CHAPTER III
RESEARCH METHOD

This study investigated the effect of reading on incidental vocabulary acquisition through reading online newspapers. The subjects were the third semester students at the English education study program of IAIN Palangka Raya because of their learning is learning based internet. The purposes of the study are: 1) To measure the effect of reading online newspaper toward students’ vocabulary acquisition incidentally by the third semester students at the English education study program of IAIN Palangka Raya; 2) To describe the third semester students’ attitudes at the English education study program of IAIN Palangka Raya towards vocabulary acquisition incidentally through reading English texts and online newspapers. This chapter discusses the method of the study related to research design, research type, population and sample, time and place, research instruments, data collection procedures, and data analysis.

A. Research Type

This study used a quantitative design because this study concerned with the effect of reading online newspapers to students’ vocabulary acquisition incidentally, then to gather the data the researcher used numerical data. In quantitative research, research design are classified into three broad categories, (1) descriptive research designs, (2) relationship research designs, (3) experimental research designs.51

---

The quantitative approach to the study of social and behavioral phenomena holds that the aim and methods of the social sciences are, at least in principle, the same as the aim and methods of the natural or physical sciences. Quantitative research more typically relies on measurement tools such as scales, tests, observation checklists, and questionnaires. Quantitative research is explaining phenomena by collecting numerical data that are analyzed using mathematically based methods (in particular statistics).

B. Research Design

The research design used in this study was experimental research design, especially quasi-experimental. Experimental research measures the effect of one manipulated and controlled (independent) variable to another (dependent) variable. There are several types of experimental research, some of them are true experimental, quasi-experimental, and pre-experimental. Then, quasi-experimental designs are use when random selection of groups cannot be achieved. However, the control group and the experimental group are matched as nearly as possible. If a control group is not used, then parallel groups are experimented on to compare the consistency of the outcomes. The results of these designs are not as reliable as true experimental designs.

There were two groups in this study, the first group is control class and the second group is experimental class. Both groups were given pre-test to

---


54 Mohammad Adnan Latief. *op. cit.* p. 93


measure the students’ score before treatment given. Then, the treatment was given for experimental class. After that, post-test was given for both groups to measure the students’ score after the treatment given. Thus, the researcher made a table about description of experiment research class as follows:

### Table 3.1
The Description of Experiment Research Class

<table>
<thead>
<tr>
<th>Group</th>
<th>Type of Treatment</th>
<th>Pre-test</th>
<th>Independent Variable</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>Online Newspapers</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Class</td>
<td>(Authentic reading Material)</td>
<td>Y₁</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Class</td>
<td>Textbook (Non-</td>
<td></td>
<td>_</td>
<td></td>
</tr>
<tr>
<td></td>
<td>authentic reading</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Material)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Where:

- $Y₁$: Pre-test
- $X$: Treatment
- $Y₂$: Post-test

Note:

Variable (X) is independent variable, in this case, reading online newspapers. Then, variable (Y) is dependent variable which is incidental vocabulary acquisition.
C. Population and Sample

1. Population

According to Ary, et al., population is defined as all members of any well-defined class of people, events, or objects.\textsuperscript{57} According to Borg, W. R & Gall, M.D in Muhammad Adnan Latief, that target population in educational research usually is defined as all the members of a real or hypothetical set of people, events, or objects to which educational researchers wish to generalize the results of the research.\textsuperscript{58}

Population of this study is all of the third semester students at the English education study program of IAIN Palangka Raya. The number of population is about 45 students.

<table>
<thead>
<tr>
<th>No.</th>
<th>Interpretive Reading Class</th>
<th>The Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Class A</td>
<td>16</td>
</tr>
<tr>
<td>2.</td>
<td>Class B</td>
<td>16</td>
</tr>
<tr>
<td>3.</td>
<td>Class C</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>45</td>
</tr>
</tbody>
</table>

Table 3.2

The Number of The Third Semester Students at The English Education Study Program of IAIN Palangka Raya

Where:
- Class A : Tryout class
- Class B : Control class
- Class C : Experiment class

\textsuperscript{57} Donald Ary, et al. op. cit. 148
\textsuperscript{58} Mohammad Adnan Latief. op. cit. p. 181
2. Sample

According to Ary, et al., sample is a small group that is observed which is a portion of a population.59 Charles, C.M. state in Muhammad Adnan Latief, defines a sample as a small group of people selected to represent the much larger entire population from which it is down. The sample for Junior High School students taking national English examination in Malang are some of those students taking the national English examination.60

The population of the study is all of the students of English Study Program at State Islamic Institute of Palangka Raya academic year 2015/2016. The number of population is about 45 students. It is classified into three classes.

