

SCIENCE EDUCATION TEACHING AND LEARNING ACTIVITY IN ISLAMIC BOARDING SCHOOL

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Abstract

Nowadays, Islamic education like *pesantren* (Islamic boarding school) has the undeniably substantial contributions to the advancement of education in Indonesia. However, as a matter of fact, the learning system of Islamic boarding school could be a great burden for students since it urges them to focus on both learning the national curriculum (K13) and the school's curriculum. SMP Daarut Tauhid, an example of Islamic boarding school, that has two types of class, namely regular and takhasuz class, has been implementing this sort of system. In regular class, students are required to memorize at least 1 juz of Al-Qur'an when they are at 9th grade. Meanwhile, students in takhasuz class have an obligation to memorize 30 juz of Al-Qur'an when they are at 9th grade. As a consequence, this would interference the learning of the other subjects including science lesson. Therefore, this study was undertaken to investigate learning activities of science lesson in takhasuz class which cover the use of learning media, assessment and evaluation and also to figure out the differences between teaching learning activities in regular class and those in takhasuz class. This study was conducted as a qualitative research with descriptive approach. Questionnaire and interview were used to collect the data needed. Questionnaire was used to get the information regarding to the teaching learning process and the facilities that are used. To validate the data, interview was used as well. The findings show that although in takhasuz class, students have more hours to focus on learning the school's curriculum, teacher still gives the best results on their achievement just like in regular class. The teacher also gives an extra support such as using media that can make students understand easily, making group for students so that they can study independently, and providing laboratory activity to boost their activeness. Despite that, the findings also reveal some problems faced by the teacher, which are the lack of facilities in the laboratory and the limited hours for doing an experiment. Based on the research results, it is suggested that the teacher should do the experiment that are suitable with the allocation time of study, and use the materials that can be easily obtained for the experiment.

Keywords: Islamic boarding school, science education, teaching and learning activity

1. INTRODUCTION

Islamic boarding school in Indonesia, called *pesantren*, has been developing for a long time, it has the role in the advancement of education in Indonesia. According to Thahir (2014), Islamic boarding school is also

believed to be an alternative for solving various problems of education that occurs at this time, it is known as the oldest institution of Islamic education in Indonesia.

Islamic boarding school has their own system in teaching and learning activity, one of them is the students have to stay in the schools dormitory. According to Srimulyani (2007), students in Islamic boarding school start to live in dormitory after graduating from primary school education. In this suitable age, parents consider their children can live separately from family.

Every Islamic boarding school in Indonesia has their own characteristic for building and implementing knowledge for their students. Nevertheless, in fact is, the learning system of Islamic boarding school could be a great burden for the students since it urges them to focus on both learning the national curriculum (K13) and the school's curriculum, besides they have to live separately from their family, this case is the main cause as well.

SMP Daarut Tauhid, one of Islamic boarding school in Bandung, that has two types of class, namely regular and takhasuz class, has been implementing this sort of system. In regular class, the students are required to memorize at least 1 juz of Al-Qur'an when they are at 9th grade. Meanwhile, students in takhasuz class have an obligation to memorize 30 juz of Al-Qur'an when they are at 9th grade. As a consequence, this would interference the learning of the other subjects including science lesson.

There are several differences between takhasuz class and regular class in learning science, such as less hours of lessons in every meeting, but the time for every week are still the same with regular class. Furthermore, there are not many homework given for the students in takhasuz class, they only involved in study groups created by the teacher, to have discussions about the problem given by the teacher. Moreover, the students in takhasuz class are not allowed to join extracurricular activities, except *PRAMUKA* (scout), but they only could do those activities only in the classroom.

The interesting thing is, the teacher still gives the best results on the achievement of the students in takhasuz class just like in regular class. Therefore, the researcher was interested to investigate about learning activities of science lesson in takhasuz class which cover the use of learning media, assessment and evaluation, also to figure out the differences between teaching learning activities in regular class and those in takhasuz class.

2. METHODOLOGY

2.1. Research Design

The research design used in this study was a qualitative research with descriptive approach. According to Fraenkel et al (2012), qualitative research is studies that investigate the quality of relationships, activities, situations, or materials. In this research, questionnaire and interview were used to collect the data needed. Questionnaire was used to get the information regarding to the teaching learning process and the facilities that are used. Questionnaire adapted from *Buku Panduan PPL SM3T 2016*. To validate the data in this research, interview was used as well.

2.2. Research Subject

The subject of observation is a science teacher of class VII in SMP Daarut Tauhid, who teaches science both in takhasuz class and regular class. Data retrieval begins from the third week of September to the third week of December 2016. This is done to perfect the desired data. Completion of data is done through teacher interview as the subject of this research. The data of class observation were done in the third week of October, while the data in the form of interview result were done from the fourth week of October to the first week of December 2016.

