

Application of Model-Based Learning Science, Technology, Engineering and Mathematics (STEM) in Order to Improve the Quality of Learning of Accounting at SMAN (Case Studies in Three SMA Negeri Jakarta Timur)

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ABSTRACT

This research entitled “Application of Model-Based Learning (STEM) Science, Technology, Engineering and Mathematics Improve the Quality of Learning of Accounting in SMA Negeri Jakarta Timur (Case Studies in Three SMA Negeri Jakarta Timur)”. Education is an attempt to help students actively develop the potential, abilities and talents through the learning process. The purpose of education is to improve the quality of the resources who have the skills, mastery of technology, as well as having extensive knowledge and professional expertise. The process of teaching and learning is a process which gives the ability of cognitive, affective and psychomotor. The results of the one obtained through the process of innovative learning by using Learning Model STEM. Learning Model for STEM is a model learning approach that refers to the four components of science, namely science, technology, engineering and mathematic. The choice of model STEM is made as a solution to problems experienced by students with an understanding of science that is relatively low and the mastery of technology that has not been according to expectations. The purpose of this research is to understand in depth how the application of the model STEM in improving the quality of learning of accounting students at SMAN 54, 61, and 71 in East Jakarta. The research approach is qualitative using the case study method. The collection of data obtained through interview, observation, and documentation based on the focus of the research, namely: the

planning stages of the learning Model STEM, a strategy Model of the STEM, the implementation of the learning Model STEM, the evaluation of the Model STEM, excess and deficiencies of the Model STEM. As for the subject of the research are teachers, students, and the leadership of the school. Once the data is collected, then analyzed using Analysis of a Case Study which was adapted according to the stages of Richard, namely: collect data, Think the relation, categorize the data, reflect on the data, organize the data, connect the emerging issues and themes, collect more data. Test the validity of the data is done by using the test of credibility, transferability, dependabilitas, konfirmabilitas. The results of the research obtained data that the Model STEM implemented in three high schools in east Jakarta managed to improve the learning outcomes of accounting students. The success of the Model of learning with STEM supported with the innovation of the teacher in using the integrate Model of the STEM with the learning strategies of the other into several stages that are innovative and creative. In addition, the factor of integration of learning components combined with a Model of the STEM is very influential to the success of student learning outcomes. The recommendations of the research are the need for the integration of the Model STEM with the strategies in accordance with learning objectives.

Keywords: Model of STEM, Learning, Accounting

INTRODUCTION

Improving the quality of education in Indonesia can be done through the implementation of education reform. The changes that occur in traditional learning towards to learning that further enhance the power of critical thinking called education reform. The purpose of the reform of education is basically to improve the quality of graduates. According To Government Regulation No. 19 Year 2005 on National Education Standards Article 35, paragraph 4 states that the competency standards aim to prepare learners to become members of the society who is noble, has the knowledge, skills, self-reliance, and develop, and apply science, technology, and art that is beneficial for humanity. Today, one approach that has been developed to improve the quality of education is a learning approach based on Science, Technology, Engineering and Mathematic (STEM). STEM formed in 1990 by the National Science Foundation and is the combination of scientists, technology, engineers, and mathematicians in order to create a force that is influential. Some literature sources, such as the one the National Research Council (2015) reveal that at this time it is feared that the students are not ready for the workforce in the future unless the education system can better focus on STEM education from an early age. In the practice of education in the field, one of the most important challenges centered on the introduction of issues related to STEM and to develop the competence to handle the problems that will be faced by students as citizens of the country. STEM considered to have been a lot of uncover innovation-successful innovation in the field of pedagogic. The main problems in the learning of science which until now has not got the breakdown of thoroughly is the belief in the students that this lesson is difficult to understand and be understood. This is in line with the results of the research conducted by Holbrook (2005) suggests that learning science is not relevant in view of the students and not liked by

students. The main factor all the fact that it looks like is because of the absence of linkage learning in science. The emphasis of the understanding of basic concepts and understanding of basic science is not associated with the things pertaining to everyday life, whereas the Yager and Lutz revealed the more that the science relevant to the process and products used daily in society. One of the obstacles of learning science other is because of the lack of ability to read and interpret the readings.

