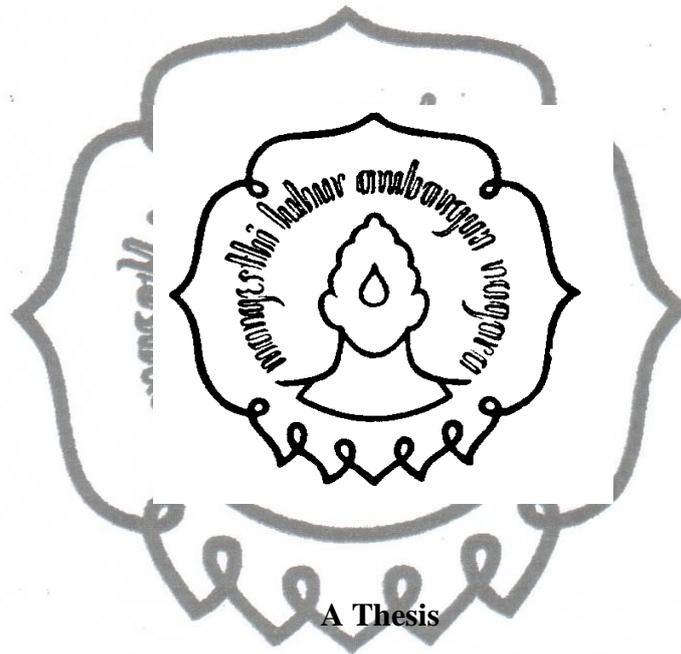


**THE EFFECTIVENESS OF GROUP INVESTIGATION  
TO TEACH READING COMPREHENSION VIEWED FROM  
THE STUDENTS' SCHEMATA**

**(An Experimental Study on the English 3 Students of Tarbiyah Department  
of STAIN Pekalongan in the 2011 / 2012 Academic Year)**



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## ABSTRACT

INAYATUL ULYA. S890908010. *The Effectiveness of Group Investigation to Teach Reading Viewed from the Students' Schemata (An Experimental Study on the English 3 Students of Tarbiyah Department of STAIN Pekalongan in the 2011/2012 Academic Year)*. Thesis. Surakarta: English Education Department, Graduate School, Sebelas Maret University of Surakarta. 2012. The first consultant: Dr. Ngadiso, M.Pd and the second consultant: Dr. Abdul Asib, M.Pd.

This research is intended to know whether; (1) Group Investigation method is more effective than Direct Instructional Method to teach reading; (2) Students who have high schemata have better reading skill than students who have low schemata; and (3) There is an interaction between teaching methods and students' schemata in teaching reading.

The research was carried out at STAIN Pekalongan in the 2011/2012 Academic Year. The population was the English 3 Students of Tarbiyah Department of STAIN Pekalongan in the 2011/2012 Academic Year. It consists of four classes (150 students). The writer used cluster random sampling to get the sample. It consists of two classes: (1) 38 students of A class, and (2) 38 students of B class. The research was an experimental study. There are two instruments in the form of test for collecting data: (1) 30 items of schemata test and (2) 30 items of reading test. The two instruments were valid and reliable after both were tried out to the English 3 students of class C. The data were the result of reading test and analyzed by multifactor analysis of variance 2 x 2 (ANOVA). Then, it was analyzed by using Tukey test.

Based on the result of inferential analysis of the data, this research comes to some findings: (1) Group Investigation method is more effective than Direct Instructional Method for teaching reading to the English 3 students of Tarbiyah Department of STAIN Pekalongan in the 2011/2012 academic year; (2) The students who have high schemata have better reading skill than the students who have low schemata of the English 3 students of Tarbiyah Department of STAIN Pekalongan in the 2011/2012 academic year; and (3) There is an interaction between teaching methods and students' schemata in teaching reading to the English 3 students of Tarbiyah Department of STAIN Pekalongan in the 2011/2012 academic year.

Based on the research findings, it can be concluded that: (1) Group Investigation method is a very effective method for teaching reading to the English 3 students of Tarbiyah Department of STAIN Pekalongan in the 2011/2012 academic year; and (2) The effectiveness of the method is influenced by the level of the students' schemata. Hopefully, the result of this research will be useful for lecturers in order to choose and determine the suitable teaching method used in their class.

