

Scientific Approach in the Development of Social Science Lesson Plan

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Abstract—The lesson plan is a tool and at the same time becomes the main requirement for a teacher in teaching. The teaching and learning process in the 2013 curriculum requires teachers to use a scientific approach, so all components and learning tools must be evaluated and developed according to the needs of students. This study aims to describe objectively the principles, components, and scientific approaches in developing the lesson plan. The method used is development research, where the researcher will present the developed product, data presentation and trial, which includes expert validation, user validation and student validation. The results of the validation of the education management expert stated that there was a suitability of the lesson plan with the established learning theory and competencies, which had a high level of validity so that it could be used without revision. The results of validation by the user (teacher) state that there is a validity of the lesson plan for Social Sciences in the classroom, so that it can be used even though it needs a small revision. From the results of validation by audience / students in the form of subjective and objective competency test questions, it shows that the level of accuracy of the lesson plan is quite valid.

Keywords—scientific approach, social science, lesson plan

I. INTRODUCTION

A progressive education system is an important aspect for improving the quality of education in developed countries. In recent years, a lot of research has increasingly focused on making effective professional development tools, this requires teachers to be proactive because they have an important role in learning. Meanwhile, change and development of the educational curriculum in vocational schools is a phenomenon that cannot be avoided. This has happened in various countries including Finland which has a good education system and Indonesia is one that admit it. The curriculum becomes the guidance for the implementation of learning, so in its implementation it is necessary to follow changes in the preparation of the lesson plan is the main tool and requirement for a teacher to teach.

Studies related to lesson planning have been carried out referring to a condition that requires innovation, especially in science education that has found the importance of teacher

experience in the development of lesson plan in supporting professional curriculum implementation [1]. This curriculum is part of a strategy to improve educational attainment [2], So curriculum development through creative lesson plan needs to be done, because so far the lesson plan has been used are stagnant and underdeveloped, so they are less successful in increasing student motivation, especially in the millennial era that require teachers to have more knowledge, innovation, and creative to present the material [3]. Lesson plan based on scientific approach by looking at aspects of teacher activity, students and learning achievement have significantly contributed to learning outcomes geometry [4]. This is interesting to research if it is implemented in Social Studies learning, especially since the results of previous research, Social Studies materials need to be updated and need to be re-examined. For the development of an effective lesson plan, mentoring activities to improve teacher competence in preparing lesson plan that are oriented towards high-level thinking skills in social science subjects are important, even though the mentoring process demands a different model according to the characteristics of the problems faced [5]. Dimensions such as principles and components in the development of lesson plan need to be investigated further.

The development of the lesson plan is very dynamic and changes rapidly, in fact it is very limited in its development. This is a challenge in the development of Social Studies and is still an important issue to research, given the effects of social interactions which have a very large impact on changing students' lives. The themes studied in Social Studies are the phenomena that occur in society in the past, present, trends in the future, as well as subjects that study social issues with elements of study in the context of events, facts, and correct generalizations. Actually experienced by students in everyday life. Social studies subjects contain Geography, History, Sociology, and Economics. Through the Social Studies Subject, students are expected to become citizens of Indonesia who are democratic, responsible, and citizens of the world who love peace and intelligence, are able to interact with the natural, social, cultural and economic environment and are aware in social life. The introduction of Results-Based Education (OBE) and Curriculum 2005 (C2005) as curriculum

reforms in South Africa, shows that teachers who are involved in lesson study have increased and have made a major contribution to quality development and will be of benefit to teachers who have just entered the profession [6]. This study focuses on mathematics and science teachers, so it is possible to use lesson study in other subjects such as social studies that need to be studied more deeply.

II. METHODS

This study aims to develop and test the effectiveness of products in the development of Social Studies lesson plan oriented to a scientific approach, based on the development method of Borg and Gall. This study aims to analyse the principles of developing lesson plan, components and development formats, and the results of developing lesson plan through interviews, literature study and observation. The subject of the trial were X class student of the Social Studies (History) subject at SMKN 4 Malang on the theme of analysing the entry process and development of colonialism in Europe (Portuguese, Spanish, Dutch, English) to Indonesia, using discovery models and problem based learning. The type of data taken is descriptive data in the form of validation sheets that meet the criteria and show the suitability of the lesson plan with the preparation theory whether the lesson plan is feasible or valid, based on input from the validator.

