# Using Herringbone Technique to Improve the Reading Comprehension Ability of the Students of SMU Bhakti Ibu 1 Palembang

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**Abstract:**

*This study was conducted to find out whether there was a significant difference between reading comprehension ability of students who were taught by using Herringbone technique and those who were taught by using the traditional approach. The method used was experimental method. The instrument for collecting the data was a reading comprehension test. It was given to subjects before and after the experiment. The subjects chosen for this study were 40 second year students of SMU Bhakti Ibu 1 Palembang. They were divided into two groups : experimental and control group. Based on the findings, the results of t-test and interpretations, the following conclusions were drawn : (1) Herringbone technique was applicable to improve students' ability in reading comprehension, and (2) there was a significant difference between reading comprehension ability of students who were taught by using Herringbone technique and those who were taught by using the traditional approach. It was evidenced by the calculation of t-test.*

*Keywords : herringbone technique, reading comprehension ability*

*Penelitian ini dilakukan untuk mengetahui apakah ada perbedaan yang signifikan antara kemampuan membaca pemahaman siswa yang diajarkan dengan menggunakan teknik Herringbone dan mereka yang diajar dengan menggunakan pendekatan tradisional . Metode yang digunakan adalah metode eksperimen . Instrumen untuk mengumpulkan data adalah tes pemahaman bacaan . Itu diberikan kepada subjek sebelum dan sesudah percobaan . Subyek dipilih untuk penelitian ini adalah 40 siswa tahun kedua SMU Bhakti Ibu 1 Palembang . Mereka dibagi menjadi dua kelompok : kelompok eksperimen dan kontrol . Berdasarkan temuan , hasil uji t dan interpretasi , kesimpulan berikut diambil : ( 1 ) teknik Herringbone itu berlaku untuk meningkatkan kemampuan siswa dalam memahami bacaan , dan ( 2 ) ada perbedaan yang signifikan antara kemampuan membaca pemahaman dari siswa yang diajarkan dengan menggunakan teknik Herringbone dan mereka yang diajar dengan menggunakan pendekatan tradisional . Hal itu dibuktikan dengan perhitungan t -test .*

*Kata kunci : teknik herringbone , kemampuan membaca pemahaman*

## BACKGROUND

Reading is one of the macro skills to be mastered b learners of English as a foreign language. In Indonesia, reading has an important role in learning activity. The 1994 English curriculum for Senior High School states that the objective of teaching English in Indonesia is to enable the student to communicate in English including the ability to read, speak, listen, and write that are taught integratedly.

The other components of language like vocabulary, pronunciation, grammar, and spelling are taught to support the development of those four language skills. In other words, the goal of teaching English is to enable the students to use English as a means of communication both in spoken and written forms.

Since most of scientific books are printed in English, perhaps we will agree that in this globalization era, reading has an important role so that it should be taught seriously to

high school students. There are so many reasons why it is important for the students of high school to be able to read in English. It is expected that by mastering reading skill, the students are able to absorb the information written in English, expand their knowledge in science, technology, arts and cultures, and develop good relationship among other nations.

According to Tierney et al,.[1] "for many students, the quantity of information contained with in a twenty-page content chapter can be over whelming". By provider structure, a content teacher can assist students in remembering the important information in the chapter.

Reading is one of the skills that should be learned and mastered, but in reality students skill have problems in learning it. In other words, although the students have studied reading for six years, they still cannot read with understanding.

From the questioners that the writer already gave to the students, it was found that the students had difficulties in understanding what each reading was about; what the main ideas were; and what were discussed in each reading.

According to Cooper[2], in teaching and learning process, the teachers of English should consider some teaching strategies that can be used to accomplish a desired outcome. Certain reading strategies are expected to be more suitable (to use) to stimulate reflection, discussion, evaluation and intelligent selection of instructional procedures than others. Well known strategies of teaching are Echo Reading, Choral Reading, Radio Reading, Paired Storytelling and Herringbone technique (Tierney, Readence, and Dishner[3], 1980: xi).

Additionally, the teacher should provide some activities that can guide the students to develop their reading comprehension by applying flexible approaches he or she wants to use. Gunning[4] states discussing, predicting, and interpreting are not only done before reading but also during and after reading activities. By doing these activities, the students will be involved in reading activities, therefore, they can also practice their ability in speaking, listening, and writing.

There are various reading techniques that can be applied in teaching reading. One of them is Herringbone technique. This technique, according to Tierney et al.[5], is a structured outlining procedure designed to help students organize important information in a text chapter. In this technique the learners are trained to develop comprehension of the main idea through the use of visual diagram of a fish skeleton. The diagram enables the students to plot who, what, when, where, how and why questions. Using the answer to these questions the students write the main idea on the diagram. The writer has observed that most of the second year students of SMU Bhakti Ibu 1 are still poor in reading comprehension. Maybe their weaknesses are caused by the methodology of TEFL, especially the technique in teaching reading that it used in the schools. They use traditional technique, which has steps: (1) the teacher writes the passage on the board and reads it orally, (2) the teacher asks the students if they have difficult words, writes them on the board, and discussed them, (3) the teacher reads the words from top to the bottom and followed by the students, (4) the teacher asks the students to read the passage paragraph by paragraph, (5) the teacher explains some sentences used in the text, (6) the teacher asks the students to answer the comprehension question.

