JURNAL PENDIDIKAN & PENGAJARAN GURU SEKOLAH DASAR **Volume 6, Number 2, July 2023, Page** 148-155
http://journal.unpak.ac.id/index.php/jppguseda, *e-ISSN: 2623-0232 ; p-ISSN: 2623-0941*

ANALYSIS OF THE RADEC LEARNING MODEL ON SCIENCE LITERACY OF ELEMENTARY SCHOOL STUDENTS

Muh Hasbi[1], Khaeruddin[2], Ma'ruf[3]
[1,2,3]*Universitas Muhammadiyah Makassar, Makassar, Sulawesi Selatan*
Email correspondence : Muhhasbi32@guru.sd.belajar.id

Abstract. This study aims to analyze the radec learning model for scientific literacy and learning outcomes. The type of research used in this study is Quantitative research (quasi experiment). The subjects used in this study were students of class V with a total of 70 students consisting of two classes (VA and VB). The instruments used in this study were in the form of instruments, namely tests, questionnaires, observation and documentation. Data analysis techniques were carried out, namely descriptive tests (mean, median, mode and standard deviation) and inferential tests (Normality, Homogeneity and Manova).. Based on data analysis using SPSS 25 that tests the normality of cyan literacy and learning outcomes using*Kolmogorov-Smirnov*i.e. sig > 0.05 from the pretest and posttest results of the control and experimental classes and the homogeneity test using the based mean is sig > 0.05 from the pretest and posttest results of the control and experimental classes while the manova test is obtained showing a significance value of 0.000. 0.000 < 0.05 then□□ rejected and□□ accepted. Based on this, it can be concluded that there is a significant influence on the use of the Learning Model*Radec* on scientific literacy and science learning outcomes UPT SPF SDI Bontoa Makassar.

Keywords: Learning Model, Radec, Scientific Literacy and Learning Outcomes

I. INTRODUCTION

The development of the era in the era of the digital age is characterized by the rapid development of information and communication technology. According to [1], *The ten competencies believe* (1) *creativity and innovation*, (2) *critical thinking, problem solving, and decision making*, (3) *metacognition*, (4) *communication*, (5) *collaboration*, (6) *information literacy*, (7) *information and communication technology* (ICT) *literacy*, (8) *citizenship*, (9) *life and career, and* (10) *personal and social responsibility, including awareness of competency and culture* [2].

Ideally as a solution for learning in the 21st century, learning must fulfill the above factors as a basis for the development of education in schools and other efforts, namely the active contribution of students to learning activities [3], learning regulations as an agreement between teachers and students, learning techniques, ways teacher assessment, the content or form of the material presented, the learning environment, and the infrastructure used [4]. Thus success in learning depends on several factors in terms of the elements of students, teachers, learning resources, integrated information technology so as to create quality learning.

Developments in the national education system demand to produce quality human resources (HR) that are able to compete in the global era [5]. In the current era of globalization, the challenges of competition in various aspects of life are getting tougher. One of them is in terms of Science and Technology (IPTEK). Therefore it takes resources that are able to compete. The purpose of national education in Law Number 20 of 2003 is that national education functions to develop abilities and form dignified national character and civilization in order to educate the nation's life, aims to develop the potential of students to become human beings who believe and fear God Almighty, having noble character, healthy, knowledgeable, capable, creative, independent and being a democratic and responsible citizen [6].

Based on the results of research [7] the lack of concern for improving students' scientific literacy skills is reflected in the study results*Programme for International Student Assessment* (PISA) and (*The Trends in International Mathematics and Science Study*) TIMSS which is held every 4 years but in 2019 Indonesia did not participate in the study [8]. Based on the results of a survey conducted by PISA, although it has increased, from 64th out of 65 countries in 2012 to 64th out of 72 countries in 2015, then in 2018 science ability is in 71st position, Indonesia is still at low group. Indonesia is still in the low ability group when viewed from a cognitive aspect (*knowing, applying, reasoning*). In line with PISA, the results of the TIMSS study of Indonesian students in 2011 ranked 40th out of 42 countries and in 2015 ranked 45th out of 48 countries [9]. The results of these studies are sufficient to prove that Indonesian students are still weak in scientific literacy skills.