The procedure for this research was carried out using the following steps: 1) identification of problems in the draft learning in class through literature review, classroom observation and document studies related to existing lesson plan and used in the field by teachers; 2) curriculum analysis by analysing content standards including competency standards, basic competencies, indicators and learning objectives; 3) compile a draft lesson plan based on the theoretical basis and process standards and a positive approach; 4) expert validation to determine the suitability of the lesson plan draft with the theoretical basis of lesson plan preparation; and 5) revising the draft lesson plan, to produce a better lesson plan.

III. RESULTS AND DISCUSSION

Research on the ability of teachers in developing lesson plan Social Studies (History) based on a scientific approach was carried out at SMK Negeri 4 Malang which has implemented the 2013 curriculum. The following is the result of data processing on the ability of teachers to bring up scientific aspects both in lesson plan and in learning implementation.

A. Principles of Lesson Plan Development

The ability of teachers to develop lesson plan for a scientific approach can be identified by analyzing the emergence of scientific aspects in the learning planning being developed. The scientific aspects that can be raised are: observing, asking, trying, reasoning and communicating. Teachers in developing lesson plan also use the principles in

accordance with Permendikbud Number 22 of 2016, especially those related to: 1) individual differences in students; 2) active participation of students; 3) centered on students to encourage enthusiasm for learning; 4) providing feedback and follow-up, so that appropriate and effective lesson plan development is obtained. lesson plan is considered effective based on spiritual assessment, affective assessment, cognitive learning outcomes, psychomotor assessment, assessment of critical thinking skills, teacher activities, and student activities [7], so professional development is important as an effort to create effective learning [1].

B. Components and Format of Lesson Plan Development

The minimum components in the learning device plan include school identity and subjects, core competencies, basic competencies, indicators of learning objectives, learning materials, learning methods. Lesson plan components include preliminary activities, core activities and closing activities, learning resources, assessment of learning outcomes, assessment instruments, media tools and learning resources. Using The Universal Design for Learning (UDL) during the lesson planning process, teachers can identify clear objectives according to academic standards and develop flexible methods, assessments and materials that address the needs and preferences of diverse student characteristics.

Teachers can identify goals that are in line with academic standards and provide various ways to achieve goals, integrating learning strategies that serve as a support to help students have standard-based mastery of lessons [8]. The preparation of lesson plan based on visual learning technology can help improve higher order thinking skills in students compared to traditional learning techniques [9]. Teachers agree and like the use of lesson plan (79.6%), by having a lesson plan a teacher is able to efficiently manage time, energy and resources, besides that it also provides various ways for teachers to vary activities, methods and materials so that the learning process is not monotonous and redundant, as well as helping teachers have high self-confidence and get rid of problems [10], then the use of web-based applications will help the preparation of lesson plan which require continuous updating [11].

C. Results of Lesson Plan Validation by Experts

The test of the suitability of the lesson plan with the theory obtained data that the development of lesson plan has quite valid criteria, namely the following elements: 1) completeness of the lesson plan components include the identity of subjects, SK, KD, learning objectives, teaching materials, time allocation, methods, learning activities, indicators achievement of competencies, assessment of learning outcomes, and learning resources; 2) clarity, clarity and systematization of the learning material organization; 3) up-to-date learning material; 4) suitability of the coverage of the material substance with the learning objectives; 5) inclusion of initial, core and final activities in learning experiences that develop learning methods, media and resources and involve students; 6) the

suitability of the steps (learning experiences) with the learning objectives and the allocation of time for each step; 7) learning steps enable the growth of various life skills; 8) the use of learning resources in the student environment; 9) the learning process appears to apply the principle of internalization of values that develops understanding skills, student actions are directed to pay attention to values; 10) utilization of learning models that have the potential to activate and make students creative; 11) includes assessment of the process and learning outcomes using instruments for value-oriented authentic assessment; 12) inclusion of learning guides for students; 13) suitability of the assessment instrument with the learning objectives to be achieved; and 14) inclusion of reference sources in the lesson plan.

While expert validation on other indicators has very valid criteria, namely in the aspects: 1) inclusion of activities to prepare students to learn, motivate, perceptions, information on learning objectives and material information; 2) clarity and logic of the formulation of learning objectives and encouragement for higher order thinking skills; 3) completeness of the formulation of learning objectives containing the concepts A = Audience, B = Behavior, C = Condition, and D = Degree; 4) there is an integration of character education; 5) suitability of learning resources with the level of student development, material and students' contextual environment; 6) suitability of material organizing with the development of students; 7) suitability of learning activities with the level of development of students; 8) variations in learning activities in the steps are more centered on student learning experiences; 9) the learning process seems to apply the 5 scientific approach (observing, asking, reasoning, trying and communicating; 10) there is a learning model used in the lesson plan; 11) the use of various learning media; and 12) attach assessment instruments for evaluation and authentic assessment purposes. From the results of the validation by 2 experts, the criteria for the validity of the lesson plan obtained a combined total score of 184 while the average score of 92 was declared very valid and could be used without revision.