LITERATURE REVIEW

Concept learning is a process of adaptation or adjustment of the behavior that takes place progressively. Learning is also understood as a behavior, at a time when people learn, then the response becomes better. Conversely, if he does not learn then the response is decreased. So learning is a change in the likelihood or chances of occurrence of the response. B.F Skinner (Sagala, 2010:14). A child learns in earnest thus on the time of deuteronomy these students can answer the questions correctly. The results of learning which is better that he get good grades, then the child will learn harder. The value can be an "Operant Conditioning" or strengthening (reinforcement).

The concept of Quality according to Juran in Makawimbang (2011:42), quality as "the place to wear" and asserts that the basis mission the quality of a school is to "develop programs and services that meet the needs of users such as students and the community". Meanwhile, according to ISO 2000 in Suhana (2014:77), quality is the totality of characteristics of a product (goods and services) that support its ability to satisfy specified or defined.

The concept of Education is one of the main indicators of development and quality of human resources, so that the quality of human resources is highly dependent of the quality of education. Education is a field that is very important and strategic in national development, because it is one determinant of the progress

of a nation. Education is the most effective means to improve the quality of life and degree of the welfare of the community, as well as that can deliver the nation achieve prosperity. Tilaar (2002: 435) state that “the essence of education is to humanize humans, a process that sees the human as a whole in existence”. Looking closely at the statement of Tilaar picture can be obtained that in the process of education, there is a process of teaching and learning, so education is clearly going process of the formation of a more human human. The process of educating and being educated is the act which is fundamental (fundamental), because in it occurred the process and actions that change and determine the way of human life.

The concept of Management according to Hersey and Blanchard stated that management is a process of how the achievement of the objectives of the organization through leadership. According to Stoner, management is the process of planning, organizing, directing and monitoring the efforts of the members of the organization and the use of other organizational resources to achieve organizational goals that have been set.

The concept of Management Education, the Term management has been popular in the life of the organization. In the meaning of a simple “management” is defined as the management. A process of arranging or managing the organization in achieving the desired goal understood by management.

The concept of Learning Accounting, In psychology, cognitive includes all form of introduction which includes every mental behavior of the human-related issues of understanding, understanding, attention, think, consider, information processing, problem solving, deliberate, imagine, estimate, thought, belief and sebagainya.(Mimi Suharti, 2011).

MATERIAL AND METHODS

Approach used in this research is a qualitative approach. This approach is a

study in depth by using the technique of direct data collection from people in their natural environment (Sukmadinata, 2008:61). Qualitative research is done with regard to the focus and sub-focus of the research, namely to know in depth how the application of the Model STEM against the learning outcomes of accounting while the subfokus research on the planning, implementation, evaluation, strategy, issues, solutions and learning outcomes using the Model of the STEM. Because of the limitations of the test in measuring the issue, then qualitative research is able to answer these problems. Research methods using case study. A case study is research that is directed to collect data, make meaning, and gain an understanding of the case. The case is absolutely not representative of the population and is not intended to obtain the conclusions of the population. Conclusion the case study applies only to such cases. Every case is unique or has its own characteristics which are different with other cases. This research is a case study, namely to uncover the implementation of the learning model STEM on the subjects of accounting at SMAN Jakarta with collecting data and take the meaning so as to obtain an understanding of the application of learning models of STEM subjects accounting. A benchmark assessment of the success of the learning process refers to the curriculum 2013. Learning outcomes assessed by looking at the standard of competence that should be possessed by high SCHOOL students for the subjects of accounting. Learning strategies adapted to the learning model STEM, learning infrastructure accounting model of STEM and document the exam with the model of the STEM.

RESULTS AND DISCUSSION

PLANNING MODEL STEM IN THE LEARNING OF ECONOMICS IN SMAN 54, SMAN 61, AND SMAN 71 JAKARTA

Planning is very important to be implemented before implemented learning. Planning is the process of the preparation of

the subject matter, the use of learning media, the use of approaches and methods of learning and assessment in a time allocation that will be implemented at a certain period to achieve the objectives that have been determined (Majid:2008:17). Planning is derived from the word plan it means taking decisions about what should be done to attain the goal (Sanjaya: 2008:23). The rationality of the importance of planning learning as the results of research Isman et al., (2003) concluded that learning in the classroom that do not use the RPP shows that the children talk to each other and not concentrating to the teacher, while the class using the LESSON plan shows the students are very focus and participate to the teachers.

