CHAPTER IV
RESULTS AND DISCUSSION

4.1 Results

The results of the study are exposure to the data obtained after the research. Some things that will be discussed in this result are 1) Description of research data, 2) Learning Outcomes Data Description, 4) Requirements of Data Analysis Test, and 5) Hypothesis.

4.1.1 Description of Research Data

This research is a continuation of previous research that has been conducted by Yodia Utami (2016) which produces innovative teaching materials on salt hydrolysis material. The instructional materials developed provide the results of teaching materials that have met the quality standards required by the BSNP covering feasibility fill in appropriateness language and appropriateness presentation.

In the 2013 curriculum, there are core competency formulas and basic competencies that include character education must be equipped with teaching materials that support the achievement of core competencies and basic competenci es as that formulated in curriculum 2013.

In this study the researchers carried out the implementation of integrated instructional materials of spiritual values that had been developed for students to find out the results of students' chemistry learning. Thus it is expected that the results obtained in this study can provide a greater contribution to the achievement of National Education goals.

The approach method used to achieve this goal is experimental research. Instrument used to determine student learning outcomes is obtained from the pre- test and post- test scores using multiple choice instruments. To see the

development of spiritual values by using self-assessment questionnaires and observation sheets.

4. 2 Description of Learning Results Data

4.2.1 Pretest Data

Before the two samples were given a different treatment, first they were given an initial test or pretest which aimed to find out the initial ability of each second student and the experiment. The pretest results are based on the research data in the form of students' chemistry learning outcomes obtained from the average score of the pretest for the experimental class I and experiment class II can be summarized in T and 4.1.

. Table 4.1 Student Pre-test Data Experiments Class I and Experiment Class II

Class	Average	Standard Deviation	The Highest Score	Lowest Value
Experiment I	25.00	6.742	35	15
Experiment II	29.41	6.602	40	20

The table above shows that the experimental class I students' pretest results have an average of 25.00 and a standard deviation of 6.742 with the highest score of 35 and the lowest value of 15. While the experimental class II has an average of 29.41 and a standard deviation of 6.602 with the highest value of 40 and the lowest value of 20. Table 4.1 it can be concluded that the average value of the highest pretest is 40 contained in the experimental class II.

4.2.2 Post-test Data

Based on the data obtained from the research results obtained the average of the posttest values for the experiment I and experiment II which are summarized in Table 4.2.

Table 4.2 Student Post-test Data Experiments Class I and Experiment II Class

Class	Average	Standard Deviation	The Highest Score	Lowest Value
Experiment I	88.09	6.515	100	75
Experiment II	83.24	6.382	95	75

The table above shows the results of the post-grade students' posttest of experiment I had an average of 88.09 and a standard deviation of 6.515 with a value of 100 high and the lowest value of 75. While experiment class II has an average of 83.24 and a standard deviation 6.382 with value highest 95 and Lowest value is 75.

From table 4.2 it can be concluded that the average posttest score of the experimental class I is that students taught using integrated chemistry teaching materials are spiritual values with the Discovery Learning model higher than the experimental class II students who are taught using students' handbooks with Discovery Learning model with average post-test experiment I was 88.09 and experiment II was 83.24.

4.2.3 Spiritual Value Data

In the experimental class I before being given treatment first a questionnaire must be filled by students as an initial test or pretest which aims to determine the spiritual attitude of students in the experimental class I, then the same questionnaire is given again after the treatment in the experimental class I is summarized in Table 4.5 (Appendix 17) .

The average diagram of the spiritual value of the experimental class students is before the treatment and after the treatment can be seen in Figure 4.2.

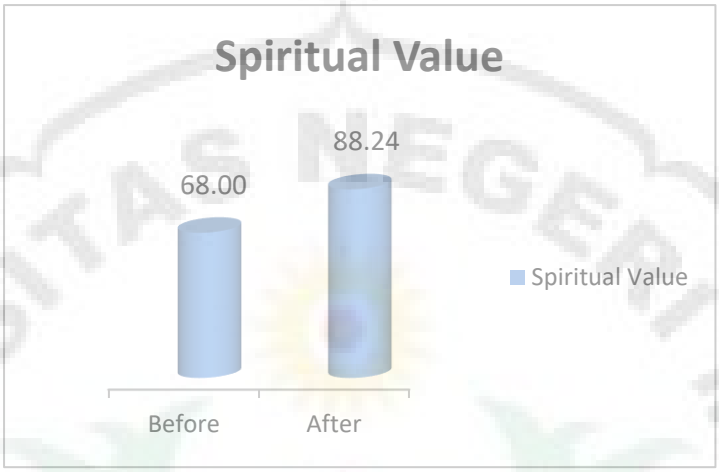

Figure 4.2 Spiritual Value Experiment Class I

Based on Figure 4.2 it can be seen that the spiritual attitude of the experimental class I students with chemistry learning material integrated chemistry spiritual values with Discovery Learning model at each meeting. At the first meeting the average spiritual attitude is 68.00 and at the last meeting the value increased to 88.24.