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[1] Tierney, Readence, and Dishner, *Reading Strategies and Practices, Guide for Improving Instruction*, Boston, MA: Allyn and Bacon, Inc, 1980, xi.
[2] Cooper, *Literacy: Helping Children to Construct Meaning*, Boston, MA, Houngton Mifflin Company, 1993, 135.
[3] Tierney, Readence, and Dishner, *Reading Strategies and Practices, Guide for Improving Instruction*, Boston, MA: Allyn and Bacon, Inc, 1980, xi.
[4] Gunning, *Creating Reading Instrument for All Children*, Boston, MA, Allyn and Bacon, Inc, 1992, 245.
[5] Tierney, Readence, and Dishner, *Reading Strategies and Practices, Guide for Improving Instruction*, Boston, MA: Allyn and Bacon, Inc, 1980, xi.

Therefore in this study, the writer tries to apply the herringbone technique in teaching reading comprehension. The writer assumes that the herringbone technique can help students organize important information in a text and can improve their reading ability. Hopefully, the activities of the reading approach discussed in this study will be one of the alternatives for English teacher of SMU Bhakti Ibu 1 Palembang in improving the activity of teaching and learning English, especially in teaching and learning reading in order to develop the students' achievement in reading comprehension.

Is the Herringbone technique effective for teaching reading comprehension. As far as the writer knew there was no systematic information on the use of this technique in Palembang; therefore it was necessary to make an experiment in teaching reading comprehension using the Herringbone technique and the result was written in the form of a scientific report entitled, "Using Herringbone Technique to Improve the Reading Comprehension Ability of the Students of SMU Bhakti Ibu 1 Palembang".

The objective of this study was to find out whether there was a significant difference between reading comprehension ability of students who are taught by using herringbone technique and those who are taught by using Traditional technique.

This study was expected to bring out some significant results. The possible significance that can be expected was a follows (1) it is expected that the use of Herringbone technique might be one of the usable ways to support the development of English teaching and learning in general and in teaching reading in particular, (2) the result of the research can be used for enrichment of TEFL methodologies for teaching reading in Indonesia, (3) it is also expected that Herringbone technique would be applied as one of the alternatives by English teachers in improving the activity of teaching reading and learning English, especially in teaching reading in order to meet the students' need and improve their achievement in reading comprehension.

## LITERATURE REVIEW

### Concept of Reading Comprehension

According to Bromley[6], reading comprehension in an active cognitive process that requires the construction of meaning from incoming information and prior knowledge. When students are teamed with reading material for which they recognize and know the majority of words, their chances of successful comprehension are greatly increased.

Meanwhile, Cochran[7] states that reading comprehension is defined as getting meaning from the printed word. As Farr (1989) cited in Cochran (1993) describes it, that meaning can be both public and private. The public meaning occurs when the reader obtains the same information that the author intended to convey. The private meaning is the personal understanding that the written material has for reader.

### Concept and Principle of Herringbone Technique

The Herringbone technique, so named because it resembles a fish skeleton, is useful for analyzing a single idea. You ask of the main idea Who?, What?, When?, Where?, Why?, and How?. Tienrey et al.[8], state that the Herringbone technique is a structured outlining procedure designed to help students organize important information in a text chapter and it is intended for use with students in the fourth through twelve grade levels. The procedure

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[6] Bromley, *Language Arts: Exploring Connections*, Boston, MA, A Division of Simon & Schuster, Inc, 1992, 209.

[7] Cochran, *Reading in the Content Areas for Junior High and Senior High School*, Boston, MA, Allyn and Bacon, 1993, 120.

[8] Tierney, , Readence, and Dishner, *Reading Strategies and Practices, Guide for Improving Instruction*, Boston, MA: Allyn and Bacon, Inc, 1980, xi.

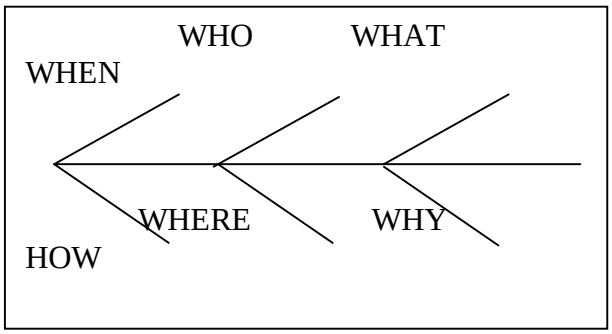
appears most appropriate for those students whose reading levels are below the difficulty level of the adopted text. The students are instructed that they will be seeking the answers to the questions and will be recording their answers on the Herringbone pattern as they read the chapter.