Key word: group investigation method, direct instructional method, schemata

## ABSTRAK

INAYATUL ULYA. S890908010. *Keefektifan Metode Group Investigasi untuk Pengajaran Membaca Ditinjau dari Sudut Skemata Mahasiswa* (Sebuah Penelitian Experimental di Kelas Bahasa Inggris 3 Jurusan Tarbiyah STAIN Pekalongan pada Tahun Akademik 2011/2012). Tesis. Surakarta: Program Studi Pendidikan Bahasa Inggris Pasca Sarjana Universitas Sebelas Maret Surakarta. 2012. Pembimbing satu: Dr. Ngadiso, M.Pd dan Pembimbing dua: Dr. Abdul Asib, M.Pd.

Penelitian ini bertujuan untuk mengetahui; (1) Apakah Metode Group Investigasi lebih efektif daripada Metode Pengajaran Langsung untuk pengajaran membaca; (2) Apakah mahasiswa yang memiliki skemata tinggi mempunyai kemampuan membaca yang lebih baik daripada mahasiswa yang memiliki skemata rendah; dan (3) Apakah ada interaksi antara metode mengajar dan skemata mahasiswa dalam pengajaran membaca.

Penelitian dilaksanakan di STAIN Pekalongan pada Tahun Akademik 2011/2012. Populasinya adalah mahasiswa Bahasa Inggris 3 Jurusan Tarbiyah STAIN Pekalongan Tahun Akademik 2011/2012. Populasi tersebut terdiri dari empat kelas (150 mahasiswa). Penulis menggunakan teknik penyampelan kluster dan acak untuk mendapatkan sampel. Sampel terdiri dari dua kelas: (1) 38 mahasiswa kelas A, dan (2) 38 mahasiswa kelas B. Penelitian ini merupakan penelitian eksperimen. Ada dua instrument yang digunakan untuk mengumpulkan data: (1) 30 soal tes skemata dan (2) 30 soal tes membaca. kedua instrument tersebut valid dan terpercaya setelah diujikan kepada mahasiswa Bahasa Inggris 3 kelas C. Data yang diperoleh dari tes membaca kemudian dianalisa dengan menggunakan analisis of variant 2 X 2 (ANOVA) dan Tukey Test.

Berdasarkan hasil analisis inferensial dari data-data yang ada, ditemukan bahwa : (1) Metode Grup Investigasi lebih efektif daripada Metode Instruksi Langsung untuk pengajaran membaca bagi mahasiswa kelas Bahasa Inggris 3 Jurusan Tarbiyah STAIN Pekalongan ; (2) Mahasiswa yang memiliki skemata yang tinggi memiliki ketrampilan membaca yang lebih baik daripada mahasiswa yang memiliki skemata yang rendah; dan (3) Ada interaksi antara metode mengajar dan skemata mahasiswa dalam pengajaran membaca bagi mahasiswa kelas Bahasa Inggris 3 Jurusan Tarbiyah STAIN Pekalongan tahun akademik 2011/2012.

Berdasarkan hasil penelitian dapat disimpulkan bahwa: (1) Metode Grup Investigasi adalah metode yang sangat efektif untuk pengajaran membaca mahasiswa kelas Bahasa Inggris 3 Jurusan Tarbiyah STAIN Pekalongan; (2) Keefektifan dari sebuah metode dipengaruhi oleh tingkat skemata mahasiswa. Diharapkan bahwa hasil dari penelitian ini akan menjadi sesuatu yang berguna bagi para dosen dalam memilih dan menentukan metode mengajar yang sesuai untuk kelas mereka.

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Kata kunci: metode grup investigasi, metode pengajaran langsung, skemata

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## CHAPTER I

### INTRODUCTION

#### A. Background of the Study

In a university, English is not only taught to English Department students, but also taught to the non English Department students as a compulsory subject. English as a subject matter in a university covers the four basic language skills: listening, speaking, reading, and writing. The aim of teaching English to the non English Department students is to help them in understanding the literatures, since nowadays the references which they use, are not only written in Indonesia but also in English. To support them in comprehending English text, it is very important for the students to improve their reading comprehension. Santrock (2008: 368) defines reading as an ability to understand written discourse. It is a kind of activity to comprehend the writer's ideas or the way the writer communicates with the readers by way of the written or printed words. Reading is important for university students in order to cope with new knowledge in the changing world of technological age.