Cluster sampling, according to Ary, et al., is where the unit chosen is not an individual but, rather, a group of individuals who are naturally together.61 Thus, the samples were class B and C. Class B become the control class, class C became the experimental class, and class A become try out class for instrument of the test.

D. Time and Place

This study conducted for two months include doing the try out, taking the data, and interpreting the data. It will take place in English Education Study

59 Donal Ary, et al., loc.cit p. 148
60 Mohammad Adnan Latief. op. cit. p. 181
61 Donal Ary, et al., op. cit. p. 154
Program in State Islamic Institute of Palangka Raya, located in St. G. Obos 9, Complex Islamic Center Palangka Raya, Central Kalimantan, Indonesia.

E. Research Instruments

1. Research Instruments

a. Test

In this study, the researcher used vocabulary levels test to answer the first question. In this test consists of unknown words to be tested, where the text adopted from Jakarta Post which related with the students environments. The total numbers of the target words were 60 words: noun (26), verb (19), adjective (14), and adverb (1). The test used twice, before and after the students read the texts, as a pre- and post-test. The pre-test is administered at the first meeting, then reading session take place one week after pre-test (next meeting) about 2 times meeting. The post-test is administered after reading session, exactly after it and they have no opportunity to look back at the text. According to Nation, this administration as forgetting occurs most rapidly immediately after the initial learning, it was assumed that a post-test administered immediately after the reading would show inflated results.\textsuperscript{62} Penguin series of graded readers is limited according to this scale:

\textsuperscript{62} Nina Dascalovska. \textit{op.cit}. p.205
Table 3.3
Penguin Series of Graded Readers

<table>
<thead>
<tr>
<th>Level</th>
<th>Number of words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easystarts</td>
<td>200</td>
</tr>
<tr>
<td>level one Beginner</td>
<td>300</td>
</tr>
<tr>
<td>level two Elementary</td>
<td>600</td>
</tr>
<tr>
<td>level three pre-Intermediate</td>
<td>1200</td>
</tr>
<tr>
<td>level four Intermediate</td>
<td>1700</td>
</tr>
<tr>
<td>level five upper-Intermediate</td>
<td>2300</td>
</tr>
<tr>
<td>level six advanced</td>
<td>3000</td>
</tr>
</tbody>
</table>

Beside that, According to Hu & Nation the students have to know 98% coverage of various kinds of text. When the students has 98% coverage of a text, adequate unassisted comprehension is possible.\(^{63}\)

According to Nation and Beglar the vocabulary size test samples from the most frequent 14,000 words families of English. The test consists of 140 items (10 from each 1000 word level).\(^{64}\)

Rubric scoring based on Seyed Jafar Ehsanzadeh’s study, as follows:

Table 3.4
Scoring Rubric

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct answer</td>
<td>1</td>
</tr>
<tr>
<td>Incorrect answer</td>
<td>0</td>
</tr>
<tr>
<td>Maximum score</td>
<td>60</td>
</tr>
</tbody>
</table>

So, from the table above, because of the correct point is 1 and the incorrect is 0, so the score were:

Minimum score: 0 x 1 = 0

Maximum score: 60 x 1 = 60


\(^{64}\) Ibid. p.11
According to Nation and Beglar 10 item each 1000 words level, thus graded scale, as illustrated below:

<table>
<thead>
<tr>
<th>Correct answer</th>
<th>Word level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10</td>
<td>100 – 1000</td>
</tr>
<tr>
<td>11-20</td>
<td>1100 – 2000</td>
</tr>
<tr>
<td>21-30</td>
<td>2100 – 3000</td>
</tr>
<tr>
<td>31-40</td>
<td>3100 – 4000</td>
</tr>
<tr>
<td>41-50</td>
<td>4100 – 5000</td>
</tr>
<tr>
<td>51-60</td>
<td>5100 – 6000</td>
</tr>
</tbody>
</table>

(University level = <5000 words level)

b. Questionnaire

Questionnaire is an instrument in which respondents provide written responses to questions or mark items that indicate their response.  