According to Steele[9] the Herringbone pattern is used for synthesizing information after pre-reading or skimming, a chapter. Pre-reading is an important tool for understanding what each reading is going to be about, what the main ideas are going to be, and for getting a general idea of what will be discussed in each reading. When students take the time to pre-read they are better prepared to read and understand the information presented in a text. After the students have been sufficiently prepared for learning the information within the chapter and after they understand the structure of the form, they are ready to begin the reading and recording process.

Walker[10] states that the Herringbone technique develops comprehension of the main idea through the use of a visual diagram of a fish skeleton. The diagram enables the student to plot WHO, WHAT, WHEN, WHERE, HOW and WHY questions. The student writes the main idea on the diagram.

*The technique is implemented by*:

1. An appropriate reading level expository text is selected.
2. A visual diagram of herringbone is provided below.




(Source: Tierney et al.[11], 1989: 83)

3. The student reads to find the answers to the following questions and records them on a larger version of the diagram above:
   a. WHO was involved? (Answer should yield the name of one or more persons or groups.)
   b. WHAT did this person or group do?
   c. WHEN was it done (the event discovered in question 2)?
   d. WHERE was it done?
   e. HOW was it accomplished?
   f. WHY did it happen?
4. After the student has recorded his answers to the questions, he uses the information to write a sentence about the main idea. The tutor should guide the student through this process until the student is able to do it independently. Younger students might dictate their answers to the tutor who could copy them for the student.
5. The diagram is then used as a tool for discussion of the material.

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[9] Steele, *Four Reading Strategies for High School Students*, http://litsite.alaska.edu/uaa/workbooks/readingstrategies, accessed on October 24, 2002.

[10] Walker

[11] Tierney, Readence, and Dishner, *Reading Strategies and Practices, Guide for Improving Instruction*, Boston, MA: Allyn and Bacon, Inc, 1980, xi.

**Importance of Reading Ability**

Ideally, students should spend their time more in order to read their books or non printed material such as the internet, etc in relation to their study. This action could increase their ability, at least their ability in reading. The ability to read is classified into three (Harjasujana; 1998 cited in Sujiadi[12], 2000); independent reader, instructional reader, and frustration reader. It is called *independent reader* if the students' test score on reading is more than 60%, between 41% to 60% is called *instructional reader*, and less than 40% is called *frustration reader*.

Research study shows that reading activity could increase student ability. Suciadi[13] (2000) states that the students' ability is getting better through a certain reading technique. He conducted one of the junior high school in Kupang applying group cloze technique. He found out the progress after giving the treatment. There were only 50% of 48 students got below than 60, but significant improvement appeared after the second treatment, more than 53,5% of students could comprehend 95% of the texts.

Another researcher found out that reading activity support ones' education. Silviany[14] (2002) has conducted a survey on SARLC (Self-Access Reading and Learning Center) which provided a lot of books, electronic media so that the reader could access the sources freely. The survey focused on the 30 respondents included graduate students, undergraduate students, and others. From the survey she found out most of them made some progress in their study as the consequence doing a lot of reading.

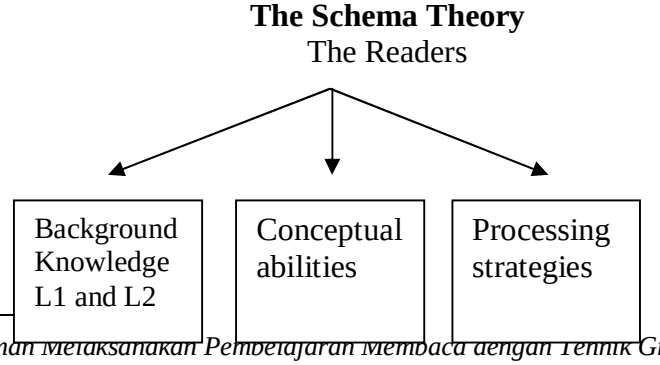
**Reading Strategy**

It is important to know the strategy in reading activity. According to Hornby[15] in this activity readers looking at and understanding the meaning of the written or printed words or symbols on the text. In this process the reader needs to comprehend written information from what are being read. Understanding the written language needs eye movement and background knowledge Finocchiaro[16] states that interact with student innate conceptual abilities.

Background knowledge, conceptual abilities, and processing strategies functioned to give meaning to spoken or written texts. However, someone could understand and interpret oral or written expressions without having the three things mentioned above.

