



Hak Cipta Dilindungi Undang-Undang

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State Islamic University of Sultan Syarif Kasim Riau

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## CHAPTER 3

### THE RESEARCH METHODOLOGY

The research is correlation research because this research is to find out the relationship of two variables. They are; students' prior knowledge that is symbolized by "X" is as independent variable and as dependent variable is the students' reading interest that is symbolized by "Y".

#### A. The Location and Time of the Research

The location of this research was SMA Negeri 3 Pekanbaru, which is located in JL. Yossudarso, Pekanbaru. This school is one of the State High School in Pekanbaru with National Accreditation. This research was conducted on August 2015.

#### B. The Subject and Object of the Research

The subject of this study was the second year students of SMA Negeri 3 Pekanbaru. Meanwhile, the object of this study was the students' prior knowledge and reading interest.

#### C. The Population and Sample

The second year students at SMA Negeri 3 Pekanbaru were the population of this research, consisting 300 students classified into 10 classes from XI1 until

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XI10. The classes were divided into two majors (Science and Social). Five of ten classes were Science and the rest were Social. Most of the students here are Moslem and few of them are Cristian and Khatolic with middle economic family to high economic family.

**Table III. 1**  
**The Total Population of the second year students at SMA Negeri 3 Pekanbaru**

No.	Classes	Total
1	XI 1	35
2	XI 2	36
3	XI 3	34
4	XI 4	33
5	XI 5	36
6	XI 6	35
7	XI 7	36
8	XI 8	34
9	XI 9	35
10	XI 10	36
	Total	350

The population above was large enough to be all taken as sample of the research. The writer took the sample by using cluster sampling. Based on the limitation of the research, According to Gay in *Educational Research Competencies for Analysis and Application Sixth Edition*, Cluster sampling randomly selects group, not individuals. All the members of selected groups have similar characteristic. It means that the subject of this research had the same material, the same grade, and the same teacher in teaching these classes. Memillian in *Educational Research: Fundamentals for the Consumer Second Edition* also stated that cluster sampling involves the random selection of

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naturally occurring groups or areas and then the selection of individual elements from the chosen groups or areas. As the result, the writer took XI. IPA 1 by rolling up the paper of classes' name and chose it randomly.

#### D. The Technique of Collecting Data

In order to get the data needed to support this study, the writer used the techniques as follows :

##### 1. Prior Knowledge

The writer used test to obtain the students' prior knowledge and the test was in the form of true false question.

**Table III.2**  
**Blue Print of Prior Knowledge Test**

No.	Indicators	Item Number
1	Identifying familiarity	1,3,5,7,9,11,13,15,17,19
2	Guessing the context of the question	2,4,6,8,10,12,14,16,18,20

After the students did the test, the writer then took total score from the result of prior knowledge test. The classification of the students' score is as follows:

**Table III.3**  
**The Classification of Students' Score**

Score	Category
80-100	Very Good
66-79	Good
56-65	Enough
40-55	Less
30-39	Fail

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## 2. Reading Interest

For collecting the data, the writer used questionnaire. This questionnaire consisted of some questions for the respondents. It was 20 items that were representative statement of students' interest. The questionnaire was given once. According to Likert, Likert scale is the most widely used scale in survey research and certainly the one that has found its way into popular culture. The classic use of the Likert scale was to pose questions or items to participants and have them respond using an agreement scale by selecting a number that best represented their response. It will deal with the respondents' opinion in answering the following options:

Strongly agree	Agree	Disagree	Strongly Disagree
4	3	2	1

**Table III.4**  
**Blue print of Reading Interest**

Variable	Sub Variable	Indicators	Ite
Reading Interest	Expressed Interest	like to read English.	1,
		love to read English with friends.	2, 4
		enjoy to read English.	7,
		proud of reading English.	9,
		happy to read English correctly like	12,
	Manifested Interest	practice to read English.	5,
		Doing the English written exercise.	3,
		joining English reading activities.	15,
		remember and read English words.	8,
	read English.	6,	

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## E. The Technique of Data Analysis

In order to find out whether there was analyzed by a significant correlation between students' prior knowledge towards reading interest, the data were analyzed statistically. There was significant correlation or there was no significant correlation between two or more variables that can be analyzed by using product moment correlation (Hartono 2010:177). The formula is as follows:

$$r = \frac{n \sum XY - \sum X \sum Y}{\sqrt{[n \sum X^2 - (\sum X)^2][n \sum Y^2 - (\sum Y)^2]}}$$