4.3 Data Analysis Requirements Test

Before testing the hypothesis, the data requirements must be tested first as an initial requirement for further statistical testing. The test used was the Komogorov-Smirnov test at a significance level of 0.05. Then test the homogeneity of the data using the Levene Test Statistics test at a significance level of 0.05. Testing is done using the SPSS 20 For Windows program.

4.3.1 Data Normality Test

This data normality test is conducted to find out whether the data used is normally distributed or not. The sample comes from the same population. The data normality test was conducted at the pre-test and post-test using the SPSS 20 For Windows program with a significance level of 0.05.

Normality Test for Post-Test Sample Data

Table 4.3 Normality Test for Sample Post-Test Data

Tests of Normality							
Class		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Student Learning Outcomes	Post-Test Experiment Class I (Spiritual Value)	.135	34	.119	.943	34	.074
	Post-Test Experiment Class II	.142	34	.081	.940	34	.063
a. Lilliefors Significance Correction							

1. Tests of Normality Experiment I

   Based on Table 4.3 can be seen that Sig. 0.119 > α (0.05) which shows that the experimental class post-test data comes from a population that is normally distributed.

2. Tests of Normality Experiment II

   Based on Table 4.3 it can be seen that Sig. 0.081 > α (0.05) which shows that the experimental class II post-test data comes from a population that is normally distributed.

4.3.2 Data Homogeneity Test

The data homogeneity test aims to determine whether the data distribution has homogeneous variance or not so that the research sample from the beginning is stated in the same state. Samples come from the same population. The data homogeneity test was done by Levenes Test with a level with a significance level α = 0.05

Homogeneity Test for Post-Test Sample Data

Table 4.4 Homogeneity Test for Sample Post-Test Data

Test of Homogeneity of Variances			
Levene Statistic	df1	df2	Sig.
.688	1	66	.410

Based on Table 4.4 it can be seen that Sig. 0.410 > α (0.05), this shows that the post-test data is the class of experiment I and experiment II homogeneous.

4.4 Hypothesis Test

Test hypothesis 1 to 2 using SPSS 20 For Windows.

4.4.1 First Hypothesis Test

Based on the hypothesis test with SPSS 20 For Windows, it was found that there was a difference in student learning outcomes conducted by the Independent Sample T-test which was taught using chemistry learning integrated spiritual values with chemistry handbooks by students through the Discovery Learning model to test the following hypothesis:

H_0 : There is no difference in students' learning outcomes taught using chemistry learning materials integrated spiritual values with high school student's handbook through the discovery learning model.

Ha : There is difference in students' learning outcomes taught using chemistry learning materials integrated spiritual values with high school student's handbook through the discovery learning model.

Statistical Hypothesis

H_0 : $\mu_1 = \mu_2$

Ha : $\mu_1 \neq \mu_2$

The criteria that apply in testing data using SPSS 20 For Windows are if Sig. < α Ha is accepted. From the test results obtained by Sig. 0.006 < α (0.05) it could be concluded that the Hypotesis first received (Appendix 21). This means that there are differences in student learning outcomes that use chemical teaching materials integrated spiritual values with high school chemistry teaching books for students through the Discovery Learning model.

4.4.2 Second Hypothesis Test

To test the second hypothesis that there is a relationship between spiritual values with increased learning outcomes, Correlation is used in the SPSS 20 For Windows program to test the hypothesis as follows:

H_0: There is no relationship between spiritual values in student learning outcomes.

Ha: There is a relationship between spiritual value and student learning outcomes.

Statistical Hypothesis

H_0: $\rho = 0$

Ha: $\rho \neq 0$

Testing the second hypothesis based on the calculation obtained the results. The criteria that apply in testing and using SPSS 20 For Windows are Correlation from –1 to +1, and the larger the value, the stronger the correlation. And if Sig.(2-tailed) < α (0.05), then Ha is accepted, but if Sig.(2-tailed) > α, Ha is rejected. From the test results obtained Sig. 0.003 < α (0.05) and the correlation is +1. This means that there is a relationship between spiritual values on improving student learning outcomes that are taught with integrated chemistry teaching materials. So the second hypothesis is accepted in Table 4.5.

Table 4.5 Second Hypothesis Test Results

Correlations

		Spiritual Value	Post-Test Experiment I
Spiritual Value	Pearson Correlation	1	.500**
	Sig. (2-tailed)		.003
	N	34	34
Post-Test Experiment I	Pearson Correlation	.500**	1
	Sig. (2-tailed)	.003	
	N	34	34

**. Correlation is significant at the 0.01 level (2-tailed).

4.5 Discussion

This research is based on whether the integrated teaching materials of spiritual values that have been developed have differences compared to the textbooks of students' grip on student learning outcomes. In addition, is there a relationship between spiritual values and student learning outcomes? The benefits gained from the implementation of teaching materials are to develop students' spiritual attitudes and improve student learning outcomes.

4.5.1 Differences in Learning Outcomes

Overall students who learn to use chemical teaching materials integrated spiritual values with the Discovery Learning model get an average post-test higher value (88.09) than students taught high school chemistry textbook using the handle students with Discovery Learning model has average post-test value (83.24) on the subject of chemistry class XI semester 2 at SMA Negeri 1 Rantau Selatan.