In line with this, Finocchiaro[17] calls the relationship among those three as schema theory as follows:

**The Schema Theory**




[12] Sujiadi, *Pengalaman Melaksanakan Pembelajaran Membaca dengan Teknik Group Cloze Siswa Kelas III SLTP Negeri 3 Kupang*, Pelangi Pendidikan, 2000, 32.
[13] Sujiadi, Op.cit.,
[14] Silviany, *Developing adult EFL Reading Through Intensive and Extensive use of SARLC*, Research, Palembang, Sriwijaya University, 2002.
[15] Hornby, *Oxford Advanced Learner Dictionary*, 6th, ed, Oxford, Oxford University Press.
[16] Finocchiaro, *English as a Second Language Foreign Language*, 4th, ed, Englewood Cliffs, NJ, Prentice Hall Regents, 1989, 113.
[17] Finocchiaro, Loc. Cit.

Top Down Processing
(conceptual driven)

Bottom-up Processing)
(data driven)

According to this theory, whatever the learners read the text or oral communication, they should retrieve the knowledge already saved in their memory and then they formed the meaning form knowledge background with new information. Whatever the readers interpret in the process of reading, knowledge structure (schemata) should have relationship with new input.

On the longer text or paragraph, schemata formed hierarchically from the most specific (at the bottom) to the most general (at the top). For example, readers read from sentences, topic and general idea. On the other way round, top-down process occur from the general prediction to the more detail information.

Reading also needs recognition word by work, sentence by sentence so that readers could comprehend the whole text. Cluster of words being read in the text formed special meaning. That meaning and then is connected with reader prior knowledge, as the consequence it draws conclusion.

The process of reading, (Wolf[18], 1998) involves answering questions about how printed word is recognized. To know the words in context whether familiar or not it necessary. The familiar words support the process of comprehending the text. It is impossible to grasp the message in the text if it contains many unfamiliar words.

Current approach to reading (Feuberstein & Schcolnic[19], 1995) put the emphasizes on the process rather than the product of reading. This approach focuses on what the reader actually does while reading. The process involves interaction between the reader and the text. The text provides new information which will eventually become part of reader's stock of knowledge.

It needs a great number of cognitive skills and strategies while reading activity occur. These strategies facilitate the reader to interact with the text. They assist the reader to make logical connection, analyze the text, and put element together. It be simplified that the process of reading involved sampling portion of the text, making the necessary connection, making hypotheses about subsequence section and testing these hypotheses.

Being a good reader demands steps in reading. At first the reader make prediction while doing reading activity. The prediction should be revised if it is necessary. When the reader found specific information from the text she or he should scan it. And then sequencing sentences or paragraph. After that locating misplace information. The next step, identifying the reason and result in cause-effect relationship. To make it more clearly, identifying the main ideas and supporting details of paragraph or section. Whenever the reader found examples in the text, locating them that illustrate generalizations. At the last, recapitulating what the reader knows so far.

## RESEARCH PROCEDURES

### Design of Study

[18] Wolf, *A Psycholinguistic Account of Reading*, In Jean Berko Gleason & Nan Berstein Ratne, (eds), Psycholinguistics, (2nd.ed), 1998, 409.

[19] Feuberstein & Schcolnic, *Enchancing Reading Comprehension*, San Fransisco, CA, Alta Book Centre, 1995.

In doing this study, the writer used true experimental research, because it was constructed through an experiment with an experimental group and a control group. The researcher used the pre-test post-test control group design. The sample were divided into to groups: experimental and control group. The experimental group was given a treatment, i.e., English teaching through Herringbone technique, whereas the control group was taught reading through a technique that was different from experimental group. This was called traditional technique, the technique that is usually used by teachers of SMUBhakti Ibu 1 Palembang to teaching reading comprehension.

Both groups were given a pre-test before the treatment and a post-test after the treatment. These were conducted to know the student' reading ability. According to Hatch and Farhady (1982: 22) true experimental design have three basic characteristics: (1) a control group is present, (2) the students are randomly selected and assigned to the groups, and (3) a pre-test is administered to capture the initial differences between the groups……. pre-test post-test control group design has two groups. An experimental group which receives the special treatment and a control, which does not.

The design of this study is diagrammed as follows:

| | | |
|---|---|---|
| G1 (random) | T1 | X T2 |
| G2 (random) | T2 | T2 |

(Source: Hatch and Farhady, 1982: 22)

Where:

X : Treatment for the experimental group which refers to Herringbone technique
G1 : Experimental group
G2 : Control group
T1 : Pre-test
T2 : Post-test

**Experimental Procedures**

The experimental was conducted within 16 meeting in 6 weeks. The first meeting was used for giving the pre-test, meanwhile the last meeting was used for giving the post-test, and others were used for experiment.

In doing the experiment, the writer asked the teachers of English of the school itself to apply the technique. The writer divided 2 meetings for tests and 14 meetings for the experiment. Each meeting took one hour. The materials for both groups were the same, however, their applications were different. For the experimental group, the materials were taught by following the Herringbone technique procedures as mentioned previously. On the other hand, the teacher used traditional technique procedures when they taught the students of the control group. The result of student' test and their statistical analysis are discussed in the next chapter.

