students are presented with a problem; students discuss the problem in a small group; students engage in an independent study on their learning issues outside the tutorial; students come back to the PBL tutorial (s) sharing information, peer teaching and working together on the problem; students present their solution to the problem, and students review what they have learned from working on the problem. In this model, students construct knowledge based on the problems presented at the beginning of learning. Therefore, students must go through long stages to achieve the goals of the model (Ariyatun & Octavianelis, 2020; Hendriana et al., 2018; Parta, 2017; Qomariyah, 2019).

Inquiry Training Model aims to train students to be actively involved in causal reasoning, fluent in asking questions, building concepts and hypotheses, and testing them (Nasution, 2015; Rosidin et al., 2019). The Inquiry Training model syntax has several phases, such as in the first phase the teacher explains the inquiry procedure, namely: (1) the purpose and method of asking questions that can be answered yes or no (yes-no question); and (2) presenting the problem (puzzling situation) (Hariadi et al., 2019; Hidayat & Harahap, 2015). In the verification phase, the learner collects information about the events observed or experienced. Whereas in the experimental phase, students are introduced to a new situation or object and they have to check whether the event occurred differently. In these two phases, students are expected to ask questions. The question can arise from the observed phenomena or the experiments carried out. The teacher's role in this phase is; (1) controlling students so that they stay focused on the subject matter; and (2) expanding student inquiry by expanding the type of information obtained. In the verification process, students may ask questions about objects, properties, conditions, and accompanying events (Dewi et al., 2017; Ertikanto et al., 2017; Youllanda et al., 2020). The purpose of the question is to determine the basic properties of the object (Parta, 2017).

The social system also needs to be considered in the learning process, "The social system describes the roles of students and teachers, the patterns of interaction used, and the expected targets. The role of the teacher will vary greatly from one model to another depending on the characteristics of the model (Matsun et al., 2016; Siagian & Simatupang, 2017). In large classes with heterogeneous student abilities, social systems are very important because students' ability is varied in building understanding. In addition, student-centered learning also requires a good social system (Lestari & Premono, 2019; Nurmayani et al., 2018; Wahyuni et al., 2017). This is due to the difference in "help" that each child needs (Parta, 2017). The learning model is seen as a center that connects three main components of learning, namely; learning materials, teachers, and students (Fitriyati & Munzil, 2017; Ruqoyyah et al., 2020). Organizing and learning a learning material will always be based on the learning model. Submission of learning materials also uses learning steps which are of the model's syntax implementation. The learning model is also used as a reference to regulate the pattern and direction of interaction between the learning components. Therefore, the learning model plays a central role in learning (Fuady et al., 2017; Parta, 2017). The learning process also needs technology. Science and technology development has led to information and communication development or called computer (information and communication technology) (Huseyin et al., 2015; Mahmoudi et al., 2012; Rachmadtullah, 2018). Education is beneficial to

human's life aspect, where human feels science and technology benefits (Alam & Asimiran, 2021; Ekawati et al., 2015; Liao et al., 2021). In the education world, computers are used to facilitate the achieving educational goals process. One of them is used as a learning aid. Furtherly, learning in the education world can be carried out on a computer-based basis. "Computer-based learning is learning management utilizing computer devices (both hardware and software). The utilization of computers is often identic with the use of the internet and other media such as television, radio, multimedia player, handphone, and varied computer devices. Learning media in computer-based learning is in form of internet, learning software, e-mail, CD-ROM, information source, network, database spreadsheet, publishing desktop, video conference, digital scanned, word processing, digital camera, and online information source (Adimphrana, 2008; Hardianto, 2015; Mata & Fiqih, 2015; Uwes A. Chaeruman, 2008).

It was further stated that "computer-based learning will certainly focus a lot on the use of computer-based learning media (Gazali & Pransisca, 2021; Rachmadtullah, 2018). The use of computer-based learning media is not as easy as pie. Paying attention to several techniques is needed thus the media can be used optimally. Additionally, this makes the media use does not deviate from the learning objectives. Judging from the readiness of its procurement, media are grouped into two types, namely ready-made media because they are trading commodities on the broad market in a ready-to-use state (media by utilization) and design media that need to be designed and prepared specifically for specific learning purposes and objectives (Kuswanto et al., 2017; Wardani & Setyadi, 2020). In conclusion, the computer-based learning media use will not deviate from the learning objectives, and in its implementation, several principles must be paid attention to (Adimphrana, 2008; Hardianto, 2015; Mata & Fiqih, 2015; Uwes A. Chaeruman, 2008). In line with these principles, the present research investigated material requirements as well as developing an inquiry learning model design helped by computer media in the context of financial management courses in improving students' ability in making business decisions. Based on the research problems mentioned, the present research aimed at analyzing the material and design an inquiry learning model with computer media in investment assessment learning.