Based on the results of testing hypotheses, through testing SPPS 20 For Windows data it is known that chemistry teaching materials integrated spiritual values with Discovery Learning models affect students' learning outcomes. Where the learning outcomes of chemistry students taught using integrated chemistry teaching materials spiritual values with Discovery Learning model is higher than the learning outcomes of chemistry students who are taught using high school chemistry handbooks for students. Then the conclusion of the first hypothesis is accepted. This means that there is a difference in learning outcomes of students who are taught using chemistry teaching materials integrated spiritual values with high school chemistry handbook of students through the Discovery Learning learning model.

The influence of teaching materials that have been developed here because the integrated teaching materials of spiritual values encourage students to form a positive attitude towards chemistry by realizing the order and beauty of nature and glorifying the greatness of God Almighty. This is in accordance with the opinion Saputro (2011) which states that students are interested in learning more in-depth chemistry because chemistry is not a set of formulas and chemical equations that must be memorized and then forgotten after school, but the study of regularity law beauty Ilahi in the universe.

Integrated teaching materials spiritual values can foster a positive attitude of students to be intelligent, sincere, disciplined and have high awareness so that students have spiritual intelligence has a strong motivation to expand their knowledge through the learning process. Students who have spiritual intelligence will be responsible for their work. This is what makes the learning outcomes of students who use integrated teaching materials spiritual values are higher than those who use school books.

Many studies suggest the importance of integrating spiritual aspects into learning, including the opinion of Djudin (2011), that if science teaching is

integrated with other concepts, then it will benefit to make teaching more meaningful to students. In line with Darmana (2013) who argues that integrating monotheistic values in teaching material does not reduce the quality of the scientific level of science itself, it is even the right effort because it means returning the union between Shari'a and nature. This is similar to what was said by Jumini (2015) who argued that the science of religion could be used as a counterweight to science because if science was not balanced with religious knowledge it would produce physical progress but dryness in the spiritual aspect.

In addition, the learning process is influenced by the Discovery Learning model that requires students to be active and have creativity in solving each problem. This is consistent with the opinion of Warsonowati (2014) who said Discovery Learning models can increase student activity in the learning process and provide opportunities for students to apply the knowledge they have to the real world. Combining these two things makes the learning process more interesting.

4.5.2 Effectiveness of Integrated Spiritual Value Learning Materials Develop Spiritual Values

Basically, SMA Negeri 1 Rantau Selatan has internalized the spiritual value to its students. Internalization of the spiritual attitude in this school through regulations both of written and unwritten. Among the processes of internalization of spiritual attitudes is that before the lesson begins praying, first proceed with the reading of the baby tiger. So, students are used to pray when they want to do anything. It's just that spiritual values have not been integrated in every subject of each subject.

In this study the integration of spiritual values is carried out by inserting spiritual values into teaching materials adapted to the salt hydrolysis material. From the results of research developing character values shows that

there has been a development of students' spiritual values. This happens because the teaching materials that have been developed are equipped with religious elements and provide positive energy to students. Descriptions and examples in instructional materials invite students to think about God's creations in the sky, on earth and in them, which encourages students to glorify and believe in the Creator of Allah SWT. And in the end become individuals who understand the universe and glorify God and are devoted to Him. This is in accordance with the results of Saputro's (2011) study which states that the integration of religious values derived from the verses of the Qur'an in chemistry textbooks can instill Islamic education (noble insane character) to students. This is similarly expressed by Djudin (2011) who stated that inserting religious values in science lessons is a real effort to realize the learning goals of science so that students glorify and believe in the Creator.

4.5.3 Relationship of Spiritual Values to Learning Outcomes

Based on the results of hypothesis testing conducted using SPSS 20 For Windows. The criteria that apply in testing the data using SPSS 20 For Windows are Sig.< α(0.05) so Ha is accepted, but Sig. > α(0.05) then H_0 rejected. From the results of the test obtained Sig. 0.003 < α(0.05). So the conclusion is that the second hypothesis is accepted. From the explanation above, it can be seen that the relationship with the criteria is rather low between students who have a high ability in learning outcomes with spiritual value acquisition. This is similar to what was said by Jumini (2015) who argues that religious science can be used as a counterweight to science, because if science is not balanced with religious knowledge it will produce physical progress but dry in the spiritual aspect. In line with Djudin (2011) who said that if science teaching is integrated with other lessons and concepts then it will benefit to make teaching more meaningful to students. Basically the goal of education will be possible if religion and science are combined. Science that relies on the power of logic will produce something useful or good accompanied by spiritual power derived from religion. Western

science has no wisdom to make life sacred and meaningful (Blanch, 2007). The combination of science and religion is the right combination of concepts to understand nature (Marssonet, 2012).

However, the magnitude of the influence of spiritual values on learning outcomes was obtained by ±25%, this is because in the questionnaire self-assessment of students who have low spiritual, while students who have low learning outcomes assess themselves already have high spiritual value, whereas when viewed from the assessment observations made by the teacher, students who have low learning outcomes have also low spiritual values.