D. Results of Lesson Plan Validation by Users

Lesson plan validation instruments by users (teachers) to measure the level of applicability of lesson plan when used in classroom learning practices. The results of user validation show that the criteria are quite valid in the following aspects: 1) the suitability of the time provided with the learning process; 2) the level of achievement of learning objectives; 3) the suitability of the learning steps listed in the lesson plan with their implementation in the classroom; 4) the ability of lesson plan to bring up various life skills (personal, social, academic and vocational) in the learning process; 5) learning media can provide an interesting understanding and impression for students; 6) variety of media; 7) the ability of the lesson plan in bringing out the elements of "understand, ngroso, nglakoni" characters in the learning process; 8) the ability of lesson plan to create an atmosphere of pleasure; 9) assessment instruments for evaluation and assessment of learning outcomes can be

used in the assessment of learning processes and outcomes in learning practices.

Very valid criteria by user validation are found in the following indicators: 1) the effectiveness of the use of learning resources listed in the lesson plan; 2) the ability of lesson plan can develop positive habits of students in the learning process; 3) the ability of lesson plan to make students active; 4) the ability of lesson plan to make students creative in the learning process; 5) the ability of the lesson plan makes students able to construct their own knowledge; 6) the ability of lesson plan to create contextual learning; 7) the ability of lesson plan in creating meaningful learning for the lives of students; 8) the suitability of the media with the learning objectives and the involvement of students in the use of media in the learning process so that it runs effectively and efficiently; and 9) the ability of lesson plan to build understanding of values and involve students in building understanding of values (understanding), treatment of values (action) and reflecting in the learning process. From the results of the validation by the user the score criteria obtained are 79, it is stated that it is quite valid or can be used but needs to be slightly revised.

E. Results of Lesson Plan Validation by Audience / Students

The results of validation by audience were given online in the form of subjective and objective competency test questions in two different classes. It can be seen that the range of values obtained in the first class is the lowest score of 70 and the highest score is 100 with an average value of 81 while in the second class the lowest score is 70 The highest value is 100 with an average value of 82. This shows that with an average value of 81.5 the level of validity has a valid and very valid range, while the combined validation has a score of 84.1 which means that it has sufficiently valid criteria, however, it still needs minor revision. This supports the results of the research that the preparation of lesson plan through a scientific approach significantly influences student learning outcomes with a very good category, teachers become more innovative, their abilities increase, teacher preparation in teaching is good, and the activity most often used is identifying problems with a scientific approach is reasoning [4].

The effectiveness of the inquiry-based lesson plan instrument can be achieved and the data show that there is an increase in better student cognitive learning outcomes, excellent critical thinking skills, good behavior, good social skills, and good student activities [12]. Teaching materials with a scientific approach must be able to motivate students not to be lazy, not bored, and more eager to learn mathematics. Therefore, the development of interactive teaching materials based on scientific and interactive approaches that can be used by students has answered this challenge, by utilizing an Android smartphone and can be used portably [13]. However, the teaching method in solving problems in the educational curriculum in the field of science has not shown the right method [14]. Meanwhile, the Science Lesson Plan Analysis Instrument ((SLPAI) can be used to evaluate teacher development programs [15]. Pre-service teachers have great

dominance in advancing teaching knowledge and practice with a coherent approach, so that they will apply the learning tools properly to create an effective science teacher [16], however, the development of lesson plan still needs to put more emphasis on the step of determining indicators, objectives learning, presenting learning models, and choosing methods appropriately [17].

IV. CONCLUSIONS

Preparation of lesson plan that have been revised and validated by experts, users and students in the historical Social Studies (History) subject of class X with the scientific approach has led to the component of developing lesson plan in detail and in accordance with the guidelines. The scientific approach which includes observing, asking, reasoning, collecting data / information, analysing information data and communicating it becomes more focused, and the lesson plan developed are feasible. The results of the expert test assessed that there was a suitability of the lesson plan with the theory and provided input for improving the lesson plan, it seemed that it had been carried out according to the expert's assessment. User validation is determined by matching the results of empirical validation from the expert with the validity criteria that are determined to produce good and valid criteria, while the results of the validation of students have an average value of 82 meaning that the lesson plan is valid.

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