Questionnaire is a written instrument consisting of questions to be answered or statements to be responded by respondents. It is used to gather information about fact or about opinion/attitude.

The researcher will use Likert scales to measure the students’ attitudes toward vocabulary acquisition incidentally through reading. Likert scale consist of a series of statement all of which are related to

---

66 Mohammad Adnan Latief. op. cit. P. 193.
particular target (which can be among others, an individual person, a
group of people, an institution, or a concept). This instrument adapted from Wilaiwan Lebkatem’s thesis, any five-
point Likert scale from “strongly agree” to “strongly disagree”
questionnaire was used to determine the subjects’ attitudes towards
learning words through reading English text and newspaper.

The questionnaire is to find the data from the five-point rating
scale were calculated for means and standard deviations. The ranges of
the mean scores for each level are employed for interpreting the level of
agreement presented as follows.

\[
\begin{align*}
4.21 - 5.00 &= \text{Strongly agree} \\
3.41 - 4.20 &= \text{Agree} \\
2.61 - 3.40 &= \text{Moderately agree} \\
1.81 - 2.60 &= \text{Disagree} \\
1.00 - 1.80 &= \text{Strongly disagree}
\end{align*}
\]

Beside that, this data is concerned on attitudes towards any object or on any
issue varied along the same underlying negative-to-positive dimension. To reflect
the students’ position on that dimension is illustrated below:

---

68 Wilaiwan Lebkatem. *op. cit.* p. 112-113
2. **Research Instruments Try Out**

The try out of instrument was conducted in class A on Wednesday, 14\textsuperscript{th} September 2016 with the number of student was 13 students from 16 students because 3 students were absent. The researcher analyzed the test instruments to gain the information about the instruments quality that consists of instrument validity and instrument reliability. The procedures of the try out as follows:

a. The researcher give try out to the students.

b. The researcher give score to the students’ answer, then the researcher interpreted the result of data to know the instruments validity, instruments reliability, index of difficulty and discrimination power.

c. After that, the researcher tested the test for the real sample.

3. **Research Instruments Reliability**

The reliability of a measuring instrument is the degree of consistency with which it measures whatever it is measuring. This quality is essential
in any kinds of measurement \textsuperscript{69}. Afterwards, on a theoretical level, reliability is concerned with the effect of error on the consistency of scores. Thus, the high level of credibility if the score is consistent.

The researcher used Kuder-Richardson 21 (KR-21) formula. According to Ary, et al, Kuder-Richardson procedures Kuder and Richardson (1937) developed procedures that have been widely used to determine homogeneity or internal consistency. There are two formulas, KR-20 and KR-21. In this study, the researcher will use KR-21 because KR-20 cannot be calculated by computer. KR-21 is computationally simpler but requires the assumption that all items in the test are of equal difficulty.\textsuperscript{70} The formula for KR-21 as follows:

\[
\hat{r}_{xx} = \frac{KS_{x}^{2} - \bar{X}(K - \bar{X})}{S_{x}^{2}(K - 1)}
\]

Where:

\( \hat{r}_{xx} \) = reliability of a whole test

\( K \) = number of items in the test

\( s_{x}^{2} \) = varian of the score

\( \bar{X} \) = mean of the score

The steps in determining the reliability of the test were:

a. Making tabulating of testes’ scores.

\textsuperscript{69} Donal Ary, et al. \textit{op.cit} p.236

\textsuperscript{70} Donal Ary, et al. \textit{ibid.} p. 245
b. Measuring the mean of the testes’ scores with the formula:

\[ M = \frac{\sum Y}{N} \]

c. Measuring the total variants with the formula:

\[ V_t = \frac{\sum Y^2 - (\sum Y)^2}{N} \]

- \( V_t \) = the total variants
- \( \sum Y \) = the total of score
- \( \sum Y^2 \) = the square of score total
- \( N \) = the number of testes


e. The last decision is comparing the value of \( \Gamma_{11} \) and \( \Gamma_i \).

f. Knowing the level of reliability of instrument, the value of \( \Gamma_{11} \) was interpret based on the qualification of reliability as follows:

\[ \Gamma_{11} > \Gamma_{table} = \text{Reliable} \]
\[ \Gamma_{11} < \Gamma_{table} = \text{Not Reliable} \]

To interprete the reliability of instrument, the researcher used the criteria of reliability as shown below:

<table>
<thead>
<tr>
<th>Reliability</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.800-1.000</td>
<td>Very High Reliability</td>
</tr>
<tr>
<td>0.600-0.799</td>
<td>High Reliability</td>
</tr>
<tr>
<td>0.400-0.599</td>
<td>Fair Reliability</td>
</tr>
</tbody>
</table>
0.200-0.399 | Poor Reliability
0.000-0.199 | Very Poor Reliability

From the measurement of instrument try out reliability it is known that the whole numbers of test items are reliable and can be used as the instrument of the study.

