

Development of Environmental-Based Contextual Learning Models to Increase Student Creativity at the High School Level

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ABSTRACT

The purpose of this study was to develop an environment-based contextual learning model in biology lessons. This is expected to improve learning outcomes in biology lessons at the high school level. If in the previous learning methods, learning was centered on the teacher, then this environment-based contextual learning can help students make decisions about content, environment, and learning opportunities for students outside the classroom, and can help define the learning context. This study uses a descriptive research method with a research and development (R&D) approach. Where this research develops an environment-based learning model in biology lessons, with the aim of improving student learning outcomes.

Keywords: Contextual learning, biology lessons, and learning outcomes

1. INTRODUCTION

Biology is a branch of science that studies everything about life. The success of the biology learning process in Indonesia will have direct implications for science learning. In the process of learning biology, teachers must provide sufficient learning experiences for students, because one of the characteristics of learning biology is learning by doing. In addition, the implementation of innovative learning models has a very high urgency and can help teachers relate the material being taught to students' real-world situations and encourage students to make connections between their knowledge and its application in everyday life [1].

Based on the facts of the implementation of the teaching and learning process in the field, it shows that in teaching biology concepts and theories through teacher-centered activities, students are not actively involved in activities and do not provide opportunities to develop students' thinking processes. Learning with this method the teacher has not empowered all his potentials so that most students have not been able to achieve the individual competencies needed to take part in further learning. Thus, students assume that biology is a rote lesson that is difficult to understand so that biology is not liked. This is because most students have not learned to the level of understanding, they are only able to learn by memorizing facts, concepts, theories, and ideas at the memory level, but have not been able to use them effectively in solving everyday problems.

The main problem in the learning process in schools today is the low absorption of students. This can be seen in the learning outcomes of students who are always very concerned. This achievement is of course the result of conventional learning conditions. Based on the results of observations to schools, the authors get some information on the existence of learning difficulties experienced by students, causing a lack of learning motivation, and resulting in low student learning outcomes. This observation the author did by interviewing biology teachers in senior high school.

Teachers as people who are very instrumental in the world of education can play a role in dealing with problems in education. The teacher is one of the critical success factors in the learning process, to achieve this success, teacher creativity is required in the use of learning models. The environment-based contextual learning model is one of the models in learning that can increase students' learning motivation.

[2] in his writing that specifically examines the principles of learning [3] has summarized that meaningful learning is a process of linking new information to relevant concepts contained in a person's cognitive structure. So, with environmental-based learning outside the classroom, it is hoped that students will be able to relate lessons to reality, link the relationships between the lessons they receive and be able relate them to the understanding they already had. Environmentally oriented learning can also change the way of learning that has been monotonous, rigid, and

boring which requires students to always memorize and only prioritize quantitative values without prioritizing qualitative values or processes.

This study aims to describe the level of need for an environment-based contextual learning model to improve biology learning outcomes at the high school level. In addition to this, to find out how the prototype of the environment-based contextual learning model, then can describe the level of validity and practicality of the environment-based contextual learning model. This study also aims to measure the effectiveness of the environment-based contextual learning model.

In biology learning in high school with the perception of students who feel bored with the lecture method, or classical, then to answer the above problems this research will develop an environment-based contextual learning model in biology learning to improve student learning outcomes in high school.

2. METHOD

The type of research carried out is Research and Development (R&D) method research used to produce certain products and test the effectiveness of these products [4]. Research activities are integrated during the product development process, therefore in this research it is necessary to combine several types of research methods. Research and development products in the field of education can be in the form of models, media, equipment, books, modules, evaluation tools and learning tools: curriculum, school policies, and others [5]. The implementation of research on the development of an environment-based contextual learning model was carried out in October 2021. This research was carried out at a senior high school in Majene Regency. The product developed in this study is an environment-based contextual learning model following the ADDIE (Analysis, Design, Development, Implementation or Delivery and Evaluations) development model developed by [6].

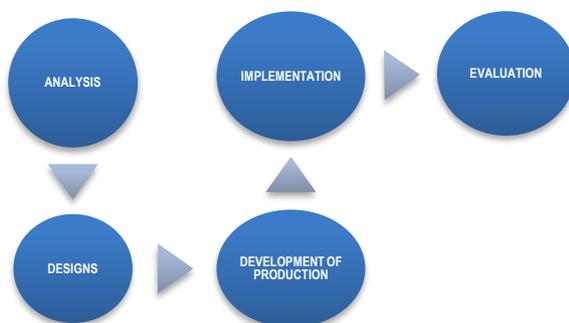


Figure 1. Research Procedure [6].

This model can be used for various forms of product development such as models, learning methods, media, teaching materials and learning models. This research procedure uses ADDIE, the following are the steps in this research procedure.

Data collection techniques in this study used: 1) the test method was used to collect data on students' cognitive learning achievement and verbal creativity, 2) the questionnaire method used to collect assessment data in this study consisted of a questionnaire on environmental care attitudes, questionnaires for students' affective and psychomotor assessments, 3) the observation method is used to collect data on affective and psychomotor assessments during the learning process.