2. METHOD

The present study used a development model by Sugiono which is including 3 steps such as (1) potential and problems; (2) data collection; and (3) production design. (Aslikah, 2017; Sugiyono, 2013; Wibowo & Pratiwi, 2018). The first stage of potential problems was the identification of problems, identification of learning outcomes, and observations of various business ventures. The second stage of data collection was conducted by reviewing the input of students, educators, and business managers. The third stage was the product design of the management organization, developing learning objectives, setting learning strategies, and determining learning media. This research was conducted in the Department of Economics and Accounting, especially the Economic Education Study Program, Faculty of Economics, Ganesha University of Education. The research subjects of the present research were company managers, lecturers in financial management courses, validation experts related to the content, display, and learning models developed, as well as accounting students who were having financial management courses. The data analysis technique used in this study was to follow the qualitative data analysis procedure by giving meaning to the stages carried out along with the results that occur as a result of the stages carried out. The present study also used quantitative data which was the success of the application carried out by descriptive disclosure through comparison of the average value, standard deviation, and percentage that occurs. The results of the data analysis would then be described with the support of quantitative data and qualitative arguments.

3. RESULT AND DISCUSSION

Results

Before constructing the learning design, the researcher analyzed the material requirement of the model to be developed. The analysis was the learning material needs analysis of various company owners and managers which can be used as the basis for determining the material in financial management learning. First, Company Owner and Manager Analysis Results. Based on the questions summary results which were given to 10 companies owners and managers located on Gianyar, Badung, Jembrana, and Buleleng Regencies related to the needed information before the decision on a business or investment, can be observed as follows: Firstly, Mr x, Uma Ceking Restaurant owner. This restaurant has food and beverages services. He argues that before deciding on managing a business or investing in one, it is necessary to identify the investment type, diversification, profit and risk level, period, and character identification. Additionally, the method used was as follows: 1) Payback Period (PP), (2) Average Rate Of

Return (ARR), (3) Net Present Value (NPV), (4) Internal Rate Of Return (IRR). Figures 1 and 2 are the respondents' answers illustration. Secondly, Mrs. Y from CV Karya Mandiri, who has chartering activities for all kinds of works construction, argues that before deciding on a business or investment, it is necessary to know the resources to be used, the type of investment chosen, how long it takes to invest, and the method used. Average Rate of Return (ARR) to assess an investment based on the net amount (EAT) calculation on the company's income statement. Thirdly, Mr. B owner, a construction services business. He adds that before deciding on a business or investment, it is necessary to use the initial source funds, the type of investment and how long it takes, and the methods used: 1) Payback Period (PP), (2) Average Rate Of Return (ARR), (3) Net Present Value (NPV), (4) Internal Rate Of Return (IRR), which is based on the total net profit on profit and loss calculation. The same opinion was also conveyed by Mr. Y who works at CV Bhina by Utama. Fourthly, Mr. X who owns CV. Daksa Construction, a construction service business. He has an opinion that before deciding on an investment, information regarding material prices, capital, and loan interest rates are required. Fifthly, Mrs. C, who owns Alas Harum Bali, an agro-tourism business for civet coffee, activity swing, and restaurant. She has an opinion that before deciding on an investment, it is necessary to have available market information and strategic places and the method used was Payback Period. Last but not the least, Mr. D, who owns Nau Villa, a lodging business activity. He argues that before deciding on an investment, information is needed regarding the number of tourist visits and business competition. The method used was Payback Period.

From the results of the distributing questionnaires regarding the information needed before deciding on a business or investment, it is necessary to identify the investment type, diversification, profit and risk level, period, resources used, the time it was decided to invest, material prices, initial funds needed sources used, loan capital and interest rates, available market and strategic place. The methods used which are mostly suggested/implemented are 1) Payback Period (PP), (2) Average Rate Of Return (ARR), (3) Net Present Value (NPV), and (4) Internal Rate Of Return (IRR). From the owners and managers' information of the companies investigated, additionally observed the financial management syllabus, the material provided in the lectures so far is under the opinions of the managers and owners of the company. For instance, information on the type of investment is in the syllabus of the investment assessment sub-material, the level of profit and risk is already in the risk forms sub-material, the source of funds is already in the working capital and capital structure sub-chapter, loan interest rates are in the capital cost and capital structure sub-section. The method used is 1) Payback Period (PP), (2) Average Rate Of Return (ARR), (3) Net Present Value (NPV), and (4) Internal Rate Of Return (IRR) already in the investment appraisal material. Before making business decisions, it is necessary to understand information related to business decision-making, information will be obtained if students can ask questions. The learning model that can be used to improve students' questioning skills is the inquiry learning model. Anticipating the current pandemic conditions, learning with a computer or digital media is highly expected, therefore, the media used in financial management learning, especially in this investment decision-making sub-material, is a digital module that uses the syntax of inquiry learning models, PPT, materials in Microsoft Words and so paperwork in Microsoft Excel. The outline of the investment assessment material contains the syntax of the inquiry learning model, materials, working papers, and power points. The syntax of the learning model can be seen in [Table 1](#).