Where:

- r = Index of correlation "r" product moment
- n = Sample
- ( $\sum xy$ ) = The sum of score x and y
- ( $\sum x$ ) = The total of score x
- ( $\sum y$ ) = The total of score y

Meanwhile, in order to get easy in analyzing the data, the writer used SPSS 16.0 program for Windows. The product moment correlation coefficient was obtained by considering the degree of freedom (df) = N-nr; (N= number of sample, nr = number of variable)

Statistically the Hypotheses are:



$$H_a : r_o > r_{table}$$

$$H_o : r_o \leq r_{table}$$

$H_a$  is accepted if  $r_o > r_{table}$  or there is a significant correlation between the students' prior knowledge and their reading interest.

$H_o$  is accepted if  $r_o \leq r_{table}$  or there is no significant correlation between the students' prior knowledge and their reading interest.

## F. Validity and Reliability of Instrument

### 1. Validity

Creswell (2008:169) stated that validity is the individual's scores from an instrument that makes sense, meaningful, enables you, as the writer, to draw good conclusions from the sample you are studying to the population. It means that validity is the extent to which inferences made from assessment results are appropriate, meaningful, and useful in terms of the purpose of the assessment. An instrument is valid if it is able to measure what must be measured.

#### a. Test Validity

The test given to the students was considered not too difficult or not too easy. According to Arikunto (2006: 208) the test is accepted if the degree of difficulty is between 0.30 – 0.70. It was determined by

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finding the difficulty level of each item. The formula for item of difficulty is as follows Suharsimi (2012:245)

$$P = \frac{B}{JS}$$

Where P : index of difficulty or facility value

B : the number of correct answers

JS : the number of examinees or students taking the test

The difficulty level of an item shows how easy or difficult a particular item in the test. The items that do not reach the standard level of difficulty are excluded from the test and they are changed with the new items that are appropriate.

According to Arikunto (2012:210), the standard level of difficulty used is  $>0,30$  and  $<0,70$ . It means that the item test that is accepted if the level of difficulty is between 0.30-0.70 and it is rejected if the level of difficulty is below 0.30 (difficult) and over 0.70 (easy). Then, the proportion correct is represented by “p”, whereas the proportion incorrect is represented by “q”.

**Table III.5**  
**The students are able to identify familiarity**

Variable	Identifying familiarity										N	
	1	3	5	7	9	11	13	15	17	19		
Item no												
Correct	23	24	22	23	23	21	25	22	23	22	36	

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P	0.639	0.667	0.611	0.639	0.639	0.583	0.694	0.611	0.639	0.611	
Q	0.361	0.333	0.389	0.361	0.361	0.417	0.306	0.389	0.361	0.389	

Based on the table III.5, the proportion of correct answer for item number 1 shows the proportion of correct 0.64, item number 3 shows the proportion of correct 0.67, item number 5 shows the proportion of correct 0.61, item number 7 shows the proportion of correct 0.64, item number 9 show the proportion of correct is 0.64, item number 11 shows the proportion of correct is 0.58, item number 13 show the proportion of correct is 0.69, item number 15 shows the proportion of correct is 0.61, item number 17 shows the proportion of correct is 0.64, and item number 19 shows the proportion of correct is 0.61. Based on the standard level of difficulty “p”  $<0.30$  and  $>0.70$ , it is pointed out that item difficulty level of each item number for identifying familiarity is accepted.

**Table III.6**  
The students are able to guess the context of the question

Variable	Guessing context										N
	2	4	6	8	10	12	14	16	18	20	
Item no	23	24	24	23	21	21	22	22	23	22	36
Correct	0.639	0.667	0.667	0.639	0.583	0.583	0.611	0.611	0.639	0.611	
P	0.361	0.333	0.333	0.361	0.417	0.417	0.389	0.389	0.361	0.389	
Q											

Based on the table III.6, the proportion of correct answer for item number 2 shows the proportion of correct 0.64, item number 4 shows the



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proportion of correct 0.67, Item number 6 shows the proportion of correct 0.67, item number 8 shows the proportion of correct 0.61, item number 10 shows the proportion of correct is 0.58, item number 12 shows the proportion of correct is 0.58, item number 14 shows the proportion of correct is 0.61, item number 16 shows the proportion of correct is 0.61, item number 18 shows the proportion of correct is 0.64 , and item number 20 shows the proportion of correct is 0.61. Based on the standard level of difficulty “p”  $<0.30$  and  $>0.70$ , it is pointed out that item difficulty level of each items number for guessing the context of the questions is accepted.