2.3. Finding and Discussion

2.3.1. The results and discussion of learning activities questionnaire

Based on the information from table 1 below, the teacher has prepared all the documents supporting for the learning activities. Furthermore, from table 2 it shows that there are four items that the teacher does not do during the teaching and learning activities. These four items are closely related to the science learning objectives, such as the teaching and learning process should be student-centered, but the results of the observations indicated that the teaching and learning process is still teacher-centered.

The teacher assumes that the student-centered teaching and learning process usually takes more time to achieve a particular goal. So that, the teacher is more interested in teacher-centered approach in the teaching and learning process. According to Hugerat (2016), a student-centered approach focuses more on the student needs, learning processes, provides guidance, and feedback. Based on the benefits of student-centered approach, it suggested that the teacher to use this approach, but still have to adjust with the time allocation, student's capability and needs, also school's facilities.

To assist the students in understanding the concept of learning, the teacher usually brings the tools that can be used during the teaching and learning activities. For example, the teacher brings thermometer to help students to remember the lessons that taught in previous lesson. During the teaching and learning process, the teacher also organizes the students into several groups to do the experiment inside of the classroom, they used student worksheet during an experiment and discuss about the problem in student worksheet. The experiment activity that conducted inside of the classroom, due to the lack of facilities such as tools and materials to accommodate all the needs of the students, so the teacher should combine the students into groups and use the tools together in turn. In spite of that, takhasuz class has less hours for doing an experiment, that is why the teacher have to use the allocation of time properly.

It suggested that the teacher had better to ask the students to create the tools and materials for the experiment, as the solution for the lack of facilities to do the experiment. For an example, in subjects that have to use a thermometer, the teacher can do the steps in the experiment retrieved from internet, named Science Snack, that used the inverted bottles to watch the rise and fall of hot and cold fluids. This aim is to investigate convection by using food coloring and water at different temperatures. The tools and materials in these experiments are easy to obtain and make by the students.

Table 1. Questionnaire Results of Observation about Preparation Before Teaching and Learning

	OBSERVATION ASPECTS	Observation Results		Explanation
		Applied	Not Applied	
1.	Annual program. Contains competency standards, basic competencies, and the allocation of time for one year that is suitable for the effective weeks of study.	✓		
2.	Semester program. Contains competency standards, basic competencies, division of time allocation, and details of on certain weeks for one semester in accordance to the effective weeks of study.	✓		
3.	Syllabus. Include competency standards, basic competencies, learning materials, indicator, assessment, time allocation, and learning sources.	✓		
4.	Minimum Passing Criteria (KKM) for each basic competency. KKM for basic competency ≥ 75 and appropriate with those criteria of calculation, also the explanation has to write into the table.	✓		
5.	Lesson plan. Contains objectives and learning activities that are systematic and logical, and actively involve students to achieve learning objectives / indicators / basic competency, learning materials, learning resources, and assessment of learning outcomes.	✓		
6.	Students report. Contains student scores for all assessments that have been implemented, for knowledge, practice, or attitude.	✓		

Table 2. Questionnaire Results of Observation about Teaching and Learning Science Lesson

	OBSERVATION ASPECTS	Observation Results		Explanation
		Applied	Not Applied	
	A. Introduction			
1.	The availability of learning tools and media (Learning Resources).			
	Prepare the learning resources that needed completely	✓		PowerPoint, thermometer
2.	Motivation			
a.	Started the lesson with a cheerful	✓		The teacher wants student to explain about the experiment before.
b.	Shows the benefit of basic competencies in daily lives or the related between another lesson.	✓		
c.	Gives the challenging problems that stimulates students to solve them	✓		
3.	Apperception			
	Ask questions about previous meeting that related to the current subject.	✓		What kind of tools to measure the temperature?
4.	Clarity of basic competencies / Indicator.			
	Convey both oral and written basic competencies/ Indicator that must comprehend by students after learning	✓		
5.	The availability of learning materials (learning resources)			
	Prepare the learning resources, such as books, module cassette /compact disk learning, etc.	✓		
	B. Main Activity			
1.	Materials Comprehension			
a.	Confident and not hesitant in delivering learning materials.	✓		
b.	Student questions are answered appropriately.	✓		
c.	The truth of the concepts that conveyed.	✓		
2.	Class management			
a.	There is convenient for students to interact with the teacher	✓		
b.	There is convenient for students to interact with their friends		✓	The teacher only focused students to the teacher's answer
3.	Time management			