The low ability of scientific literacy affects the understanding of science concepts that students need to make more sense of the learning that takes place. As a result, running classes become rote. Teachers must pay great attention to these problems[10]. Furthermore [11] stated that student learning outcomes in science were caused by a lack of student literacy in the science learning process. This happened because of the first few things, the teacher only asked students to work on the questions in the book, after that the teacher discussed the answers to student questions. Second, when the learning process takes place, the teacher only uses the lecture and question and answer method. Such learning seems monotonous and lacks innovation.

Student success can be determined by the teacher's role in learning. Teachers are expected to have the ability to plan and implement learning to be able to solve problems and improve scientific literacy skills in science learning [12] [13].

The low quality of teachers can result in underdevelopment of education in the area. Although teachers are not the only determining factor for success in the field of education, education is guided by teaching staff, namely teachers. The low quality of teachers is found in almost all fields of study, including the field of science in learning in elementary schools which is integrated into thematic learning.

[14] conducted research on the competence of Indonesian teachers, from the results of his research stated that of the approximately 60 teachers who were the subject of his research, almost 75 percent of teachers did not prepare the learning process properly. Teachers tend to prepare lessons by prioritizing the material to be taught, not the learning objectives. Another fact revealed is that teachers also tend to teach using a monotonous method, meaning they do not use creative and interesting learning methods to arouse students' enthusiasm for learning in class. Another thing that was also revealed was that teachers tended not to make learning objectives the basis for designing learning strategies, teaching materials, and also designing learning evaluation and assessment tools.

Based on observations at UPT SPF SD Inpres Bontoa the learning model used is more inclined to use the conventional model, learning delivered through the lecture method and giving assignments given by the teacher is less effective because many students pay less attention and are engrossed in themselves with their peers. The learning model does not attract students' attention, so that the learning results are less than optimal. Learning outcomes that are less than optimal lead to low learning outcomes, especially science learning which does not experience a significant increase starting from the scientific literacy skills of students who have not been able to digest and analyze the questions given by the teacher which results in student learning outcomes not reaching the KKM (minimum completeness criteria). which has been approved by the school.

The use of varied models can help teachers carry out their duties as educators with the time available and utilize existing facilities. A varied learning model can also make students more enthusiastic and feel interested in participating in full learning and playing an active role in learning activities. A varied learning model that can lead students to be active and fun in dealing with natural science learning, especially in the teaching and learning process in elementary schools is a learning model.*RADEC* (*Read, Answer, Discuss, Explain, Create*).

The RADEC learning model (Read, Answer, Discuss, Explain and Create) was first introduced by [15] [16]. RADEC is a learning model that can improve the skills and reading comprehension of students, especially in the learning process in the classroom. With the application of the RADEC learning model in the learning carried out, it is hoped that students will have mastery of the concepts and skills of scientific literacy in students. Through the application of the RADEC learning model, students can be creative in creating new ideas, solving problems, and increasing creative work. All of this is expected to be achieved within the time allocation available in the curriculum [17]. Through this learning model it is also hoped that there will be changes in the behavior of teachers and students, where teachers must have a good understanding of teaching materials and other competencies needed in delivering lessons.

Based on the statement above, the Radec learning model is very helpful in the learning process in the classroom so that it can help improve the scientific literacy skills of students in class V at UPT SPF SD Inpres Bontoa Kec. Tamalate, Makassar City. According to [18] Scientific literacy is an individual's scientific ability to use their knowledge in the process of identifying problems, acquiring new knowledge, explaining scientific phenomena, and drawing conclusions based on evidence related to scientific issues.