#### b. Questionnaire Validity

According to Gay (2008:163), there are three kinds of validity. They are content validity, criterion-related validity, and construct validity. In this research, the writer used construct validity. Siregar (2013:77) described that construct validity means the validity that relates to the ability of instrument to measure the concept of being measured. Non-test instrument which is used to measure the attitude include in construct validity.

To analyze the validity of the data, the writer used Ms Excel Program. The writer used the item analysis in which the item scores are



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correlated with the total scores. According to Sugiyono (2011:187), the item of questionnaire is valid if  $r = 0.3$ .

Based on the try out result of the instrument validity to the 20 items, it showed that all items were valid. It means that there were 20 items used in this research.

## 2. Reability

According to Brown (2004:19), that reliability has to do with accuracy of measurement. This kind of accuracy was reflected in obtaining similar results when measurement was repeated on different occasions or with different instruments or by different persons. The characteristic of reliability was sometimes termed consistency. It means that we can say the test was reliable when an examinee's results were consistent on repeated measurement.

### a. Test reliability

The reliability coefficient for good test was expected to exceed 0.0 and closed 1.00. Heaton (1988:164) states that, the reliability of the test was considered as follows:

1. **0.0 – 0.20 = Reliability is low**
2. **0.21 – 0.40 = Reliability is sufficient**
3. **0.41 – 0.70 = Reliability is high**
4. **0.71 – 1.0 = Reliability is very high**

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According to Sugiyono (2011: 359) to obtain the reliability of the test given, the writer used the formula as follows:

$$KR20: ri = \frac{n}{(n-1)} \frac{s^2 - \sum pq}{s^2}$$

Where:

n : number of items on the instrument

P : proportion of subjects who answered the item correctly

Q : proportion of subject who answered the item wrong (1-P)

$\sum pq$  : Multiplication result between p and q

$S^2$  : total variance

Firstly, the writer calculates the total variance:

$$s^2 = \frac{x^2}{n}$$

Where:

n : number of respondents

$$\begin{aligned} x^2 &= \sum xt^2 - \frac{(\sum xt)^2}{n} \\ &= 6121 - \frac{(459)^2}{36} \\ &= 6121 - \frac{210681}{36} \end{aligned}$$

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$$= 6121 - 5852,25$$

$$= 268.75$$

$$s^2 = \frac{268,75}{36}$$

$$= 7.47$$

$$r_i = \frac{k}{(k-1)} \frac{s^2 - \sum pq}{s^2}$$

$$r_i = \frac{20}{(20-1)} \frac{7.47-4.43}{7.47}$$

$$r_i = \frac{20}{19} \frac{3,04}{7,47}$$

$$r_i = 1.05 \times 0.41$$

$$r_i = 0.4305$$

Based on the result above, it can also be stated that the reliability was **high**.

#### b. Questionnaire reliability

The following table is the level of internal consistency of Cronbach Alpha:

**Table III. 7**  
**A Commonly Accepted Rule of Thumb for Describing Internal Consistency by Using Cronbach Alpha**

Cronbach Alpha	Internal Consistency
>0.90	Very highly reliable
0.80 - 0.90	Highly reliable

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0.70 – 0.79	Reliable
0.60 – 0.69	Minimally reliable
<0.60	Unacceptably low reliability

To obtain the reliability of the questionnaire given, the writer used SPSS 16.0 program to find out whether or not the questionnaire is reliable.

**Table III.8**  
**Reliability Statistics**

Cronbach's Alpha	N of Items
.700	20

From the table above, it can be seen that the value of cronbach's alpha is 0.700. Then, the writer compared  $r_{11}$  to  $r_t$ . The  $r_{11} = 0.700$  is higher than  $r_t$  at significance level of 5%, is 0.361 and at 1% level of significance is 0.463 where  $r_t$  ( $dk = N - 1 = 30$ ). It means that the items are reliable, where the value of internal consistency is  $0.79 > 0.700 > 0.70$ , so the reliability of questionnaire was reliable.