

EdSA Program for Improving Creativities of Elementary School Teachers

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Abstract—The term ‘edutainment’ consists of the words ‘education’ and ‘entertainment’. People use the term to refer to an entertaining education. *Edutainment Sains Asyik* or EdSA is a program aiming on enhancing creativities of elementary school teachers in creating effective and entertaining scientific learning for elementary students. Methods applied in this program are by workshops and assistance. Success of the program were observed by the qualitative research method. Based on the researchers’ observation, results of this program arrangement are first, participants gained improvement at both their scientific knowledge and understanding after learning new matters that were unfamiliar for them; second, seventy point nine seven percent participants admitted for getting improvement both in their knowledge and understanding about entertaining scientific education after joining EdSA Workshop; third, seventy seven point four two percent participants believed that EdSA Workshop could support the implementation of 2013 Curriculum in the elementary school level; and fourth, after following EdSA program, there was a significant improvement of teachers’ understanding and creativity with the percentage of eleven point one one percent. The main result of this EdSA program is improvement of teachers’ understanding and creativity in science learning. The implication of this research are improvement of science learning quality.

Keywords— *sains asyik; edsa; science learning; creativity*

I. INTRODUCTION

Science is the basis for the creation of various technological innovations. Students’ interest in science subjects is an important factor for the availability of innovation technology creators. Science learning does not occur in a vacuum, where there is no interaction with school friends, teachers, and the world’s science community [1]. The statement implies that science is the knowledge that is shaped not only through the students’ personal reasoning, but is also influenced by the interaction of students with their social world, especially with teachers, schoolmates and the world’s science community. Based on this, the ability of teachers in creating quality science learning is important in the process of science knowledge construction in students.

Concerning scientific learning in elementary schools, based on data surveys from 42 elementary schools in Tarakan, data surveys from the Implementation of Certification for Teachers in Universitas Borneo Tarakan, data surveys from

lecturing activities given to teachers without linear scientific background in the Universitas Terbuka of UPBJJ Tarakan, and interviews with teachers from several elementary schools in Tarakan, the researcher discovered some issues as follows.

First, Students lacked of enthusiasms in learning science. Second, based on results of teachers’ certification in the past two years, the average approval of the participants of certification, especially elementary school teachers, was incredibly low in the main test, less than 30% (28.03% in 2015 and 20.06% in 2014). Participants usually passed the tests after retaking the tests once or twice. One of causes causing such failure was their lack of scientific education especially for the fourth, fifth, and sixth grades). Third, simple experiments to understand scientific materials (force, heat, substance form altering, digestive system, simple plane, etc.) were rarely conducted. This caused unimpressive scientific learning for students since they might find that the learning activities were boring and uninteresting. Fourth, scientific learning through experiments/practices or by direct observation in natural environment had been conducted but the intensity level was still extremely low for only once or twice in one semester. Fifth, out of 42 elementary schools in Tarakan, there were only four schools (9.52%) with labs. This was one of reasons why simple experiments were hardly ever conducted although by creativities, teachers could still utilize things around for experimental materials and instruments. Sixth, there had not been management for school facilities such as rooms, yards, gardens, and other areas that might support contextual scientific learning. Other facility managements such as providing certain plants and open places for observations, utilizing used stuffs, providing spaces to display students’ works, and so on would probably make scientific learning more effective and entertaining. Seventh, there were teachers with diplomas without linearity to subjects they handled, for example bachelor of English Education, bachelor of Indonesian Education, bachelor of Economy, etc. In 2015, it was noted that there were 24 elementary school teachers in Tarakan taking additional education in open universities (the subjects taken included scientific teaching for elementary students). Incompatible educational background caused minimum expertise on scientific materials, especially for fourth, fifth, and sixth grades. This gave a further impact that was creativity lacking of teachers.

Based on the above data, issues undergone by most schools were; first, teachers experienced lack of understanding and creativity in providing scientific learning, especially for fourth, fifth, and sixth grades that made students lose interests in learning, second, teachers required guidance and assistance to design a creative, scientific lesson plan for students and its application in class, and third, teachers needed guidance and assistance in designing plans for scientific experiments that utilized surroundings and things around the school to overcome the absence of school labs. Science experiments are very important to do as part of the habituation of scientific method skills. Scientific method skills are significant to teach ways of arriving at conclusions based on existing knowledge [2]. Students' interests and enthusiasms towards scientific learning should have been improved to master basic, scientific knowledge from an early age.