Based on the results of observations at UPT SPF SD Inpres Bontoa with class V teachers in science subjects in class they still have a low level of learning success. in fact, at UPT SPF SDI Bontoa what happened was not what was expected. A total of 42 students have many problems. Especially in the learning process based on initial data received from UPT SPF SDI Bontoa, out of 42 students there were 75% of students whose grades did not meet the KKM standards, namely 75 and the average score obtained was 69, which affected learning outcomes due to the learning process of the participants students do not understand the material being taught according to the development of the existing curriculum starting to analyze questions, lack of scientific literacy of students and HOTS questions (*High Order thinking skilis*). This results in less attention to the teacher when teaching because of the influence of factors from within the students and from outside so that they put aside learning. As a result, students who often do this will miss the subject matter or do not understand the material being taught, so that the evaluation results do not reach the completeness score that has been determined at the school.

This is in line with what was stated by [19] stating that learning outcomes are an act of evaluating aspects of thinking (*cognitive*), attitude aspects (*affective*) and skill abilities (*psychomotor*) that exist in children after carrying out the learning process. Learning outcomes are the result of an interaction process of the learning and teaching process to achieve learning goals and abilities possessed by students after the learning process, the main purpose of learning outcomes is to find out to what extent students succeed in understanding and understanding the material provided in the learning process [20].

Effective science learning is pursued in order to provide a meaningful learning experience, so that students' understanding of science materials can be achieved properly. Students' ability to master science concepts contributes to the achievement of their learning outcomes. Science learning classes must be able to create a scientific atmosphere in order to obtain optimal learning results.

Science subjects are a collection of exact sciences that discuss all the events of the universe and its contents. The breadth and complexity of science material means that the science learning process should not only be limited to the learning experience in the classroom, but needs

to be interpreted in daily activities [21]. The meeting between the theoretical reasoning of the science concept and the reality of science events encountered in life is the essence of a meaningful understanding of the science concept. Currently, a child's efforts to understand a concept require a good foundation of literacy skills [22]. In the context of science learning, this ability is called scientific literacy ability.

Science learning at UPT SPF SD Inpres Bontoa seems to be not optimizing students' scientific literacy skills. This is reflected in the science textbooks used by teachers in learning that only use worksheets. As a result, students' scientific literacy skills are less developed. Underdevelopment of scientific literacy skills is thought to be a factor causing students' difficulty in mastering science concepts optimally. [23] revealed that science learning difficulties occur due to weaknesses in understanding textbooks, misconceptions, minimal contextuality, and students' low reading ability.

In the 21st century, scientific literacy skills are needed by students. This is due to the phenomenon of the rapid progress of world science and technology which can be seen from the environment, challenges, or technological innovations. Thus, scientific literacy is needed to understand and deal with these changes [24]. Scientific literacy is the ability to utilize scientific knowledge, formulate questions, and draw conclusions based on scientific evidence. Scientific literacy is also seen as a participative ability towards scientific issues and ideas as a reflective society [25].

From the problems above, the author wants to make students able to have scientific literacy skills and improve science learning outcomes. According to the author, one of the learning models used in science learning in class V UPT SPF SD Inpres Bontoa, Tamalate District, Makassar City, so that students in science learning can develop scientific literacy skills and can also improve their learning outcomes with the RADEC model. [16] RADEC learning model (*Read, Answer, Discuss, Explain, Create*) is a learning model that requires human resources to have high skills. Based on this, the authors are interested in conducting research with the aim of knowing the effect of the RADEC Learning Model (Read, Answer, Discuss, Explain, Create) on Scientific Literacy, and Learning Outcomes of Class V UPT SPF SD Inpres Bontoa Kec Tamalate, Makassar City.

II. RESEARCH METHOD

1. Design and Type of Research

The type of research used in this research is quantitative research. In this study, using the type of research*quasi experiment* who has a group but cannot fully control the external variables that affect the implementation of the experiment [26]. This quasi-experimental research was used to determine differences in the ability of the class that was given treatment and the class that was not given treatment. Experimental research design used in the form*nonequivalent control group desain*. In this study two groups were not randomly selected. This design consists of two groups each given*pretest* and*posttest* which is then treated using a learning model*RADEC* and without using a learning model*RADEC*. Basically, a control group *nonequivalent* this is the same as the pure experimental design pretest and posttest control group except the placement of subjects was randomized.