**Herringbone Technique**

The Herringbone technique was applied by giving the students a short amount of time to skim a passage, and then have them fill the Herringbone Pattern with the main ideas of the passage, by answering the questions: What is the main idea? Who is speaking? What is reading talking about? When did it occur? How was it done this way? Students write phrases answering these questions on the diagonal lines designated by each questions. The following is an example of the activities.

**The Century's Greatest Man in Science**

In 1879, when Albert Einstein was 15, his father lost money and could not support him any longer. Other boys would have left school and stopped studying. Not Albert. He left

school for some time, but the later managed to go to a better school, the Polytechnic in Zurich, Switzerland.

On leaving the institute, he discovered that no one would offer him the kind of job the wanted. At last he found a suitable one at the patient office in Bern. Einstein's task at the patent office was to make an investigation of the new products sent to his office. The job did not require much of Einstein's time, so he was able to write scientific article. He published these in 1905. Scientists were surprised by what he had written. They were even more surprised when they knew that these articles, which could have been written by a university professor, were actually written by an official at a patent office.

Investigation were made and it was decided that the official should be taken from the patent office and given a more suitable job. A few years later, Einstein became a professor at the University of Zurich. In 1911 he taught in Prague, and later at the Polytechnic Institute in Switzerland, where he had been a student. Then he was requested to move to Berlin.

Einstein stayed in Berlin for 20 years, from 1913 to 1933. During that period he worked on this famous. Theory of Relativity. He gave a simple example, in a simple language, to explain the idea of relativity. A man riding on a train drops a stone out of the window. To the man on the trains, it seems stone does not seem straight. It looks like a parabola. The theory expands those of Newton and Galileo, which are correct only under certain conditions.

Einstein made very important contributions in the field of physics world. The Nobel Prize the he won in 1921 at the age of 42 was no surprise to the scientific world. No scientist beat him in his field. What beat him was time. He died in Princeton in the USA in 1955. People believed that he was the century's greatest man of science.

(Adapted from LKS "TUNTAS")

In the passage "The Century's Greatest Man of Science" students recorded the following information on their form:

Who ? Albert Einstein
What ? Scientist
When ? 1879
1905
Where ? Zurich, Switzerland
How ? -
Why ? His father lost money and could not support him any longer.

As with this example, Tienrey (1980) states that textbook authors often do not provide all the information necessary to answer all the questions. In some instances the particular bit of information may not be important; the Herringbone form provides students and teachers alike with visible display of information gaps.

After the students had recorded the following information, the teacher asked them to fill the Herringbone Pattern. Then students and teacher discuss about what they had done. Finally, the teacher asked the students to answer the comprehension question from the passage that given by the teacher.

**Traditional Technique**

The traditional technique refers to the technique that was usually used by teachers of English of SMU Bhakti Ibu 1 Palembang to teaching reading comprehension. In relation to the technique, Fuersten and Scholnik (1994) state that

> The traditional technique to reading comprehension is the product the correct answer as the end. The student is expected to understand and sometimes remember factual information provided by a text. A reader might be expected for example to answer questions such as "Whom did John meet? When? Where? Sometimes the text is used merely as a context for grammatical

structure. Such a text is likely to be followed by an instruction like this: "Find examples of the present perfect tense in the story and explain their use.

In the actual experiment, this technique was applied to the control group students. Richards and Rodger (1986) cited in Astuti (1993) mention 10 steps or procedures of teaching reading comprehension by using traditional technique. They are as follows:

1. The teacher gives instruction to the students in order to make them ready for receiving the new lesson that will be given.
2. The teacher reviews the previous structure and vocabulary that have been learnt.
3. The teacher asks the students to open their book or writes the passage on the board and reads it orally.
4. The teacher asks the students whether they have difficult words, writes them on the board, and discusses them.
5. The teacher reads the words from top to the bottom and the students follow her/him.
6. The teacher asks some students to read the passage paragraph by paragraph.
7. The teacher explains the new vocabularies in the passage one by one. First, he/she writes the new vocabularies on the board, then pronounce them once or twice and asks the students to repeat her/him. Finally, the teacher explains the meanings of the words and makes some sentences.
8. The teacher explains the structure used in the passage.
9. If the teacher finds that the students still have difficulties, she/he explains them once more.
10. The teacher asks the students to answer the comprehension.

In the experiment, the teacher applied either Herringbone technique or traditional technique to teaching reading comprehension by using teaching materials taken from many sources. The teaching media used by the teachers in the experiment were pictures and worksheet. Those were used to help the students understand the teaching materials given.

**Sample**

The sample of the study comprised 40 students taken from the population. It was taken randomly from 120 students – 20 students for experimental group and 20 students for control group. The description of the total number of the sample is shown in Table 2.