II. METHODS

This research applied the qualitative method. Reference [3] defines the qualitative research method as a research method based on post-positivistic philosophy and used to analyze scientific conditions of an object. The contrary of qualitative research method is the experimental research method that regards the researcher as the key instrument. The qualitative research method enables the researcher to take samples using purposive and snowball techniques and collect the data using the triangulation technique. In this research method, data are analyzed by hiring the inductive/qualitative technique. Results of qualitative research emphasizes more on meaning than generalization.

Research subjects were teachers from four elementary schools in Tarakan that were also the participants of the Edutainment Sains Asyik (EdSA) program. This research was conducted in Sekolah Dasar Negeri 024 Tarakan, Sekolah Dasar Negeri 015 Tarakan, Sekolah Dasar Negeri 013 Tarakan, and Sekolah Dasar Negeri 006 Tarakan.

III. FINDINGS AND DISCUSSION

EdSA Workshop was held in Sekolah Dasar Negeri 024 Tarakan. There were 31 teachers participating. They worked at different schools that were Sekolah Dasar Negeri 024 Tarakan, Sekolah Dasar Negeri 015 Tarakan, Sekolah Dasar Negeri 013 Tarakan, and Sekolah Dasar Negeri 006 Tarakan.

The major activities of the workshop were:

1. Sharing problems faced by teachers in providing scientific learning.
2. Introducing the EdSA program.
3. Introducing various activities for entertaining, scientific learning for students.

One of entertaining activities for scientific learning to make students actively participate is by asking them to conduct experiments. The experiment may be in forms of

simple experiments that suit learning materials for elementary students. In EdSA Workshop, teachers were asked to try various simple experiments using guiding books available and provided materials and tools.

Before practicing scientific experiments, teachers or workshop participants were divided into five groups. Each member of group worked together to conduct various learning activities and scientific experiments. All materials and instrument needed for the experiments were provided by the team of EdSA. The materials and instruments included simple lab instruments and were easily found nearby.

TABLE I ACTIVITIES IN EDUTAINMENT SAINS ASYIK PROGRAM

No.	Activities
1	Introduction and workshop of <i>Edutainment Sains Asyik</i>
2	Discussions and sharing problems faced by teachers in scientific learning and solution finding
3	Assistance in designing interesting, scientific lesson plan and scientific experiment worksheet for students
4	Assistance in applying interesting, scientific lesson plan in class
5	Submission of lesson plans, worksheets, and documentation of today's activities as ready-to-use learning instruments

Through observation and question-and-answer sessions while the workshop was being held, the researcher found some cases that were:

- a. Participants seemed not being accustomed to conduct experiments using simple lab instruments, as taking liquid by a pipette, measuring volume of certain liquid, etc.
- b. Most of the teachers had never practiced simple experiments (introduced in the workshop) in their scientific or thematic learning.
- c. The teachers showed enthusiasm in comprehending guiding books available and practiced several simple, scientific experiments.

Based on the teachers' responses on questionnaires given about the EdSA program, it is pointed out that EdSA Workshop could improve participants' understanding and knowledge in scientific learning. Questions and teachers' responses on questionnaires given are provided as follows:

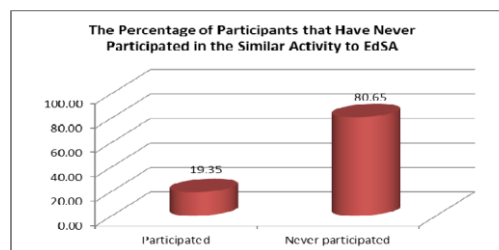


Fig. 1. The percentage of participants that have never participated in the similar activity to EdSA.

Figure 1 shows a chart displaying the fact that almost all participants have not participated in workshops concerning scientific learning. Hence, it can be concluded that EdSA Workshop gives additional knowledge and understanding for its participants.

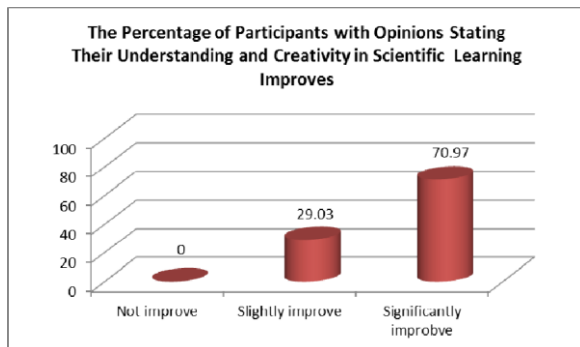


Fig. 2. The percentage of participants with opinions stating their understanding and creativity in scientific learning improves.