For the Non English Department students, reading is one of the complex activities in learning English. Their linguistics competency affects their reading comprehension. Some students who lack of grammar and vocabulary mastery, have difficulty to understand the meaning of the word, interpret the meaning of the sentences; even they are not able to catch the message of the passages at all. In summary, students met some difficulties in comprehending the text and their

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reading comprehension is low. Realizing this phenomenon, it is very crucial to know how to teach reading to the university students. The teacher's method in teaching is one of the factors that influence students' reading comprehension.

In some Indonesian universities, some English lecturers still use Direct Instruction Model, this model is primarily teacher directed (Arends, 1997: 67). It is used to describe learning material in which the teacher or expert transmits information directly to learners structuring learning time to reach a clearly defined set of objectives as efficiently as possible (Valiathan, 2009: 2). This method is less appropriate when the lecturer is trying to promote social skills or to teach creativity, higher-level thinking or abstract concepts and ideas. In teaching reading, the lecturer dominates almost all of teaching learning process, the lecturer translates word by words of the text. This method usually makes students get bored because it is monotonous and the students are not active.

One of the ways to make the teaching reading effective is making the students active so they enjoy learning and they can improve their reading skill. The method that will be used in teaching must also regard the level of the students. Group Investigation is one of cooperative learning methods. This method implements a democracy in education. The teacher's role in this method is as a facilitator, he or she prepares the broad topic to study and the students are involved in designing the sub topics of the study and choose the topic based on their interest. There are six steps in implementing Group Investigation Method, they are (1) Topic selection, students choose specific subtopics within a general problem area usually delineated by the teacher. Students then organize into two to

six-members task-oriented groups. Group composition is academically and ethnically heterogeneous; (2) Cooperative planning, students and teacher plan specific learning procedures, task, and goal consistent with the subtopics of the problem selected in step 1; (3) Implementation, Pupils carry out their plan formulated in step 2. Learning should involve a wide variety of activities and skills and should lead students to different kinds of sources both inside and outside the school. The teacher closely follows the progress of each group and offers assistance when needed; (4) Analysis and synthesis, pupils analyze and evaluate information obtained during step 3 and plan how it can be summarized in some interesting fashion for possible display or presentation to classmates; (5) Presentation of final product, some or all groups in the class give an interesting presentation of the topics studied in order to get classmates involved in each other's work and to achieve a broad perspective on the topic. Group presentations are coordinate by the teacher; and (6) Evaluation, in cases where groups pursued different aspects of the same topic, pupils and teachers evaluate each group's contribution to the work of the class as a whole. Evaluation can include either individual or group assessment, or both Sharan and colleagues (1984) in Arends (1997: 121). From the previous explanation, it can be concluded that the methods of teaching will influence the students in mastering the material, especially in improving their reading comprehension.

The other thing that influences the students' reading comprehension is schemata. Clarke and Siberstein in Brown (2001: 299) define schemata as the information, knowledge, emotion, experience, and culture which are brought by

the readers to the printed words. According to the schema theory, not only is the reader's prior linguistic knowledge (linguistic schemata) and level of proficiency in the second language important, but the reader's prior background knowledge of the content area of the text (content schemata) as well as of the rhetorical structure of the text (formal schemata) are also important (Carrell in Zhang, 2008: 198). Reading comprehension is the process of choosing and verifying conceptual schemata for the text (Rumelhalt in Zhang, 2008: 198). From these theories, it can be concluded that there is a relationship between students' schemata and their reading comprehension. Students who have high schemata will have better understanding in comprehending the printed words of the text. On the contrary, students who have low schemata will get some difficulties in interpreting the text and getting the message of the text.

To solve the problem above, the researcher uses group investigation to teach reading on the consideration that it can facilitate the teacher to arouse the students' activeness and improve the students' reading comprehension. She considers students' schemata (high or low) to know whether group investigation method is suitable for students who have high schemata or low schemata, and to know whether direct instruction method is suitable for students who have high schemata or low schemata.

In this study, the researcher is interested in conducting an experimental research entitled: "The Effectiveness of Group Investigation to Teach Reading Comprehension Viewed from the Students' Schemata (An Experimental Study on the English 3 Students of Tarbiyah Department of STAIN Pekalongan in the 2011/2012 Academic Year). *commit to user*

## B. Identification of the Problem

Based on the background of the study, there are many problems that arise.