Planning learning accounting through model STEM at SMAN 54, SMAN 61, and SMAN 71 based on the 2013 Curriculum, which systematically made secar hierarchical from the general to the special, namely by making an annual program, program, semester, Syllabus, up on LESSON plans daily that contains all the components of learning(WG54:Pr:, WG61:Pr:1, WG71:Pr:1); (WK54:Pr:1, WK61:Pr:1, WK71:Pr:1) (DrPP 1-6 danOplm 1-6).Lesson plan created by. Plan the implementation of learning is the learning plan that is developed in detail from a subject matter or a specific theme which refers to the syllabus. LESSON plans include: (1) school data, subjects, and class/semester; (2) subject matter; (3) time allocation; (4) learning objectives, KD, and indicators of achievement of the competency; (5)learning materials; teaching methods; (6) media, tools and learning resources; (6) steps of learning activities; and (7) assessment of

The manufacture of RPP in the three schools is based on about Standard Process where the mentioned Learning Implementation Plan (RPP) is the plan of the learning activities face-to-face for one meeting or more. LESSON plans developed from the syllabus to direct the learning activities of learners in an effort to achieve

Basic Competence. According to the Regulations the government of education and culture No. 81A Tahun 2013 attachment IV of the Implementation of the Curriculum Guidelines General Learning, the first step in learning according to the standards process is the learning plan that is realized with the drafting of the Implementation Plan of Learning. The LESSON plan is a learning plan which is developed in detail from a subject matter or a specific theme refers to the syllabus.

There are several reasons for the importance of the development of learning models, namely: a) the model of effective learning is very helpful in the learning process so that learning objectives are more easily achieved, b) learning models can provide useful information for the learners in the learning process, c) variations of the learning model can provide the passion of students learning, avoid boredom, and will have implications on the interest and motivation of learners in the learning process, d) develop a variety of models of learning is very urgent because of the difference in characteristics, personality, habits-habits of how to learn to the learners, e) the ability of lecturers /teachers in using the learning model of any variety, and they are not glued just on the specific model, and f) demands for faculty/professional teachers have the motivation and the spirit of renewal in the line of duty/profession. As for the function of the learning model are: a) Guidelines for the designers of learning and teachers in planning learning activities. b) Guidelines for lecturer/ teacher in carrying out the learning so that lecturers/teachers can determine the steps and everything that needed in the learning process. c) Facilitate the lecturers / teachers in educating the students in order to achieve the purpose of the enactment. d) Help learners acquire information, ideas, skills, values, way of thinking, and learn how to learn to achieve the learning objectives (Asyafah:2019:23).

Basic considerations using the model of the STEM, that is adapted to the needs and abilities of students, objectives,

materials, and learning time. (WG54:Pr.6, WG61:Pr.6, WG71:Pr.6), (WK541:Pr.6, WK61:Pr.6, WK71:Pr.6) (DRpp 1-6: 54,61,71, Oplm 1-6:54,61,71). All components in the teaching system are interconnected and affect each other to achieve the teaching goals. Basically, the teaching process can be held smoothly, efficiently, and effectively thanks to the absence of positive interaction and productive between the various components contained in the system of teaching the (Dolong:2016:290).

Plans made of course have its own difficulties. The difficulty in applying the model of the STEM when the integrated Plan of learning accounting, which make the design stages of the model of STEM and integrate the stages of the model STEM with the stages that already exist in the curriculum. (WG54:Pr.7, WG61:Pr.7, WG71:Pr.7), (WK541:Pr.7, WK61:Pr.7, WK71:Pr.7,) (DRpp 1-6: 54,61,71, Oplm 1-6:54,61,71). To make good planning and can organize the teaching process ideal, every teacher must know the elements of planning good teaching, among other things: identification student needs, objectives to be achieved, strategies and scenarios relepan used to achieve the objectives, evaluation criteria (Abdul Majid, 2007:94). As for the solution to implement the model of STEM in the planning of learning by doing material analysis, the needs of the students. (WG54:Pr.8, WG61:Pr.8, WG71:Pr.8), (WK541:Pr.8, WK61:Pr.8, WK71:Pr.8) (DRpp 1-6: 54,61,71, Oplm 1-6:54,61,71). According to Abas Asyafah (2019:25) states that in general, things that can be considered in choose to determine the model of learning is conformity between the “learning model” with the following things: objective characteristics (competencies) are defined, indicators of Competency Achievement/ GPA developed, the learning objectives spesifikdalam develop the potential and have the ability of lecturers/ teachers in using the learning model selected, the characteristics and modalities of learners, learning environment and means