Table 1. The Syntax of the Inquiry Learning Model in the Investment Appraisal Material

Learning Phase	Activity Educator
Pre-Lesson	Prepare and motivate learning to follow the learning process Deliver learning achievements and material coverage
Phase I:	Educators explain the inquiry procedure, namely: (1) the purpose and method of asking questions in form of yes-no questions, (2) presenting the problem (puzzling situation)
Phase II: Statement Identification problem	Focusing students on: a. The main objective of Investment Appraisal; and b. Expanding student inquiry
Phase III:Statement Identification problem	Educators ask students to collect data/information about forms of Fixed Asset investment, investment value using the Payback period method, Net Present Value, Internal Rate of return, and Accounting Rate Of Return, Decisions to accept or reject investment read literature
Phase IV: Data Processing	a. Educators ask students to organize data and formulate explanations b. Asking students to express their explanations
Phase V: Verification	Educators ask students to do a careful examination to prove whether or not the established hypothesis is correct with alternative findings, related to the

Learning Phase	Activity Educator
Phase VI: Generalization	results of data processing by verifying to other students. Ask students to analyze the pattern of inquiry that is done

Discussion

The inquiry learning model used in this study is in line with the previous studies which concludes that the inquiry learning model can be used to improve student learning outcomes and competencies (Ratnasari & Maasrukhin, 2019; Siagian & Simatupang, 2017). The results of several studies described below. Inquiry learning is one solution to overcome various kinds of our educational problems now and in the future (Annisa et al., 2016; Siagian & Simatupang, 2017). Inquiry learning is a strategy that emphasizes the process of thinking systematically, logically, critically, analytically, and meaningfully, to seek and find their answers to a problem faced, both in the learning process in the classroom and in the environment where they are located (Akhmalia et al., 2018; Ratnasari & Maasrukhin, 2019; Siagian & Simatupang, 2017).. This means that students are encouraged and directed to develop their abilities and potential so that it is hoped that they will feel confident in solving a problem they face (Lahadisi, 2014). The research results conclude that the use of the inquiry model can improve student learning outcomes and activities (Setiasih & Panjaitan, 2016). The results of Hidayati Suhada's research concluded that "Students who learn to use the Inquiry model get higher science process skills than students who learn to use the Problem-solving model (Suhada, 2017). The results concluded that "there is an effect of using guided inquiry and modified free inquiry learning models if they are associated with multi-representation abilities (Qurotul et al., 2015). The average value of the experimental class physics learning outcomes test using the guided inquiry learning model with the experimental method is higher than the control class using the conventional learning model (Wahyuni et al., 2017). The inquiry learning model can improve student activity and learning outcomes" (Nurmayani et al., 2018; Ulansari et al., 2018).

And the results of Sugeng Nugroho's research that "guided inquiry learning through virtual and real laboratories has a significant effect on cognitive learning achievement". The design of the inquiry learning media in the investment assessment sub-assisted helped by a computer media in financial management learning developed contains the formulation of learning outcomes, learning materials The outline of the content of the investment assessment material contains the syntax of the inquiry learning model, materials, working papers, PPT, RTM, Assessment Rubric. Learning Outcomes consist of Attitude Learning Outcomes, Knowledge Learning Outcomes, and General Skills Learning Outcomes. The achievements of attitude learning consist of (1) Upholding human values in carrying out tasks based on religion, morals, and ethics; and (2) demonstrating an attitude of responsibility for work in the field of expertise independently. Learning Outcomes Knowledge includes: first, mastering the basic concepts of corporate financial management including investment appraisal using various financial instruments, sources, and uses of company funds as well as evaluating various capital costs in investing. Second Mastering the theoretical concepts of management accounting measurements, including control structures, budgeting, evaluation, inventory, managerial policy, and management decision making. General Skills learning outcomes include having the ability to prepare financial reports for various entities, both concerning: operational budgets, capital budgets, and other financial budgets. The learning objectives formulation considers three learning domains which include the cognitive domain; emphasizes the level of thinking; and the affective domain which refers to attitudes and feelings and the psychomotor domain which emphasizes actions and skills (Fitriyati & Munzil, 2017; Wahyuni et al., 2017). In addition, learning objectives also consider the stratification of low-level thinking, medium-level thinking, and higher-order thinking.

4. CONCLUSION

Based on the results of the research above, a conclusion can be made that the Inquiry Learning Model Development Material helped by a computer media in investment appraisal learning includes the level of profit and risk, working capital and capital structure, capital costs and capital structure. Whereas, the methods used were payback period, average rate of return, net present value, and internal rate of return (IRR). The learning model that can be used is a computer-assisted inquiry learning model that has a syntax design for inquiry learning models, materials, working papers, and power points. From the analysis of material requirements and design of the model, it will be evaluated and tested in the learning process.

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