Figure 2 illustrates a chart showing all participants (100%) undergo improvement in their knowledge and understanding on scientific learning. 29.03% participants admit that they undergo a slight improvement and 70.97% convey that they undergo significant improvement, either at their understanding or their creativity in creating entertaining scientific lesson.

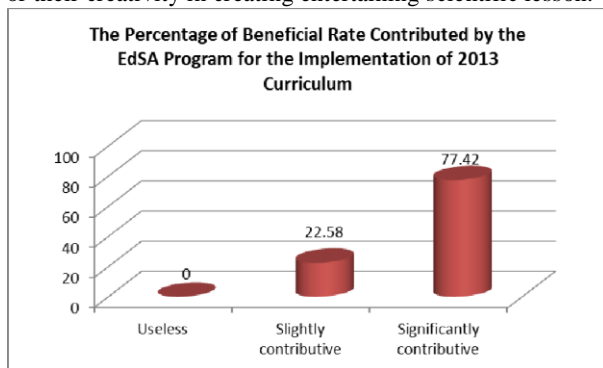


Fig. 3. The percentage of beneficial rate contributed by the EdSA program for the implementation of 2013 Curriculum.

In 2017, most of elementary schools in Tarakan has started using 2013 Curriculum. Figure 3 shows that 77.42% participants hold an opinion that the EdSA program has contributed to or supported the implementation of 2013 Curriculum. In other words, improvement at participants' understanding/knowledge on entertaining, scientific learning will support the implementation of 2013 Curriculum in schools at where they work.

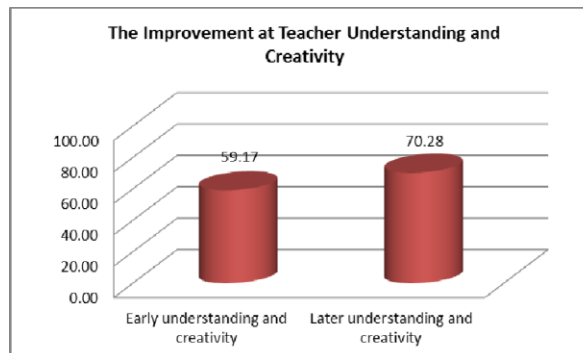


Fig. 4. The percentage of teachers' improvement at understanding and creativity.

In the chart shown by Figure 4, we can observe the teachers' understanding and creativity before and after the EdSA program being held. The teachers' understanding and creativity in scientific learning significantly increases until the percentage of 11.11% after joining the EdSA program. It can be assumed that the program is able to improve the teachers' understanding and creativity in scientific learning.

During EdSA Workshop, there were also assistance activities for teachers to design learning instruments and use them in class. The learning instruments designed had scientific themes and were customized to the curriculum used by the schools where those teacher worked at. Out of 31 workshop participants, there were eight teachers assisted (representing four elementary schools).

Products of the EdSA assistances were lesson plans and worksheets. The lesson plans and worksheets that had been designed then were implemented in class. Creative and entertaining learning strategies are one of entry points to achieve the objectives of effective and efficient learning for the sake of enhancing students' cognitive, affective, and psychomotor abilities [4][5]. *Edutainment Sains Asyik* was capable to be one of entry points to design entertaining and effective scientific learning. With the increase of creativity, teachers will be easier in making the learning contextual so meaningful for students. It is like the opinion that learning can be conceptualized as a contextual effort to make meaning, to understand [6].

IV. CONCLUSION

Conclusions from the research on *Edutainment Sains Asyik* (EdSA) program are that participants' understanding and creativities had improved since they learned something new. Participants showed great enthusiasms while performing all scientific experiments that had never conducted in class. Second, 70.97% participants stated that they had their understanding on scientific learning being improved and found more alternatives in designing interesting, scientific learning after following EdSA Workshop. In addition, 77.42% participants conveyed that EdSA Workshop could support the implementation of 2013 Curriculum in elementary schools. Finally, understanding and creativities of participants were proven to be improved with the percentage of 11.11%.

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