of supporting other study, the suitability of the approach, method, strategies, and techniques that are used, the demands of certain dimensions, for example, to reveal something of the concept, and the type of assessment of learning outcomes that will be used.

STRATEGY MODEL OF THE STEM IN THE LEARNING OF ECONOMICS IN SMAN 54, SMAN 61, AND SMAN 71 JAKARTA

The learning Model has several elements, namely: has a name, is the philosophical foundation of the implementation of learning, bases on the theory of learning and theory of learning, has the purpose or specific intent, has a pattern in the step of teaching and learning activities (syntax) that are clear, contain components, such as teachers, learners, interaction of teachers and learners, and the tools to convey the model (Suprihatiningrum: 2014:144).

Learning Model according to Noer Khosim (20017:5) has a meaning that is more typical than a strategy, method, or procedures of learning. The term learning model has 4 a special characteristic that is not possessed by the strategy or method of learning: rational theoretical logical compiled by educators, the learning objectives to be achieved, the steps of teaching are required so that the learning model can be implemented optimally, a learning environment that is necessary so that learning objectives can be achieved a variety of the developer states that the main characteristic of the learning model.

Strategy construct and integrate models of STEAM by analyzing the materials and learning needs, then the STEM is lowered into operational measures at SMAN 54, SMAN 61, and SMAN 71, the last integrated into the stages of learning in LESSON plans and implementation (WG54:St:1, WG61:St:1, WG71:St:1) (WK54:St:1, WK61:St:1, WK71:St:1) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71).In accordance with the Competency Standards

and Content Standards, then the principle of learning curriculum 2013 is a) of the learners are given the know towards the learners finding out; b) from the teacher as the only source of learning to be-based learning a variety of learning resources; c) from the approach of the textual towards the process as a strengthening of the use of the scientific approach; d) from learning content-based towards competency-based learning; e) learning partial towards integrated learning; f) of learning that emphasizes the single answer to the learning with the answer that the truth is multi-dimensional; g) of the verbal learning towards skills applicable; h) increased and the balance between the skills of physical (hard skills) and mental skills (soft skills); i) learning that prioritizes the cultivation and empowerment of learners as a lifelong learner; j) learning to apply the values denganmemberi exemplary (ing ngarso sung tulodo), build willpower (ing madyomangun karso), and develop the creativity of learners in the learning process (tut wuri handayani); k) the learning that takes place at home, at school, and in the community; l) learning apply the principle that anyone who is a teacher, who is a student, and where course is a class; m) Utilization of information and communication technology to improve the efficiency and effectiveness of learning; and n) recognition of individual differences and cultural backgrounds of learners.

Specific strategies in the lower model of the STEM, i.e. analyze the needs and suitability between the stages of the model STEM with the learning components, namely goals, media, materials, and evaluation of learning (WG54:St:2, WG61:St:2, WG71:St:2) (WK54:St:2, WK61:St:2, WK71:St:2) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). A learning process can run effectively if all the components that affect each other support, namely: siswakurikulum, teachers, methods, facilities and infrastructure, environment (Hafni Ladjid:2005:113).

In general, the factors supporting the strategy of the model STEM in learning

Accounting, namely the physical facilities, such as classrooms, learning media, lcd/projector, computer and other, as well as non-physical facilities, such as the support of the school in the form of seminars, training and other (WG54:St:3, WG61:St:3, WG71:St:3) (WK54:St:3, WK61:St:3, WK71:St:3) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71).