The problems can be identified as follows:

1. Does Group Investigation Method work best in teaching reading so that students are able to improve their reading comprehension?
2. Does Direct Instructional Method work best in teaching reading so that students are able to improve their reading comprehension?
3. Does Group Investigation Method applied in teaching reading lead the students to be autonomous learners in reading comprehension?
4. Are the students with high level of schemata better taught using Group Investigation Method so that they can improve their reading comprehension?
5. Are the students with low level of schemata better taught using Direct Instructional Method so that they can improve their reading comprehension?
6. Is there an interaction between methods used in teaching reading and students' schemata?

## C. Problem Limitation

The writer realizes that it is impossible to answer all the problems. This limitation is taken because of time allotment and financial allocation.

The problems of the study are limited to some related variables. The writer only discusses Group Investigation and Direct Instructional method as the experimental variables. Meanwhile, the teaching reading here will be focused on

the teaching reading for university students. In addition, schemata are chosen as moderator variable because schemata are believed as the most influencing factor in determining how readers comprehend reading materials. The writer is also eager to find out whether there will be an interaction between experimental variables and moderator variable.

#### **D. Problem Statement**

From background of the study, problem identification, and problem limitation above, the writer formulates the problem of the study as follows:

1. Is Group Investigation Method more effective than Direct Instructional Method to teach reading comprehension to the English three students of Tarbiyah Department of STAIN Pekalongan?
2. Do students who have high schemata have better reading comprehension than those who have low schemata?
3. Is there any interaction effect between the methods of teaching and students' schemata on the students' reading comprehension?

#### **E. Objectives of the Study**

The objectives of this study are connected to the problem statement. They are intended to answer those problems. In detail, this research has the objectives to know whether:

1. Group Investigation Method is more effective than Direct Instructional Method to teach reading to the English three students of Tarbiyah Department of STAIN Pekalongan.
2. Students who have high schemata have better reading comprehension than those who have low schemata.
3. There is an interaction effect between the methods of teaching and students' schemata on the students' reading comprehension

#### **F. Benefits of the Study**

The benefits of this study are placed into some intentions, they are:

1. For the students

Through this study, students have different experience in their learning process because they are taught using different methods of teaching. This experience, hopefully, will be useful for them since they are Tarbiyah students and they have to face their own students in the future.

2. For the lecturers

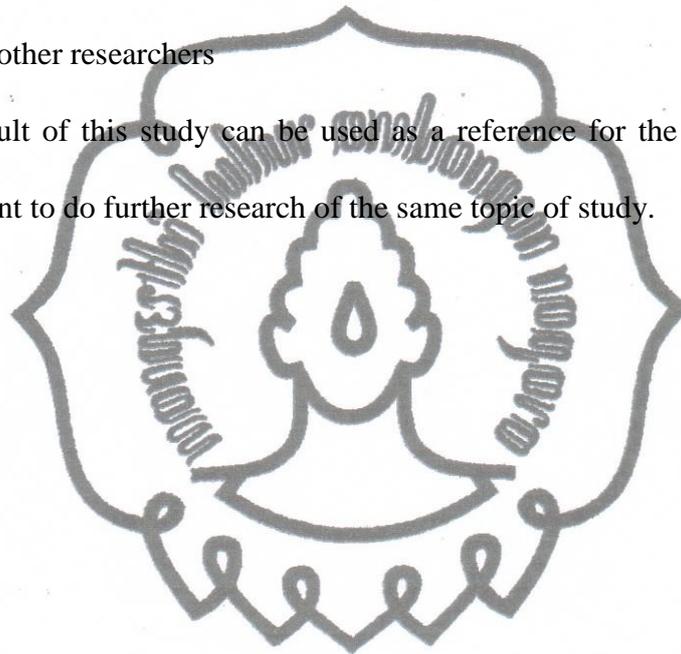
The writer expects that her research will give a contribution to the lecturers in teaching their students. The models of teaching which are applied in this research can be used as an alternative model to teach English as a Foreign Language or to teach some other subjects.

3. For the researcher

This study has a function to measure whether or not she can practice and apply all of the theoretical knowledge to a real class of her own, and also to develop and improve her knowledge on language teaching and learning through a real research on ELT.

4. For the other researchers

The result of this study can be used as a reference for the other researchers who want to do further research of the same topic of study.