The research implementation instruments used for the learning process are in the form of a syllabus, lesson plans and student worksheets. The data collection instruments used tests, observations, and questionnaires.

3. RESULTS AND DISCUSSION

The process of developing this learning model must ultimately be tested on the respondents in this study, namely several samples taken from all high schools in Makassar. At the trial stage of developing this learning model, several hypotheses emerged as a reference for the discussion in this study. Among others are:

3.1. First Hypothesis

Based on the test results with the General Linear Model, it shows that there is no effect of contextual learning from formal and informal models of hands-on activities on student achievement on Plantae material.

According to [7], informal learning is the main learning activity in adult education, where lessons (lessons) are sourced from daily life experiences and are learner-centered. This kind of learning is basically learning from life experiences that have a very broad scope, such as learning activities from experiences that are consciously designed by students to learning activities from experiences of success and failure that just happen to themselves, so it is hoped that learning from experience is expected. ultimately improve student achievement.

3.2. Second Hypothesis

From the results of the learning model trial, it shows that there is an influence of high and low creativity on students' learning achievement in biology. Based on these quantitative calculations, it turns out that there is a significant effect of high and low creativity on learning achievement both from the cognitive, affective, and psychomotor domains about biology.

According to [8] states "discovery learning is according to the active search for knowledge by humans

and by itself gives the best results". Students actively seek problem solving and the accompanying knowledge will produce truly meaningful knowledge. This is also in line with research [9], concluding that developing creativity can improve student achievement outcomes.

3.3. Third Hypothesis

From the test results of the environment-based contextual learning model, it shows that there is an influence of high and low environmental care attitudes on students' biology learning achievement. During the learning process of biology subject matter, a student's environmental care attitude is needed to better understand and participate actively in the learning process. An attitude of caring for the environment is needed so that students not only understand a material but can apply it in everyday life. In direct learning using the environment, students are expected to be able to witness the direct link between theory and practice in real experience so that learning becomes more meaningful. This effort allows students to learn independently, reducing dependence on teachers.

According to [10] "meaningful learning is a process of linking new information to relevant concepts contained in one's cognitive structure". The ongoing learning will produce changes in brain cells, especially cells that have stored information that is like the information being studied. In this case, students are required to understand the information received to be able to find out for themselves some or all the material to be taught and be able to connect or link that information to knowledge in the form of concepts that they already have so that learning becomes more meaningful.

From the description of the hypothesis above, it shows that there are changes and there is an influence on student learning outcomes in learning biology.

3.4. Fourth Hypothesis

Based on the results of the learning model trial, it shows that there is no interaction between the learning model and creativity on student achievement. According to research conducted by [11], concluded that the use of hands-on activities can provide a strong understanding of the concepts of the material being taught, both from a theoretical and practical point of view. Meanwhile, according to the [12], concluded that students who are taught to use hands-on activities in mathematics, 70% of students experience an increase in achievement or more and in science, 40% of students experience an increase in achievement.

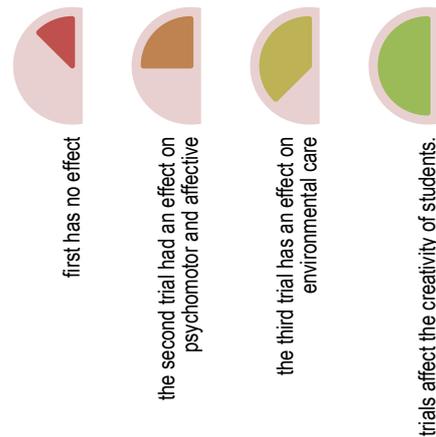


Figure 2. The Learning Model Trial Hypothesis

4. CONCLUSION

Based on the results of the research and discussion above, it can be concluded that:

(1) there is no effect of learning model in the first trial, this is illustrated in the first hypothesis (2) there is an influence of learning model on the growth of creativity both cognitively, affectively, and psychometrically; (3) there is an influence of learning model on high and low environmental care attitudes so that it triggers students' creativity; (4) there is an interaction between learning model and creativity on students' cognitive, affective, and psychomotor learning achievement. (5) there is an interaction between learning model and the attitude of caring for the environment on cognitive achievement, while for affective and psychomotor there is no.

In connection with this research, so that student learning achievement can be improved and can develop optimally, then in learning Biology there are several things that can be suggested. Some of these suggestions include: 1) for future researchers. Further research is needed on the effectiveness of using environmental-based contextual learning models in learning biology or other materials to obtain better results. Thus, the results of this study can increase the opportunities for using an environment-based contextual learning model, 2) for teachers. To be able to apply an environment-based contextual learning model to increase student creativity. In order for the implementation to be more effective, the thing that must be considered is that before the implementation of the research takes place, the teacher should first adapt to the learning model that will be applied so that in the implementation of research students are familiar with the learning model used, 3) for schools: (a) research results this should be a reference for schools to continuously develop innovative learning in order to improve student learning achievement, (b) the school should always seek adequate facilities and infrastructure in order to support the implementation of learning that

varies according to the characteristics of the subject matter.

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