Inhibiting factors applying the model of the STEM, which required more time in designing the model STEM better on lesson plans and implementation. (WG54:St:4, WG61:St:4, WG71:St:4) (WK54:St:4, WK61:St:4, WK71:St:4) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). The selection of the learning model is strongly influenced by the nature of the material to be taught, objectives to be achieved in the learning process and ability levels of learners (Trianto:2010:54).

THE IMPLEMENTATION OF THE MODEL STEM IN THE LEARNING OF ECONOMICS IN SMAN 54, SMAN 61, AND SMAN 71 JAKARTA

The learning process is the overall activities are designed to educate learners. On the education unit, the learning process is organized in an interactive, inspiring, fun, challenging, motivating participants learners to actively participate according to their talents, interests and development of the physical as well as psychological learners (Smith Mlyasana:2012:155). The implementation of the learning of accounting by using the model STEM with integrated learning components, namely the destination, the media, other methods, teaching materials, evaluation (WG54:Pl:1, WG61:Pl:1, WG71:Pl:1) (WK54:Pl:1, WK61:Pl:1, WK71:Pl:1) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). General stages of the implementation of the model STEM in the learning of Accounting is constructed into three stages, namely the initial stage, the core, and a cover (WG54:Pl:2, WG61:Pl:2, WG71:Pl:2) (WK54:Pl:2, WK61:Pl:2, WK71:Pl:2) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71).

Implementation of learning is the implementation of the RPP, activities include the introduction, the core and the cover. The third step of the principal is based on the standard process issued by the Ministry of Education and Culture.1486 Regulations Minister of Education and Culture No. 65 in 2013. About The Standards Process. Linkage of objectives with the model of the STEM on the aspect of the relevance of each stage which aims to facilitate achieving the goal of learning accounting (WG54:Pl:3, WG61:Pl:3, WG71:Pl:3) (WK54:Pl:3, WK61:Pl:3, WK71:Pl:3) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71).

In conjunction with the implementation of the learning, the formulation of goals is a fundamental aspect in directing the learning process better (Muhammad Yaumi:2014:80). Thus it is necessary the existence of a good consideration. Consider in depth the meaning, to formulate the general purpose of learning should consider the characteristics of the field of study, student characteristics, and field conditions (Hamzah B Uno:2008:140). The goal in learning that have been formulated should be adjusted to the time availability, the infrastructure and the readiness of the learners. In connection with it, then all the activities of teachers and learners should be directed at achieving the objectives that have been expected (Abudin Nata:2009: 314).

Formulate the learning objectives we should take a formulation of the goals and determine the behavior of the students that the specific reference destination of the. Behavior that is specific should be observed by teacher demonstrated by students, for example, oral reading, essay writing, to mengoperasionalisasikan the purpose of a behavior should be defined where teachers can observe and determine student progress with respect to these objectives and to be the key in order to determine the learning objectives is the need of the students, the

eyes ajar, and the teacher itself. (Oemar Hamalik:2013:76-77).

The linkage between the model STEM with the strategy of learning on the Kurtilas is as a support and complement each other by using a Scientific Approach (WG54:Pl:4, WG61:Pl:4, WG71:Pl:4) (WK54:Pl:4, WK61:Pl:4, WK71:Pl:4) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). Permendikbud No. 14 2019 about the Preparation of the RPP Curriculum 2013Pasal 36 Paragraph (2) states that the curriculum at all levels and types of education developed with the principle of diversification in accordance with educational unit, the potential of the area, danpeserta learners. Thus the teacher is free to develop a teaching strategy or LESSON plan to be better, such as integrating Scientific Approach with the Model of the STEM.

Model STEM support of the material presented so that students are interested in learning(WG54:Pl:6, WG61:Pl:6, WG71:Pl:6) (WK54:Pl:6, WK61:Pl:6, WK71:Pl:6) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). Teaching material is any material that is used to help the teacher / instructor in carrying out teaching and learning activities in class. A teaching material most do not include among other things: instructions to learn (instructions for students/teachers), the competencies to be achieved, supporting information, exercises, instructions of work, can be in the form of a worksheet (LK).