2. Samples.

Sampling is done withuse sampling techniques*nonprobability sampling* with the technique taken, namely saturated sampling [27]. Qsampling techniqueto determine the sample when all members of the population are used as a sample. Therefore, the author chose a sample using a saturated sampling technique because the population is relatively small, based oncharacteristics orcharacteristics population thatalready known beforehand.The sample in this study were all students of Class V UPT SPF SDI Bontoa as many as 70 students consisting of two groups, namely VA class of 35 for students as an experimental class andVB as much as 35 students as the control class. The data collection techniques and research instruments are: tests, observations, and documentation

3. Data Analysis Techniques

The data analysis technique used in this study is divided into data analysis that must be prepared in this study for normality tests and homogeneity tests, these data are useful as conditions for hypothesis analysis [28]. Then in the next stage, hypothesis testing was carried out to determine the effectiveness of the variables in this study. In the data analysis step, this research was assisted by using software*SPSS* Version 25. Hypothesis test using Multivariate Covariance Analysis (*CHANGE*).

In this study the type of hypothesis used is a descriptive hypothesis. The statistical technique used to test the research hypothesis is the t-test technique which is tested as a result of the use and differences in results that occur between the two samples. In the analysis using*One-way Multivariate Analysis of Variance (One-way MANOVA)* through*SPSS* 25 to analyze the existing data.

III. RESEARCH RESULTS AND DISCUSSION

1. Descriptive Analysis

The data in this study came from processed data in the form of questionnaires and tests submitted to fifth grade students of UPT SPF SDI Bontoa Makassar. An overview of the research variables in this study to determine the effect of the Radec learning model on scientific literacy and learning outcomes, a descriptive statistical table is used which shows the numbers, median, average (mean), mode and standard deviation which can be presented below:

a. Science Literacy

Pretest given to students at the first meeting and*posttest* given to students at the last meeting. Results*prettest* and*posttest* then collected, examined and analyzed by researchers. Statistics of students' scientific literacy before being given treatment (*pretest* and*posttest*) in the table below:

Table 1 Descriptive Statistics of Scientific Literacy before and after being given treatment (*treatment*) or pretest and posttest in Experiment class and Control class

Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation
Pre Experiment	35	23	5	28	522	14.91	5.752
Experiment Post	35	28	70	98	2917	83.34	7.116
For Control	35	25	13	38	858	24.51	6.223
Post Control	35	35	25	60	1583	45.23	8.204
Valid N (listwise)	35						

(Source: Results of descriptive statistical data)

Based on the data in the table it is known that the control class has an average pretest score of 24.51. After not being given treatment, only in the form of conventional learning based on problems there was an increase in students' scientific literacy skills with an average posttest score of 45.23, and were in the low improvement category. Meanwhile, in the experimental class the average pretest value was 14.91, and given treatment using the RADEC learning model there was an increase in students' scientific literacy skills with an average posttest score of 83.34. The minimum and maximum values in the control class are the minimum values obtained which are 13 and the maximum values obtained are 38. While the posttest values for the minimum and maximum values are obtained the minimum values are 25 and the maximum values are 60.

Based on the data above, it can be seen that the pretest value in the experimental class treated with the RADEC learning model, namely the standard deviation value is 5,752 and the standard deviation value in the experimental class posttest value is 7,116. The minimum and maximum values in the experimental class are the minimum values obtained, which are 5 and the maximum values, which are 28. Meanwhile, the posttest values for the minimum and maximum values are obtained, the minimum values are 70 and the maximum values are 98.

a. Learning outcomes

1) Student Science learning outcomes before (*Pretest*) and after (*Posttest*) was given the treatment

Pretest given to students at the first meeting and*posttest* given to students at the last meeting. Results*prettest* and*posttest* then collected, examined and analyzed by researchers. Statistics of students' science learning outcomes before being given treatment (*pretest* and*posttest*) in the table below:

Table 2 Descriptive Statistics of Science Learning Outcomes before and after being given treatment (*treatment*) or pretest and posttest in Experiment class and Control class

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Experiment Pretest	35	35	5	40	17.51	8.067
Posttest Experiment	35	25	70	95	83.23	7.150
Pretest Kontrol	35	26	22	48	35.43	6.749
Posttest Control	35	25	30	55	41.57	6.617
Valid N (listwise)	35					

(Source: Results of descriptive statistical data)

Based on the data in the table, it is known that the control class has an average pretest score of 35.43. After not being given treatment in the form of conventional learning based on problems, there was an increase in students' science learning outcomes with an average posttest score of 41.57, and were in the low improvement category. Meanwhile, in the experimental class the average pretest score was 17.51, using RADEC learning there was an increase in students' science learning outcomes with an average posttest score of 83.23.

From the data above, it can be seen that the pretest value in the control class, the standard deviation value is 6,749 and the standard deviation value in the control class posttest value is 6,617. The minimum and maximum values in the control class are the minimum values obtained which are 22 and the maximum values obtained are 48. While the posttest values for the minimum and maximum values are obtained the minimum values are 30 and the maximum values are 55.

Based on the data above, it can be seen that the pretest value in the experimental class treated with the RADEC learning model, namely the standard deviation value is 8,067 and the standard deviation value in the experimental class posttest value is 7,150. The minimum and maximum values in the experimental class are the minimum values that are obtained 5 and the maximum values obtained are 40. Meanwhile, the posttest values for the minimum and maximum values are obtained with a minimum value of 70 and a maximum value of 95 in the high category.

2. Inferential Analysis

a. Normality test

The normality test was carried out to test whether the sample came from a normally distributed population or not. The normality test was carried out on the distribution of data for each control class and experimental class separately. The aim was to find out whether the samples taken from the control class or the experimental class were normally distributed or not. Statistical analysis used is test*Kolmogorov Smirnov* using the SPSS 25.0 program. The data requirements are normal if*probability* or p > 0.05 on the normality test*Kolmogorov Smirnov*. Explanation of each normality test can be seen as follows.

1) Science Literacy Normality Test Class V UPT SPF SDI Bontoa

The normality test on scientific literacy data was carried out to find out the distribution of data which was carried out as a requirement for the hypothesis that students' scientific literacy between the control class and the experimental class was not different, in the absence of differences, research could be carried out on both classes. The normality test was carried out to find out the distribution of data as a condition for the hypothesis of the control class and the experimental class. The results of the normality test for students' scientific literacy data can be seen in table 4.8 as follows:

Table 3 Scientific Literacy Normality Test for Control Class and Class V Experiment Class UPT SPF SDI Bontoa

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk	
	Class	Statistic	df	Say.	Statistic	df
Science Literacy	Experiment Pretest	.146	35	.055	.961	35
	Posttest Eksperimen	.101	35	.200*	.977	35
	Pretest Kontrol	.114	35	.200*	.976	35
	Posttest Control	.131	35	.139	.959	35

(Source: Results of descriptive statistical data)

Based on Table 4.8, it can be seen that the distribution of scientific literacy data using SPSS 25.0 from 35 students in the control class and the experimental class is normally distributed or meets the normality test requirements because the Sig level value is > 0.05. The calculation of the normality test using*Kolmogorov-Smirnov* can be seen in full in the table above, it is stated that it meets the normality test requirements.