## CHAPTER II

### REVIEW OF RELATED LITERATURE

#### A. Reading

##### 1. The Definition of Reading

Learning to read is an important educational goal. For the students, the ability to read opens up new worlds and opportunities. It enables them to gain new knowledge, enjoy literature, and do everyday things that are part and parcel of modern life, such as, reading the newspapers, job listings, instruction manuals, maps and so on. In learning English, reading ability is a vital ability for English learners; therefore, how to improve students' reading ability has been drawing teachers' attention. Reading ability is a basic and significant criterion to scale one's English level.

Realizing that reading is important for the students, it is very crucial to know the definition of reading. From the simplest definition, reading is the ability to understand written discourse (Santrock, 2008: 368). Supporting this idea, Pang, et al. (2003: 6) regard reading as about understanding of written text, it is a complex activity that involves both perception and thought.

In addition, Rumelhart in Aebersold and Field (1997: 5) define reading as an activity which involves the reader, the text, and the interaction between reader and text.

Another definition is stated by Williams (1996: 2) reading is a process whereby one looks at and understands what has been written. Based on this

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definition, it doesn't mean that the readers necessarily need to look at everything in a given piece of writing. The reader is not simply a passive object, fed with letters, words and sentences, but is actively working on the text, and is able to arrive at understanding without looking at every letter and word. The efficient reader generally reads in group of words, not word by word, far less letter by letter.

In line with the previous definitions, Goodman in Williams (1996: 3) view reading as a psycholinguistics guessing game. The guessing game however, is far from random. It's principled guessing, which draws upon two sources to guide it. First the text itself and, second, what the reader brings to the text.

## **2. Reading with Comprehension**

According to Robinson (1975: 8) reading is defined as understanding author's message (both during the process and as product), obviously in this frame of reference reading cannot take place without comprehending (the process) or comprehension (the product). Comprehension is the process of deriving meaning from connected text, as defined by Pang (2003: 6), comprehension is the process of making sense of words, sentences, and connected text. It involves word knowledge (vocabulary) as well as thinking and reasoning. Therefore, comprehension is not a passive process, but an active one. The reader actively engages with the text to construct meaning. This active engagement includes making use of prior knowledge. It involves drawing inferences from the words and expressions that a writer uses to

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communicate information, ideas and viewpoints. In conclusion, Rumelhalt in Zhang (<http://www.aclclp.org.tw/clclp/v13n2/v13n2a4.pdf>) regards reading comprehension as the process of verifying conceptual schemata for a text.

A passage can properly be read with varying degrees of understanding. The degree of desired comprehension will depend in part upon the purpose of the reader. Besides the purpose of the reader, others factors have a bearing upon comprehension. The physical condition of the reader, his interest in the material, and the difficulty of the selection, all affect understanding (De Boer and Dallman, 1966: 130). If these factors are not built in a good way, they will cause difficulties in reading comprehension.

### **3. Difficulties in Reading Comprehension**

De Boer and Dallman (1966: 132) categorize the difficulties of reading comprehension viewed from some factors, they are:

#### **a. Limited intelligent**

There is a substantial correlation between intelligent and reading ability. A person who has lower or lowest intelligent level faces difficulties with comprehension. It is not worth, therefore, for teacher to ask him to read materials involving abstraction beyond the level of his mental development, but this is not the final judgment. The slowest learner (or reader whose IQ is 65 or below), however, can grow in comprehension. In some cases, the growth is not optimal in finding the answer of a simple question but he cannot be expected to interpret a complicated graph.

b. Undesirable physical factors

Physical factors relate to the condition of the reader and the condition surrounding him. Noisy surrounding, inadequate lighting, high or low temperature, uncomfortable chairs, and stimulating or distracting surrounding may interfere with maximum comprehension. Fatigue, malnutrition, or undernutrition may do the same. The successful teacher of reading is alert to such inferring physical factors.

c. Overemphasis on word recognition

Overemphasizing word recognition in reading is not suggested. It is not wise to see a reading text word by word in order to find overall meaning. Readers don't have to know the meaning of each word perfectly. Recognizing the context of object being read is much more important in reading comprehension due to the constructing meaning.