4. Research Instruments Validity

Validity was defined as the extent to which an instrument measured what it claimed to measure\textsuperscript{71}.

a. Content Validity

According to Heaton, a good test should possess validity: that is it should measure what is intended to measure and nothing else.\textsuperscript{72} The test must be valid if its content was related to what students learned. The test based on the students’ need that contains unfamiliar words suitable with their material in the classroom. The content specification of items test, as illustrated below:

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Question/Definition</th>
<th>Source</th>
<th>Key Answer</th>
<th>Part of speech</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>of or connected with the making and distribution of medicine</td>
<td>Paragraph I</td>
<td>Pharmaceutical</td>
<td>Noun</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>a place from which an organization is controlled</td>
<td>Paragraph I</td>
<td>Headquarters</td>
<td>Noun</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>not genuine</td>
<td>Paragraph II</td>
<td>Fake</td>
<td>Verb</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>not genuine</td>
<td>Paragraph III</td>
<td>Counterfeit</td>
<td>Verb</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>to say or show that one is unwilling to give, accept or do something</td>
<td>Paragraph IV</td>
<td>Refused</td>
<td>Verb</td>
</tr>
</tbody>
</table>

\textsuperscript{71} Donal Ary, et al., \textit{ibid.}, p.225
\textsuperscript{72} Evriana Asmara. \textit{Op. Cit.} p. 48
<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Question</th>
<th>Source</th>
<th>Key Answer</th>
<th>Part of speech</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>13</td>
<td>the practice of having slaves</td>
<td>Paragraph II</td>
<td>Slavery</td>
<td>Noun</td>
</tr>
<tr>
<td>2</td>
<td>14</td>
<td>a child’s nurse</td>
<td>Paragraph III</td>
<td>Nanny</td>
<td>Noun</td>
</tr>
<tr>
<td>3</td>
<td>15</td>
<td>the state of being forced to work for others and having no freedom</td>
<td>Paragraph III</td>
<td>Servitude</td>
<td>Noun</td>
</tr>
<tr>
<td>4</td>
<td>16</td>
<td>wrong or excessive use of one’s power, position, etc</td>
<td>Paragraph III</td>
<td>Abused</td>
<td>Noun</td>
</tr>
<tr>
<td>5</td>
<td>17</td>
<td>very distressing</td>
<td>Paragraph IV</td>
<td>Harrowing</td>
<td>Adjective</td>
</tr>
<tr>
<td>6</td>
<td>18</td>
<td>to succeed in creating a particular feeling or attitude in oneself or in other people</td>
<td>Paragraph IV</td>
<td>Mustering</td>
<td>Verb</td>
</tr>
<tr>
<td>7</td>
<td>19</td>
<td>the ability to control fear when facing danger, pain, opposition, etc</td>
<td>Paragraph IV</td>
<td>Courage</td>
<td>Noun</td>
</tr>
<tr>
<td>8</td>
<td>20</td>
<td>to become free</td>
<td>Paragraph IV</td>
<td>Escape</td>
<td>Verb</td>
</tr>
<tr>
<td>9</td>
<td>21</td>
<td>to end the existence of a law, practice, and institution</td>
<td>Paragraph IV</td>
<td>Abolish</td>
<td>Verb</td>
</tr>
<tr>
<td>10</td>
<td>22</td>
<td>to express approval or admiration for somebody or something</td>
<td>Paragraph V</td>
<td>Praised</td>
<td>Verb</td>
</tr>
<tr>
<td>11</td>
<td>23</td>
<td>to keep somebody in a place from which they want to move but cannot</td>
<td>Paragraph VII</td>
<td>Trapped</td>
<td>Verb</td>
</tr>
<tr>
<td>12</td>
<td>24</td>
<td>a women servant in a large house</td>
<td>Paragraph VII</td>
<td>Housemaid</td>
<td>Noun</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
<td>to allow something to be seen</td>
<td>Paragraph I</td>
<td>Revealed</td>
<td>Verb</td>
</tr>
<tr>
<td>2</td>
<td>26</td>
<td>to give somebody/something a particular name</td>
<td>Paragraph II</td>
<td>Dubbed</td>
<td>Verb</td>
</tr>
<tr>
<td>3</td>
<td>27</td>
<td>a member of cabinet</td>
<td>Paragraph III</td>
<td>Minister</td>
<td>Noun</td>
</tr>
<tr>
<td>4</td>
<td>28</td>