Learning Model is a series of teaching-learning process from beginning to end, which involves how the activity of teachers and students, in the design of the specific learning that is assisted instructional materials, as well as how the interaction between teachers and students teaching materials that occurs. Generally, a learning model consists of several stages of the learning process that should be done. The learning Model is very closely related to the learning styles of learners (learning style) and the teaching style of the teacher (teaching style), both of which are

abbreviated to Prayer (Style of Learning and Teaching) (Grandson of muhammad abbas:2014:37).

Assessment is carried out to measure the extent to which the level of success of result learn student by using model STEM(WG54:Pl:7, WG61:Pl:7, WG71:Pl:7) (WK54:Pl:7, WK61:Pl:7, WK71:Pl:7) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). In addition, issues of implementation of the learning model STEM is inefficiency time needs to be improved. (WG54:Pl:8, WG61:Pl:8, WG71:Pl:8) (WK54:Pl:8, WK61:Pl:8, WK71:Pl:8) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). Factors underlying causes of problems in students rooted in internal factors and external factors. Internal factors can include aspects such intellectual intelligence, talent, interest, motivation, conditions and the physical state. External factors include the social conditions of the students such as the environment, economics of the family, the school and the surrounding community. Solution to solve the problems of the application of the model STEM with how to reduce the number of questions or the time of exercise (WG54:Pl:9, WG61:Pl:9, WG71:Pl:9) (WK54:Pl:9, WK61:Pl:9, WK71:Pl:9) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). Teacher creativity is needed in solving the problem.

EVALUATION OF THE MODEL STEM IN THE LEARNING OF ECONOMICS IN SMAN 54, SMAN 61, AND SMAN 71 JAKARTA

Good evaluation planning and implementation is done by focusing on the subject of assessment, i.e. students are given the test and nontest, teachers do self-reflection, assessment of peers, and monitoring and evaluation by the leadership of the agency (WG54:Evi:1, WG61:Evi:1, WG71:Evi:1) (WK54:evi:1, WK61:Evi:1, WK71:Evi:1) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71).

Evaluation on a Test given on several meetings with diagnose difficulties

of students on the indicators and questions do the special pressure on the keslutan about which is then followed up in the form of quizzes, exercises, and HOMEWORK. (WG54:Evi:2, WG61:Evi:2, WG71:Evi:2) (WK54:evi:2, WK61:Evi:2, WK71:Evi:2) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). Evaluation of nontes that has not yet been reached by observing each individual development to be followed up in the form of verbal and nonverbal. (WG54:Evi:3, WG61:Evi:3, WG71:Evi:3) (WK54:evi:3, WK61:Evi:3, WK71:Evi:3) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). Reflection diriyang teachers do, used to do evaluate yourself against the success of learning. (WG54:Evi:4, WG61:Evi:4, WG71:Evi:4) (WK54:evi:4, WK61:Evi:4, WK71:Evi:4) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). Any other assessment is done by carrying out monitoring and evaluation of the leadership and assessment peers at least once every semester. (WG54:Evi:5, WG61:Evi:5, WG71:Evi:5) (WK54:evi:5, WK61:Evi:5, WK71:Evi:5) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). Evaluation activities conducted by teachers and head of school SMAN 54,61, and 71 is an important part in maintaining the quality of learning.

BARRIERS TO THE IMPLEMENTATION OF THE MODEL STEM IN THE LEARNING OF ECONOMICS IN SMAN 54, SMAN 61, AND SMAN 71 JAKARTA

There are obstacles in implementing the model of STEM in general (WG54:human Rights:1, WG61:human Rights:1, WG71:human Rights:1) (WK54:human Rights:1, WK61:human Rights:1, WK71:human rights:1) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). Obstacles to meet the facilitation needs of the students because huge numbers and stages of learning also requires a considerable time. (WG54:human Rights:2, WG61:human Rights:2, WG71:human Rights:2) (WK54:human Rights:2, WK61:human Rights:2, WK71:human rights:2) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71)To carry out

activities of diagnosis of the learning difficulties must be taken several stages of activity. These stages include: 1) Identify students that are expected to experience learning difficulties; 2) Localize the trouble of learning; 3) Determining the factors causing learning difficulties; 4) Estimate the alternative relief; 5) Establish the possibility of how to overcome them; and 6) Follow-up. Warkitri, et al, Assessment of the Learning Achievement, (Jakarta: Open University, 1998), h. 8.