a.	Used time according to allocation provided.	✓		
b.	Time allocation is spent on student activities compared to teacher activities		✓	The teacher explains more in front of the class
4.	Method / learning approach			
a.	Using a student-centered learning approach		✓	The teacher explains more in front of the class. The teacher-centered approach
b.	The learning steps are done in an orderly and systematic way	✓		
c.	Learning activities use varied methods.	✓		
5.	The used of of learning tools / media			
	Effective and efficient in using learning tools / media (learning resources) that has prepared	✓		
6.	The role of the teacher as a facilitator			
a.	Allow / facilitate students to undertake various activities in achieving indicators / basic competencies.	✓		
b.	Always ready to help students when needed.	✓		
7.	Technique of asking			
a.	Ask questions to all students	✓		
b.	Giving time for students to think	✓		
c.	Avoid answers simultaneously by pointing at one of the students to answer	✓		
d.	In response to student questions / answers, the teacher's attitude shows patience to listen (not cutting off student questions / answers)	✓		
e.	Do not scoff at students even though the students' questions / answers are less precise, and do not directly blame students' opinions	✓		
f.	Giving rewards for the right questions / answers		✓	The teacher responds by adding student answers
8.	Interactions and activities of the students			
	All the students have the interactions and involved actively in various learning activities.	✓		
9.	Attitude and interest of the students in learning			
a.	The number of students who attend class ≥ 95 %	✓		
b.	Most of the students bring relevant textbooks ($\geq 75\%$)	✓		
c.	Most of the students taking notes ($\geq 75\%$)	✓		
10.	The achievement of basic competencies/ Indicator			

	The teacher questions related to learning objectives/indicator/basic competencies, both delivered during the lesson and at the end of the lesson, are mostly answered by the students very well ($\geq 75\%$)	✓		
	C. Closure			
1.	Summary			
	The students make summary that guides by the teacher	✓		
2.	The task for the next meeting			
	The teacher gives the tasks (homework, read books/find information, etc.) for the next meeting.	✓		

2.3.2. The results and discussion of interview

Based on the information from the interview, it is noted that the selection to enter takhasuz class is depend on the number of memorizing for each juz of Al-Qur'an. The more they could memorize juz of Al-Qur'an, the more opportunities they could enter takhasuz class. There is no an academic test to enter takhasuz class, so that takhasuz class is consisting of the students who has different academic abilities. There is no urges for the students entering takhasuz class, it is all by their interest, besides the number of juz Al-Qur'an they already memorized.

The teaching and learning activities of science lesson in takhasuz class are the same as the teaching and learning activities in regular class. The selection of learning methods and the time duration of learning is no different between takhasuz class and regular class. Although in takhasuz class the learning of the national curriculum is less than regular class, but takhasuz class has more time in learning their school's curriculum, which focus on learning Islamic lessons, such as *halaqah*, *aqidah*, *fiqih*, etc. One of takhasuz class activities which differ from regular class is, before subuh prayer the students in takhasuz class have to meet their teacher to recite Al-Qur'an that they already memorize.

In takhasuz class the teacher is not allowed to gives many of homework, but as the solution the teacher makes groups for study, which the tutor is the students who already comprehend the learning materials, so they have to teach their friends. The teacher organizes the students into several small groups, with one of them as the group leader, so the discussion become more effective. These program named, *belmanter* (*belajar mandiri terpadu*), or integrated self- study.

Belmanter is as the learning source, because the teacher gives such a module that contains learning materials and questions to discuss and solve the problems together. *Belmanter* program is conducted three times a week, Monday, Tuesday, and Friday. According to Pollock et all (2014), much of the pedagogical literature has established that discussions can foster student learning as students become actively engaged. So that, the implementation of *belmanter* could be one of the teacher's efforts to make the students in takhasuz class understand the subject, even though the allocation of time to learn inside of the classroom as not much as a regular class.

The academic ability of the students from takhasuz class is not different from students the in regular class. This is evidenced by the results of the Middle Exam Semester and Final Exam School that does not differ between takhasuz class and regular class. The assessment conducted in the form of daily tests, student reports, and portfolio. Portfolio is a collection of the students' daily test results and student reports. The portfolio is gathered at the end of each semester and becomes one of the students' assessment resources for the teacher. The teacher also performs affective assessment, but only based on the student activeness in the classroom. Teachers perform evaluation in the form of midterms and final exams semester. The final grade of the student is determined by the value of the final exam of the semester, the value of the midterm examination, affective value, and portfolio.

The teacher explained that the media used in the teaching and learning science are from various media based on the subject, and have to make sure it's appropriate with students' capability and the allocation of time. The media used are usually PowerPoint and video, as well as doing experiments in laboratory and

school environment. The teacher listens to the student's request as well, if they want to watch an animation video or videos like Discovery Channel and Harun Yahya before the class ended.

The teacher used video-based media from the internet, she said it is not difficult to obtain. The case is only when the students are difficult to understand if the audio contained in the video is in English, so the teacher must translate and explain it to the students. According to Starting Point, popular media (films, music, YouTube) are a familiar medium to students that helps gain attention and maintain student interest in the theories and concepts under discussion. Students can see the theories and concepts in action. In more than a figurative sense, theories and concepts leap from the screen.

3. CONCLUSION AND SUGGESTION

There are not many differences between the teaching and learning science, both in takhasuz class and regular class. The assessment and evaluation, as well as the used of the media are the same for both classes. The differences are only from the time of learning national curriculum and school's curriculum. The teacher suggested to create the media and tools that easily to be obtained, due to the lack of facilities for doing the experiment inside of the laboratory.

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