<td>that can be obtained or used</td>
<td>Paragraph IV</td>
<td>Available</td>
<td>Adjective</td>
</tr>
<tr>
<td>5</td>
<td>29</td>
<td>to show something</td>
<td>Paragraph IV</td>
<td>Indicate</td>
<td>Verb</td>
</tr>
<tr>
<td>6</td>
<td>30</td>
<td>to help something to develop; to stimulate something</td>
<td>Paragraph VI</td>
<td>Encourage</td>
<td>Verb</td>
</tr>
<tr>
<td>No.</td>
<td>Item</td>
<td>Question</td>
<td>Source</td>
<td>Key Answer</td>
<td>Part of speech</td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>----------</td>
<td>-----------------</td>
<td>------------</td>
<td>----------------</td>
</tr>
<tr>
<td>7</td>
<td>31</td>
<td>to cover or make something cover a large or increasing area</td>
<td>Paragraph VI</td>
<td>Spread</td>
<td>Verb</td>
</tr>
<tr>
<td>8</td>
<td>32</td>
<td>that can not be stopped or prevented</td>
<td>Paragraph VI</td>
<td>Unstoppable</td>
<td>Adjective</td>
</tr>
<tr>
<td>9</td>
<td>33</td>
<td>financial resources</td>
<td>Paragraph VI</td>
<td>Fund</td>
<td>Noun</td>
</tr>
<tr>
<td>10</td>
<td>34</td>
<td>spreading easily from one person to another</td>
<td>Paragraph VI</td>
<td>Contagious</td>
<td>Adjective</td>
</tr>
<tr>
<td>11</td>
<td>35</td>
<td>to give something to somebody or something</td>
<td>Paragraph VII</td>
<td>Submit</td>
<td>Verb</td>
</tr>
<tr>
<td>12</td>
<td>36</td>
<td>coming before in time</td>
<td>Paragraph VII</td>
<td>Prior</td>
<td>Adjective</td>
</tr>
<tr>
<td>1</td>
<td>37</td>
<td>a table or small shop with an open front from which things are sold in a market, in a railway station, etc</td>
<td>Paragraph I</td>
<td>Stall</td>
<td>Noun</td>
</tr>
<tr>
<td>2</td>
<td>38</td>
<td>celebration; happiness and enjoyment</td>
<td>Paragraph I</td>
<td>Festivity</td>
<td>Noun</td>
</tr>
<tr>
<td>3</td>
<td>39</td>
<td>a place where people agree to meet</td>
<td>Paragraph III</td>
<td>Venue</td>
<td>Noun</td>
</tr>
<tr>
<td>4</td>
<td>40</td>
<td>food cooked in a certain style</td>
<td>Paragraph V</td>
<td>Cuisine</td>
<td>Noun</td>
</tr>
<tr>
<td>5</td>
<td>41</td>
<td>any type of drink except water</td>
<td>Paragraph V</td>
<td>Beverage</td>
<td>Noun</td>
</tr>
<tr>
<td>6</td>
<td>42</td>
<td>a thing that makes time pass pleasantly</td>
<td>Paragraph V</td>
<td>Amusement</td>
<td>Noun</td>
</tr>
<tr>
<td>7</td>
<td>43</td>
<td>likely to attract or occupy the attention, charming</td>
<td>Paragraph V</td>
<td>Engaging</td>
<td>Adjective</td>
</tr>
<tr>
<td>8</td>
<td>44</td>
<td>to make sure of something</td>
<td>Paragraph VI</td>
<td>Ensure</td>
<td>Verb</td>
</tr>
<tr>
<td>9</td>
<td>45</td>
<td>done without advance preparation, practice or thought</td>
<td>Paragraph VII</td>
<td>Impromptu</td>
<td>Adjective</td>
</tr>
<tr>
<td>10</td>
<td>46</td>
<td>an area of short, regularly cut grass in the garden of a house or in a public park</td>
<td>Paragraph VII</td>
<td>Lawn</td>
<td>Noun</td>
</tr>
<tr>
<td>11</td>
<td>47</td>
<td>a thing passed to somebody by people who lived before them or from earlier events</td>
<td>Paragraph VIII</td>
<td>Legacy</td>
<td>Noun</td>
</tr>
<tr>
<td>12</td>
<td>48</td>
<td>cloth decorated with patterns sewn in thread or various</td>
<td>Paragraph VIII</td>
<td>Embroidery</td>
<td>Noun</td>
</tr>
<tr>
<td>1</td>
<td>49</td>
<td>to become or make something stricter</td>
<td>Paragraph I</td>
<td>Tightened</td>
<td>Verb</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
<td>a sudden appearance or start of something</td>
<td>Paragraph I</td>
<td>Outbreak</td>
<td>Noun</td>
</tr>
<tr>
<td>3</td>
<td>51</td>
<td>to start something</td>
<td>Paragraph III</td>
<td>Launch</td>
<td>Verb</td>
</tr>
<tr>
<td>4</td>
<td>52</td>
<td>quick to notice things and to think or act</td>
<td>Paragraph III</td>
<td>Alert</td>
<td>Adjective</td>
</tr>
<tr>
<td>5</td>
<td>53</td>
<td>a sign of the existence of</td>
<td>Paragraph IV</td>
<td>Symptom</td>
<td>Noun</td>
</tr>
</tbody>
</table>
b. Face Validity