**TABLE 2: THE DISTRIBUTION OF THE TOTAL NUMBER OF THE SAMPLE**

| Number | Class | Female | Male | Total |
|---|---|---|---|---|
| 1 | 2.1 | 4 | 6 | 10 |
| 2 | 2.2. | 7 | 3 | 10 |
| 3 | 2.3 | 6 | 4 | 10 |
| 4 | 2.4 | 3 | 7 | 10 |
| **Total** | **4 classes** | **20** | **20** | **40** |

In selecting the students the writer used the lottery system. She wrote the students' names on small pieces of paper and rolled them up. Then, the writer took randomly 10 papers from each class. So, the number of the sample were 40 students that were divided into two groups: A and B. Group A was the experimental group that was taught through Herringbone technique. Group B was the control group taught through traditional technique.

**Variables and Operational Definition**

As mentioned previously, there were two variables in this study. Those are defined operationally as follows:

(1)Herringbone technique is defined as the rechnique reading comperhension. This technique develops comprehension of the main idea through the use of visual diagram of fish skeleton. The diagram enables the student to plot WHO,WHAT, WHERE, HOW AND WHY QUESTIONS. The skeleton was made by teacher on the board.
(2)Students' ability in reading comprehension is operationally defined as the students' proficiency or achievement in comprehending a reading text. This is measures by providing a reading comprehension test in order to know the students' scores.

**Techniques for Collecting Data**

In collecting the data the writer used tests which included a pre-test and a post-test. According to Brown (1987: 219) a test is a method of measuring a person's ability or knowledge in a given area. The pre-test was given before treatment and used to find out the students' basic ability in answering the questions from passages. The post-test was used to see the students' achievement after they were given the treatment using Herringbone technique. The test consisted of 50 items. The materials for the test were taken from available reading test with or without some changes depend on the purpuse of the teaching objectives.

Following Harris (1975: 134), the students who got between 80 to 100 score were considered good; those who got between 60 to 79 score were considered average to good; those who got between 50 to 59 are considered poor to average; and those who get 49 pr below were considered poor.

**Pilot Study**

The writer administrated a pilot study before carrying out the actual experiment. The purpose of this activity was to know whether or not the instruments were valid and reliable. Arikunto (1998) says that a test or questionnaires as the instrument of a study must be valid and reliable, because they are applied to prove the hypotheses.

The pilot study was administrated to the second year students of SMU Tri Darma Palembang. There were 40 students tried-out. They were divided into two groups: A and B. Each group consisted of 20 students. The procedures followed in pilot study were the same as procedures for the actual reasearch. Some questions which posed difficulties were revised because they were assumed to be improper for subjects.

**Validity**

An instrument is valid if it can measure what should be measured (Airkunto: 1998). The writer uses a content validity and she sets the reading material tests that suit the syllabus of SMU Bhakti Ibu 1 Palembang and the validity of the instruments of the present study was tested by calculating correlation coefficient of the total score of each item (x) and students' total score (y). The calculate it, the pearson' Product Moment was applied (Purwanto, 1986). The result (r-value) is compared to r-*tab*. If r-value is higher than r-*tab*, the item is valid. The writer calculated it by using Excel Program of Computer. See the following calculation of item number 1 of reading comprehension test as the example (the tabulated score is in the appendix).

$$r_{xy} = \frac{\sum xy}{\sqrt{\left(\sum x^2\right)\left(\sum y^2\right)}}$$

$$= \frac{2236}{\sqrt{(64)(130220)}}$$

$$= \frac{2236}{2886.9}$$

$$r = 0.775$$

r = correlation coefficient (Pearson's Product Moment)
x = the total score of the item
y = the total score or the respondent

correlation coefficient of item number 1 is 0.775. the r-*tab* for N 40 is 0.312 (see appendices). Therefore item number one is valid, because r-value (0.775) is higher than r-*tab* (0.312).

**Reliability**

The reliability of the instruments was tested by calculating correlation coefficient of the students' total scores. The Pearson' Product Moment was applied to find out the correlation between group A and B (Purwanto, 1986). This was analyzed by SPSS program computer assistance. See Table 3 as the tabulated scores of reading comprehension test, Tables 4 and 5 as the result of the analysis.

**TABLE 3: TRIED OUT READING COMPREHENSION TEST SCORES**

| Students Number | Scores | |
|---|---|---|
| | Group A | Group B |
| 1 | 60 | 62 |
| 2 | 50 | 58 |
| 3 | 56 | 30 |
| 4 | 40 | 60 |
| 5 | 50 | 70 |
| 6 | 60 | 56 |
| 7 | 60 | 68 |
| 8 | 38 | 44 |
| 9 | 64 | 56 |
| 10 | 66 | 58 |
| 11 | 68 | 76 |
| 12 | 34 | 38 |
| 13 | 26 | 40 |
| 14 | 72 | 86 |
| 15 | 60 | 62 |
| 16 | 58 | 62 |
| 17 | 44 | 48 |
| 18 | 60 | 58 |
| 19 | 56 | 66 |
| 20 | 34 | 68 |
| **Total** | **1056** | **1166** |
| **Mean** | **52.80** | **58.30** |