2) Test for Normality of Class V Science Learning Outcomes UPT SPF SDI Bontoa

The normality test on the science learning outcomes data was carried out to find out the distribution of the data which was carried out as a requirement for the hypothesis that the science learning outcomes between the control class and the experimental class were not different, in the absence of differences, research could be carried out on both classes. The normality test was carried out to find out the distribution of data as a condition for the hypothesis of the control class and the experimental class. The results of the normality test for science learning outcomes data can be seen in table 4.9 as follows:

Table 4 Normality Test of Science Learning Outcomes Control Class and Class V Experiment Class UPT SPF SDI Bontoa Makassar

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk	
	Class	Statistic	df	Say.	Statistic	df
Learning outcomes	Experiment Class Pretest	.137	35	.096	.934	35
	Experiment Class Posttest	.148	35	.051	.938	35
	Control Class Pretest	.098	35	.200*	.975	35
	Control Class Posttest	.165	35	.017	.934	35

(Source: Results of descriptive statistical data)

Based on Table 4, it can be seen that the distribution of data on science learning outcomes using SPSS 25.0 from 35 students in the control class and the experimental class is normally distributed or meets the normality test requirements because the Sig level value is > 0.05. The calculation of the normality test using*Kolmogorov-Smirnov* can be seen in full in the table above, it is stated that it meets the normality test requirements.

b. Homogeneity Test

The homogeneity test or similarity test of two variances aims to find out whether the two data are homogeneous or not by comparing the two variances. Homogeneity testing was carried out on the distribution of data from both classes, namely the control class and the experimental class simultaneously, the aim was to find out whether the variances of the two class data were homogeneous or not. The test used is the homogeneity of variance test. Homogeneity testing is done by analysis*Test of Homogeneity of Varians* through the SPSS 25.0 program. Homogeneous requirements if probability (Sig) > 0.05 and if*probability*(*Say*) < 0.05 then the data is not homogeneous. The homogeneity requirement test is carried out. The explanation for each homogeneity test is as follows;

Table 5 Science Literacy Homogeneity Test for Class V Control and Experiment Class V UPT SPF SDI Bontoa Makassar

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Say.
Science Literacy	Based on Mean	1.594	3	136	.194
	Based on Median	1.393	3	136	.248
	Based on Median and with adjusted df	1.393	3	117.364	.248
	Based on trimmed mean	1.573	3	136	.199

(Source: Results of descriptive statistical data)

Based on the table above, it is done to find out whether the two data are homogeneous or not. This is done as a prerequisite for the hypothesis that the control class and the experimental class are homogeneous. If the test results show that both variances are homogeneous, then research can be carried out on the two classes. The homogeneity test on the data is carried out to determine whether the variance is homogeneous or not. This is done as a prerequisite for hypothesis testing. From Table 5 it is known that both data have a significance > 0.05 so that the two data have the same or homogeneous group variance. The data above shows that it is significantly greater than 0.05 and is categorized as homogeneous

Table 6 Homogeneity Test of Class V Control Class and Experiment Class V UPT SPF SDI Bontoa Makassar

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Say.
Learning outcomes	Based on Mean	.370	3	136	.775
	Based on Median	.365	3	136	.778
	Based on Median and with adjusted df	.365	3	121.699	.778
	Based on trimmed mean	.367	3	136	.777

(Source: Results of descriptive statistical data)

Based on the table above, it is done to find out whether the two data are homogeneous or not. This is done as a prerequisite for the hypothesis that the control class and the

experimental class are homogeneous. If the test results show that both variances are homogeneous, then research can be carried out on the two classes. The homogeneity test on the data is carried out to determine whether the variance is homogeneous or not. This is done as a prerequisite for hypothesis testing. From Table 4.11 it is known that both data have a significance > 0.05 so that the two data have the same or homogeneous group variance. The data above shows that it is significantly greater than 0.05 and is categorized as homogeneous.

c. Uji Manov

In the hypothesis prerequisite test, it has been fulfilled, then it can proceed to the MANOVA test. The results of the MANOVA test decisions are taken from the analysis*Pillae Trace, Wilk Lambda, Hotelling's Trace, and Roy's Largest Root*. This analysis was carried out with the help of SPSS 25.0, namely by*General Linear Model-Multivariate*. The results are as follows:

Tabel 7 Uji Manova Multivariate Tests

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df
Intercept	Pillai's Trace	.990	3270.739[b]	2.000	67.000
	Wilks' Lambda	.010	3270.739[b]	2.000	67.000
	Hotelling's Trace	97.634	3270.739[b]	2.000	67.000
	Roy's Largest Root	97.634	3270.739[b]	2.000	67.000
Learning model	Pillai's Trace	.930	447.533[b]	2.000	67.000
	Wilks' Lambda	.070	447.533[b]	2.000	67.000
	Hotelling's Trace	13.359	447.533[b]	2.000	67.000
	Roy's Largest Root	13.359	447.533[b]	2.000	67.000

(Source: Results of descriptive statistical data)

Table 7 shows the results of the Multivariate significance test. The results of the analysis show that the price of class F for*Pillae Trace, Wilk Lambda, Hotelling's Trace, and Roy's Largest Root* has a significance value of 0.000 <0.05. This shows that the price of F for*Pillae Trace, Wilk Lambda, Hotelling's Trace, and Roy's Largest Root* all significant. So it can be concluded that there is a significant influence of the Radec learning model between class variables on scientific literacy and student learning outcomes.

Discussion

Based on the results of the analysis of the Manova test, there is an influence of the Learning Model*Radec* on scientific literacy and learning outcomes of Class V UPT SPF SDI Bontoa Makassar students who show a significance value of 0.000. 0.000 < 0.05 then□□ rejected and□□ accepted. Based on this, it can be concluded that there is a significant influence on the use of the Learning Model*Radec* on scientific literacy and science learning outcomes UPT SPF SDI Bontoa Makassar.

This research also supports other research that has been done before, namely research conducted by [29] with the title The Influence of the RADEC Model on Thematic Learning on Learning Outcomes of Elementary School Students. The research results show thatThe average in the pre-test in the experimental class was 44.05263, after applying the RADEC learning model the post-test was 82.47. The control class obtained an average of 44.15 in the pretest and post-test after being taught using a conventional approach of 69.5. After the t-test was carried out, it was obtained tcount = 3.68 and ttable 1.68709 with a significance level of 0.05. Thus tcount = 3.68 > ttable = 1.68709, it can be concluded that the effect of the RADEC model was found on the learning outcomes of elementary school students with the theme of our friend's environment. According to [30] the RADEC learning model (Read, Answer, Discuss, Explain, Create) is a learning model that requires human resources to have high skills. As a learning model, RADEC has steps (syntax) in the implementation process. This is also related to teacher creativity in research [31] which suggests that teachers need to have the ability or creativity in learning.

IV. CONCLUSION

Based on research conducted at UPT SPF SDI Bontoa Makassar, it can be concluded that the Radec Learning Model: Students' Scientific Literacy Through Learning Models*Radec* Class V UPT SPF SDI Bontoa Makassar was obtained obtained a standard deviation of8.204 in the control class posttest results and the standard deviation in the experimental class after treatment (posttest) is7.116 based on the results of SPSS 25.0, there is a mean value of scientific literacy in the control class and experimental class45.23 and 83.34. Where for the control class an average maximum score of 60 was obtained and for the experimental class a maximum value of 98. Student Science Learning Outcomes Through the Learning Model*Radec* the minimum and maximum values obtained in the control class posttest results obtained 30 and 55 with a standard deviation of 6.617 and a mean value obtained of 41.57. whereas in the experimental class after being treated with the Radec learning model the minimum score was 70 and the maximum score was 95 with a standard deviation of 7,150 and the mean value obtained in the experimental class after being given the Radec learning model was 83.23. Learning model*Radec* on scientific literacy and science learning outcomes of Class V UPT SPF SDI Bontoa Makassar City results of the manova test of scientific literacy and student learning outcomes show a significance value of 0.000. 0.000 < 0.05 then□□ rejected and□□ accepted. Based on this, it can be concluded that there is a significant influence on the use of the Learning Model*Radec* on scientific literacy and science learning outcomes UPT SPF SDI Bontoa Makassar.

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Volume 6, Number 2, July 2023, Page 148-155
e-ISSN: 2623-0232 ; p-ISSN: 2623-0941

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