TROUBLESHOOTING SOLUTIONS ON IMPLEMENTASIMODEL STEM DI SMAN 54, SMAN 61, AND SMAN 71 JAKARTA

The solution by focusing on the learning guidelines and customizable. (WG54:Susi:1, WG61:Susi:1, WG71:Susi:1) (WK54:Susi:1, WK61:Susi:1, WK71:Susi:1) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). The Model of learning on curriculum 2013 (the Grandson of the Uly,:2014:37-38) have the criteria as follows :learning material is based on the fact or phenomenon that can be dijelaskandengan logic or reasoning, not to the extent of approximately, imaginary, legend, or fairy tale, the teacher's explanations, the student response, and educational interaction of teachers-students freed from the prejudices that necessarily, subjective thinking, or reasoning that deviate from the groove of logical thinking, encourage and inspire students to think critically, analytically, and precisely to identify, understand, solve problems, and apply learning materials, encourage and inspire the students be able to think of a hypothetical in view of the differences, similarities, and links to each other of the learning material. Encourage and inspire the students be able to understand, apply, and develop patterns of thinking that are rational and objective in responding to the learning materials, based on concepts, theories, and empirical facts that can be accounted for, the learning objectives formulated in simple

and clear, yet interesting system presentation.

LEARNING OUTCOMES OF THE ECONOMIC MODEL THROUGH THE STEM AT SMAN 54, SMAN 61, AND SMAN 71 JAKARTA

Assessment of learning outcomes conducted by teachers to measure student learning outcomes (WG54:Hil:1, WG61:Hil:1, WG71:Hil:1) (WK54:Hil:1, WK61:Hil:1, WK71:Hil:1) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). Aspects of assessment of learning accounting, namely the aspects of cognitive, affective, and psychomotor (WG54:Hil:2, WG61:Hil:2, WG71:Hil:2) (WK54:Hil:2, WK61:Hil:2, WK71:Hil:2) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). The process of learning in curriculum 2013 touching the three spheres, yaitusikap, knowledge, and skills.8 So as to produce learners who are productive, creative, innovative, and effective through the strengthening of attitudes, skills, and knowledge that is integrated (the Grandson of muhammad abbas: 2014:38). Bloom, he suggests there are three domains or the target goal of domain affective domain cognitive domain psychomotor. Affective domains have five levels, namely receiving, responding, valuing, organizing values, and characterizing values. Domainafektif has six levels, namely to know, to understand, apply, analyze, synthesize and evaluate. Domain psikomotorik has six levels, namely reflex movements, basic movement, skills of observing, skills of body, movement skills and communication continuous (Nan Saodih:2008:104).

Forms of assessment adapted to the purpose of education, namely the assessment of the UTS, UAS, Daily, or weekly. (WG54:Hil:3, WG61:Hil:3, WG71:Hil:3) (WK54:Hil:3, WK61:Hil:3, WK71:Hil:3) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71) the Effectiveness of learning is to teach according to the principles, procedures and design in order to achieve the purpose of the change behavior (Syafarudin Nurdin:2005:88).

Forms of assessment tailored to the type of aspect ratings. Test (PG, stuffing, Esay) is used to measure the cognitive. On the contrary notes in the form of the observation sheet is used to measure the affective and psychomotor aspects (WG54:Hil:4, WG61:Hil:4, WG71:Hil:4) (WK54:Hil:4, WK61:Hil:4, WK71:Hil:4) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). The development of values in school is done by adding about however is the quality of the same. (WG54:Hil:5, WG61:Hil:5, WG71:Hil:5) (WK54:Hil:5, WK61:Hil:5, WK71:Hil:5) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71).

The results of the model of learning with STEM very good (WG54:Hil:6, WG61:Hil:6, WG71:Hil:6) (WK54:Hil:6, WK61:Hil:6, WK71:Hil:6) (Drpp-16: 54,61,71, Oplm 1-6:54,61,71). This approach is able to create a learning system in a cohesive and active learning because the four aspects needed simultaneously to solve the problem.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

1. Conclusion General

Model STEM supported with the innovation of the teacher in using the integrate Model of the STEM with the strategy of learning to the several stages of the innovative and creative. In addition, the factor of integration of learning components combined with a Model of the STEM is very influential to the success of student learning outcomes. The recommendations of the research are the need for the integration of the Model STEM with the strategies in accordance with learning objectives.