**TABLE 4: DESCRIPTIVE STATISTICS**

| | Mean | Std. | N |
|---|---|---|---|

| | | Deviation | |
|---|---|---|---|
| X | 52.80 | 12.79 | 20 |
| Y | 58.30 | 13.33 | 20 |

**TABLE 5: CORRELATIONS**

| | | X | Y |
|---|---|---|---|
| X | Pearson Correlation<br>Sig. (2-tailed)<br>N | 545*<br>013<br>20 | 1.000<br>.<br>20 |
| Y | Pearson Correlation<br>Sig. (2-tailed)<br>N | 1.000<br>.<br>20 | 545*<br>013<br>20 |

* Correlation is significant at he 0.005 level (2-tailed)

**Techniques for Analyzing the Data**

In analyzing the data of the students' achievement, the writer used t-test to compare the results of the pre-test and post-test between the two groups. T-test was used to know whether or not there is a significant difference between the students' post-test score and their pre-test score and also to know the significant difference in terms of reading comprehension between the students who are trained by using Herringbone technique, and those are not trained by using Herringbone. The data is analyzed by using the Statistical Product and Service Solution (SPSS).

## 4. FINDINGS AND INTERPRETATION

**Findings**

The findings of this study are divided into two main points. The first point presents the description of the result of experimental group students. The second point presents the description of the result of control group students.

**a. Experimental Group**

The result of students' pre-test and post-test of the experimental group can be seen in the following table.

**TABLE 6 : THE SCORES OF EXPERIMENTAL GROUP**

| Student's number | Reading Comprehension Test (X) | |
|---|---|---|
| | Pre – test Scores ($X_1$) | Post-test scores Scores ($X_2$) |
| 1 | 64 | 72 |
| 2 | 48 | 62 |
| 3 | 70 | 72 |
| 4 | 62 | 74 |
| 5 | 76 | 84 |
| 6 | 62 | 68 |
| 7 | 58 | 66 |
| 8 | 72 | 82 |
| 9 | 66 | 82 |
| 10 | 74 | 80 |
| 11 | 44 | 60 |
| 12 | 60 | 62 |

| | | |
|---|---|---|
| 13 | 76 | 84 |
| 14 | 50 | 72 |
| 15 | 74 | 78 |
| 16 | 68 | 74 |
| 17 | 58 | 64 |
| 18 | 42 | 52 |
| 19 | 70 | 76 |
| 20 | 72 | 80 |
| Total | 1266 | 1444 |
| Mean | 63,3 | 72,2 |

The table above shows that 20 students' were taken as the subject of experimental group. In terms of reading comprehension test, on pre-test the lowest score was 42 and the highest was 76, with the mean was 63,3. On the post-test the lowest score was 52 and the highest was 84, with the mean was 72,2. The students' total score increased 178 points or 14,06 % from 1266 to 1444 after the application of Herringbone technique. To know more about this, the tabulated data above was analyzed by using SPSS program of computer assistance as follows :

Testing of statistical Hypothesis
The statistical hypothesis is as follows :
$H_a : {}_{\mu} X_2 > {}_{\mu}X_1$
$H_0 : {}_{\mu}X_2 \leq {}_{\mu}X_1$
The hypothesis above is examined by comparing the students' scores of given post-test with the pre-test. If the post-test scores are significantly higher than of the pre-test, the alternative hypothesis ($H_a$) is accepted.
From the Table 6 above, the result of *t-test* to examine hypothesis statistically by using SPSS program of computer assistance can be seen in Table 7 below.

**Table 7 : PAIRED SAMPLES TEST**

| | | Pair 1 |
|---|---|---|
| | | Pretest – posttest |
| Paired Differences | Mean | -8.900 |
| | Std. Deviation | 5.004 |
| | Std. Error Mean | 1.119 |
| | 95% Confidence Interval Lower of | -11.242 |
| | the Difference upper | -6.558 |
| T | | -7.954 |
| Df | | 19 |
| Sig.(2-tailed) | | .000 |

The result of analysis above shows that-value is-7.954 at significant level 0.000. the t-value is compared to t-tab based on the following criteria :

- If the t-value > t-tab,Ho is not accepted
- If the t-value > t-tab,Ho isccepted

**Control group**
The scores of the students' pre-test and post-test of the control group can be seen in the following table.

**TABLE 8 : THE SCORES OF CONTROL GROUP**

| Ss' Number | Reading Comprehension Test | |
|---|---|---|
| | Pre- Test Scores | Post – Test Score |
| 1 | 68 | 70 |
| 2 | 48 | 50 |
| 3 | 60 | 62 |
| 4 | 64 | 66 |
| 5 | 70 | 72 |
| 6 | 72 | 74 |
| 7 | 60 | 62 |
| 8 | 62 | 64 |
| 9 | 68 | 66 |
| 10 | 42 | 44 |
| 11 | 60 | 62 |
| 12 | 56 | 60 |
| 13 | 74 | 76 |
| 14 | 70 | 72 |
| 15 | 46 | 48 |
| 16 | 40 | 44 |
| 17 | 72 | 74 |
| 18 | 56 | 60 |
| 19 | 74 | 76 |
| 20 | 66 | 68 |
| Total | 1228 | 1270 |
| Mean | 61,4 | 63,7 |

The table above show that 20 students' were taken as the subject of control group. In terms of reading comprehension test, on pre-test the lowest score was 40 and the highest was 74, with the was 61,4. The student' total score of reading comprehension test increased 42 points or 3,42% from 1228 to 1270 after application of traditional technique. See the following analysis to know more about these facts.