To face validity of the test items as follows:

1) The unfamiliar words based on the online newspapers and the
definition based on the oxford dictionary.

2) Language was used English

3) The test items were suitable with the course outline of interpretive
reading class

c. Construct Validity

To test the construct validity of the questionnaire, factor analysis was
used by correlating score item of instrument by using Pearson product
moment formula as follow.\(^{73}\)

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

Where:

\( r \) = correlation coefficient

\( \Sigma X \) = total score of an item

\( \Sigma Y \) = total score of all items

\( n \) = number of respondent

After gathering the results \( r_{11} \), the researcher interprets the result by using coefficient correlation interpretation table as bellow:

<table>
<thead>
<tr>
<th>Coefficient correlation interpretation</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high</td>
<td>0.800 – 1.00</td>
</tr>
<tr>
<td>High</td>
<td>0.600 - &lt;0.800</td>
</tr>
<tr>
<td>Reasonable</td>
<td>0.400 - &lt;0.600</td>
</tr>
<tr>
<td>Low</td>
<td>0.200 - &lt;0.400</td>
</tr>
<tr>
<td>Very low</td>
<td>0.00 - &lt;0.200</td>
</tr>
</tbody>
</table>

If the score item upper or equal with 0.400, the item is valid and acceptable. But, if the score item under 0.400, the item is invalid and unacceptable.

F. Data Collection Procedures

In this study, the researcher collected the data from pre-post test and questionnaire.

1. The researcher prepared the instruments test, those are pre-post test and questionnaire.

2. The researcher did try out the instruments test to the tryout class.
3. The researcher calculated the result of tryout to find the reliability and validity of test.

4. After found the reliability and validity of test, the researcher applied it in the experimental class and control class.

5. The researcher determined the class into experimental class and control class.

6. The researcher gave pre-test to the experimental class and control class before treatment.

7. The researcher gave treatment to experimental class using online newspaper.

8. The researcher gave post-test to the experimental class and control class after treatment.

9. The researcher gave questionnaire to experimental class at the end of meeting.

10. The researcher calculated, analyzed and interpreted the result of test and questionnaire.

11. The researcher drew conclusion from the data finding and theories about Incidental Vocabulary Acquisition through Reading Online Newspaper by The Third Semester Students at The English Education Study Program of IAIN Palangka Raya

G. Data Analysis

The data of this study were the students’ score of pre-test, post-test and questionnaire. Therefore, the data were quantitative. In this case, the
researcher used \( t_{\text{test}} \) to solve the research problems of this study about Incidental Vocabulary Acquisition in Reading Online Newspaper by The Third Semester Students at The English Education Study Program of IAIN Palangka Raya. In order to analyzed the data, the researcher did some way procedures, as follows:

1. Tabulated the data into the distribution of frequency of score table, then found out the mean of students’ score, standard deviation, and standard error of variable X1 (experimental class) and X2 (control class) by using the formulas below:

   a. Mean of students’ score : \( \bar{X} = \frac{\sum FX_i}{n} \)

   Where:
   \( \sum FX_i \) = total of score
   \( n \) = total of the students

   b. Standard Deviation

   \( S = \sqrt{\frac{n \sum Fx_i^2 + (\sum Fx_i)^2}{n(n-1)}} \)

   c. Standard Error

   \( SE_{md} = \frac{S}{\sqrt{n-1}} \)

   Where:
   \( S \) = Standard deviation
   \( n_1 \) = the number of the experimental group
   \( n_2 \) = the number of the control group
   \( SE_{md} \) = Standard error
N= Number of Case
d. Normality Test

It is used to know the normality of the data that is going to be analyze whether both groups have normal distribution or not. Chi square was used.

\[ X^2_{observed} = \sum_{i=1}^{k} \frac{(f_o - f_e)^2}{f_e} \]

Where:

- \( X^2_{observed} \) = Chi square
- \( f_o \) = frequency from observation
- \( f_e \) = expected frequency

Calculation result of \( X^2_{observed} \) was compared with \( X^2_{table} \) by 5% and 1% degree of significance. If \( X^2_{observed} \) was lower than \( X^2_{table} \) so the distribution list was normal.

Then, in this study, the researcher used **One-Sample Kolmogorov-Smirnov Test** to test the normality.

e. Homogeneity Test

It is used to know whether experimental group and control group, that were decided, come from population that has relatively same variant or not. The formula was:

\[ X^2_{observed} = (\log 10)x (B - \sum(dk) \log S^2_i) \]

Where:

- \( B = (\log S^2_i)x \sum(n_i - 1) \)
Notice:

\[ X^2_{\text{observed}} \leq X^2_{\text{table}} \] is homogeneity.

\[ X^2_{\text{observed}} \geq X^2_{\text{table}} \] is not homogeneity.

If calculation result of \( X^2_{\text{observed}} \) was lower than \( X^2_{\text{table}} \) by 5% degree of significance, it meant both groups had the same variant.

In this study, the writer used Levene Test Statistic to test the homogeneity of variance.

f. Calculated the data by using \( t_{\text{test}} \) to test the hypothesis of the study, whether the using of online newspaper gave effect to the students’ vocabulary acquisition scores or not. To examined the hypothesis, the researcher used \( t_{\text{test}} \) formula as follows:

\[
t_{\text{observed}} = \frac{M_{n_1} - M_{n_2}}{\sqrt{\frac{(n_1 - 1) S_1^2 + (n_2 - 1) S_2^2}{n_1 + n_2 - 2} \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}}
\]

Where:

- \( M_{n_1} = \) the mean score of experimental group
- \( M_{n_2} = \) the mean score of control group
- \( S_1^2 = \) variance of experimental group
- \( S_2^2 = \) variance of control group
- \( n_1 = \) total of experimental group students
- \( n_2 = \) total of control group students

To know the hypothesis was accepted or rejected using the criterion: If \( t_{\text{observed}} \) (the value) \( \geq t_{\text{table}} \), it means \( H_a \) is accepted.
and Ho is rejected. If $t_{\text{observed}} \leq t_{\text{table}}$, it means Ha is rejected and Ho is accepted.

In this study, the researcher used **Paired Sample T Test** to test the hypothesis was accepted or not.

g. Interpreted the result of $t$ test. Previously, the researcher accounted the degrees of freedom ($df$) with the formula:

$$df = (N_1+N_2-2)$$

Where:

df: degrees of freedom

$N_1$: Number of subject group 1

$N_2$: Number of subject group 2

2: Number of variable

After that, the value of $t_{\text{test}}$ will be consulted on the $t_{\text{table}}$ at the level of significance 1% and 5%. If the result of $t_{\text{test}}$ was higher than $t_{\text{table}}$, it meant $H_a$ was accepted. But if the result of $t_{\text{test}}$ was lower than $t_{\text{table}}$, it means $H_o$ was accepted.

h. The researcher made the conclusion of data analysis obtained.

i. In addition, the researcher used SPSS 18.00 program to compare the data.

j. Discussed and conclude the result of data analysis.