2. Conclusion Special

a) Planning learning using the Model of the STEM based on the operational procedures that exist on the 2013 Curriculum and lesson plans were developed by teachers in the form of stages of learning that is operational with integrating Scientific Approach and

other models with the Model of the STEM.

- b) Strategy use of Models STEM either at the stage of planning and implementation is made systematically from standard procedures of the applicable Curriculum was then developed into a learning strategy integrated with the integrating Model of the STEM in accordance with the needs and conditions of the class involving components of learning.
- c) The implementation of learning accounting with Model STEM dilaksanakan by considering the three stages, namely the initial phase, the core phase, and the stage cover. On the stage is the occurrence of ties of mutual support on each component of learning. These stages integrate learning components (objectives, media, model, penialian) with the Model of STEM in learning accounting.
- d) Evaluation of the learning done by the teacher based on the guidelines of the 2013 Curriculum, which uses the form of test and nontest for students, self-reflection by the teacher, assessment of peers by the teacher, and monitoring and evaluation by the leadership of the agency to evaluate teacher learning by using the Model STEM.
- e) The problem in implementing the Model of STEM in learning accounting, namely the difficulties of teachers in implementing the stages of learning with time has been determined.
- f) Solutions in solving problems in implementing the Model of STEM in learning accounting, namely with emphasis on the stages of a more effective and efficient leads to the tujuanberdasarkan Curriculum standards 2013.
- g) Student learning outcomes by using the Model STEM data obtained very well where the students were able to pass the KKM that has been determined and the students are very motivated and enthusiastic to follow the learning by

using the Model of the STEM that is integrated with pendekatan Scientific.

Research Implications

The results of the research about the application of learning models accounting-based STEM to improve the quality of the high school students in East Jakarta has the implications as follows :

1. Planning learning by using Models of STEM integrated dengan Pendekatan Scientific with brings together the stages of its essence.
2. Strategy learning accounting School can be applied to the development of model STEM which is characterized by the aspects of the saint, technology, engineering, and matametik with examples of the translation of logically and mathematically.
3. The implementation of learning accounting with the model of the STEM can be implemented in learning with emphasis on the linkage of the learning components that support each other.
4. The problem of learning by applying a Model of the STEM can be solved by uniting the stages of learning that are integrated that have a common purpose.
5. The form of evaluation of learning need to be developed in the form of indicators which is not only based on Curriculum 2013 to be able to know how big the success rate of students on the aspects that are more complex.

RECOMMENDATIONS

Based on the results of research on the application of learning models accounting-based STEM to improve the quality of high school students in East Jakarta produces the following recommendations:

1. The Head of School

Based on the implications of the results of learning models Accounting-based STEM as discussed in Chapter IV, it is recommended for learning Accounting using learning materials based Accounting

STEM as the basic curriculum for the teaching of Accounting in high School.

2. Teacher

Teachers should use strategy-based learning of STEM which is modified with technical problem solving (problem solving), and discussion focused. For teachers are expected to have competencies in line with the concept of the STEM that meets the 4 (four) criteria, Science, Technology, Engineering and Mathematics.

a) Science

The concept of (recording), grouping (classifying), reporting (summaryzing), and interpretation (interpreting).

b) Technology

Collaborate with ICT to create a design or accounting application.

c) Engineering

The merger between the accounting with the development of the capital market and the development of the business.

d) Mathematics

Produce students who are productive, creative, innovative, effective through the strengthening of attitudes, skills and knowledge are integrated of accounting.

3. Students

Learning Model STEM be the best option which will produce output in the graduation survey with the development of global business, so the patterns of thinking and basic logic in understanding the material accounting based on the concept of STEM. This concept is also applicable in other subjects.

4. Parents

Expected to the guardians/parents in order to support process-based learning STEM because it has benefits for future students in the future.

5. Other Researchers

The results of this study is a scientific study that is qualitative that is still in need of improvement by providing indicators on the other aspects so that the

continuation of this research is expected to be a reference for similar research.

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