**Table**

| | | Pair 1 |
|---|---|---|
| | | Pretest – posttest |
| Paired Differences | Mean | -3.600 |
| | Std. Deviation | 3.589 |
| | Std. Error Mean | .803 |
| | 95% Confidence Interval Lower of | -5.280 |
| | the Difference upper | -1.920 |
| T | | -4.485 |
| Df | | 19 |
| Sig.(2-tailed) | | .000 |

The result of analysis above shows that-value is-4.485 at significant level 0.000. the t-value is compared to t-tab based on the following criteria :

- If the t-value > t-tab,Ho is not accepted
- If the t-value > t-tab,Ho isccepted

**Interpretations**

The findings of the present study showed that the alternative hypothesis (Ha) for both experimental and control group was accepted because the students' scores of reading comprehension post-test were significantly higher than of the pre-test. This supported hypothesis that the application of herringbone technique improves students' ability in reading comprehension. This happened probably becaus the students in both sampled classroom have good proficiency. This means that whether the teacher applied Herringbone technique or traditinal technique, the students' reading comprehension ability improved.

Finally, the writer interpreted that Herringbone technique was better than traditional technique in terms of improving students reading ability if it was applied appropriately. It was shown by the percentage enhancement of students' means scores after applying two approaches.

The experimental group students' mean scores of reading comprehension test increased 14,06%. It was higher than the control group students' mean scores that increased 3,42%.

**Suggestions**

Based on the conclusion above, the writer offers some suggetions : since Herringbone technique was applicable in teaching reading comprehension to improve students' reading ability, especially for second year students of SMU Bhakti Ibu I Palembang. That is why it is expected that Herringbone technique could be applied as one of the alternatives by English teachers in improving the activity of teaching reading and learning English, especially in teaching reading. Herringbone technique can meet the students' need and improve their ability in reading comprehension. Finally, it is suggested to the teacher of English to selec the text can be used to make WHO, WHAT, WHEN, HOW, WHERE, and WHY questions.

## REFERENCES


Bromley, Karen D' Angelo. 1992. Language Arts: Exploring Connections. Boston, M A: A Division of Simon & Schuster, Inc.

Brown, H.D. 1987. Principles of Language Learning and Teaching. New Jersey:Prentice-Hall, Inc.

Christensen, Larry B. 1991. Experimental Methodology. Boston, M A: Allyn and Bacon, Inc.

Cochran, Judith A. 1993. Reading in the Content Areas for Junior High and Senior High School. Boston, MA: Allyn and Bacon.

Cooper, J. David. 1993. Literacy: Helping Children to Construct Meaning. Boston, MA: Houghton Mifflin Company.

Feuberstein, Tamar & Miriam Scholnik. 1995. Enchancing Reading Comprehension. San Fransisco. CA: Alta Book Centre.

Finocchiaro, Mary. 1989. English as a Second Language foreign language. 4th.ed. Englewood Cliffs. NJ: Prentice Hall Regents.

Gunning, Thomas G. 1992. Creating Reading Instrument for All Children. Boston, MA: Allyn and Bacon, Inc.

Harris, David P. 1975. Testing English as a Second Language. New York, NY: McGraw-Hill:Book Company.

Hatch, Evelyn and Hossein Farhady. 1982. Research Design and Statistics for Applied Linguistics. Rowley, MA: Newbury House Publishers, Inc.

Hornby. 2000. Oxford Advanced Learner Dictionary. 6th.ed.Oxford University Press.

Robertson, Ian. 1987. Sociology. New York, NY: Worth Publishers, Inc.

Silvhiany, Sary. 2002. "Developing adult EFL reading through intensive and extensive use of SARLC". (Research). Palembang: Sriwijaya University.

Steele, kathie. 2002. Four Reading Strategies for High School Students.

http://litsite.alaskaedu/uaa/workbooks/reading strategies. Accessed on october 24, 2002.

Suciadi, Flora. 2000. "Pengalaman melaksanakan pembelajaran membaca dengan tehnik group cloze siswa kelas III SLTP Negeri 3 Kupang". Pelangi Pendidikan. 3(2). Pp.32-37.

Tierney, Robert j. Et al. 1980. Reading Strategies and Practice : Guide for Improving Instruction. Boston, MA: Allyn and Bacon, Inc.

Wolf, McPeek Maryanne. Et al. 1998. A Psycholinguistic account of read