d. Overemphasis on oral reading

Oral reading can have either a desirable or a detrimental effect on comprehension. Often oral reading of a selection that is particularly difficult for the reader increases his understanding of it, since he not only see but also hears what he reads. Furthermore, in effective oral reading, if there is an audience, the reader is required not only to understand what he reads but also to interpret his understanding to other. In this process increased attention needs to be placed on comprehension. Unfortunately, oral reading, if not done well, can have undesirable effect on comprehension. The reader can be so conscious of his audience that he will fail to understand what he is reading.

e. Insufficient background of reading selection

Another frequent cause of poor comprehension is lack of experience background essential to the understanding of what is being read. Lack of understanding of the concepts involved in reading materials and of the words used is an additional limitation to comprehension. The understanding about the text types also becomes a background for reading a selection. If a reader knows or at least recognize a certain text type, he will be easy to construct the meaning of a text which type is the same as what he knows.

f. Failure to adjust reading technique to reading purpose and type of reading material

Good reading comprehension requires a flexible approach to the printed page. A reader has to know what text he reads. It includes text type. He has to recognize the text type in order to construct meaning from a text. It is not only that, he should be able to change his technique in reading when he reads another text which has different genre. For example: when he had been reading a great deal of fiction, and had derived great pleasure from the experience. However when he encountered arithmetic problems, ha had difficulty because he read them as if he were reading a story and so moved too rapidly overt the lines. Here, the reader need for versatility in adapting the reading method to the reading purpose and to the nature of material read.

g. Lack of appropriate teacher guidance

Difficulties in reading comprehension may frequently be overcome with the aid of a teacher who is skilled in observing the causes of the difficulties. School records are an essential source of information about the cause of poor comprehension. Attendance records, health records, previous school history, anecdotal records concerning the child's attitudes, problems, and earlier behavior, and similar records can give the teacher insight into his difficulties.

#### 4. Reading Purpose

It is important to bear in mind that reading is not an invariant skill, that there are different types of reading skills which correspond to the many different purposes the readers have for reading. Rivers and Temperley as cited by Nunan (1993: 34) suggest that second language learner will want to read for following purposes:

- a. To obtain information for some purposes or because the readers are curious about some topic.
- b. To obtain instructions on how to perform some task for readers' work daily life.
- c. To act in play, play a game, do a puzzle.
- d. To keep in touch with friends by correspondence or to understand business letters.
- e. To know when or where something will take place or what is available.

- f. To know what is happening or has happened (as reported in newspaper, magazines, reports).
- g. For enjoyment or excitement.

To understand the students' problem in reading comprehension and plan an effective developmental program in reading, the teacher needs to know the various skills that make up the ability to comprehend what is read. One of the skills is understanding the reading purpose of the students'. Here are the skills of reading comprehension viewed from students' reading purpose which are categorized by De Boer and Dallman (1966: 135).

- a. Reading to find the main idea

One of the most common reasons for reading is to get general idea of a selection. Reading of fiction is usually done for this purpose. Even in other types of reading like science, it may often legitimately be the goal. The ability to determine the main idea of a part read is basic also to many other comprehension skills, such as the ability to summarize and organize. Skills in finding the main idea in a paragraph or a longer selection, and in not mistaking a detail for the major point, needs to be developed in many students not only through incidental means but often also through practice exercises

- b. Reading to select significant detail

The ability to note important details is closely related to skill in finding the central though or main idea of a selection. To be proficient in this respect, the readers need to do more than differentiate between main points and supporting details; he must also be able to decide what points are important for

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the purpose he has in mind. Unfortunately, the reader who gives equal attention to all details that are presented may find himself so encumbered that he loses perspective. Practices may be needed to help him decide which details are worthy of special note and which should be ignored. Their relationship to the main idea of the selection will usually determine their value; the purpose of the reader will be another determinant.

c. Reading to answer questions

Reading to answer questions is a means of improving the ability to note significant details. Answers are relatively easy to find when the questions are partly couched in the exact words of the writer. In finding the answer, not only should students gain skill in finding answer to questions that are stated by others. To avoid overdependence on the teacher they also need to develop in ability to formulate significant questions for themselves as purpose of reading. Questions by the teacher should serve chiefly as stepping stones to questions that the reader decides upon for himself.

d. Reading to summarize and organize

Both the ability to select the main idea and to choose significant details are basic to another commonly sought goal of reading-that summarizing and organizing. However, to make an adequate summary or to organize what has been read, it is not enough for the reader to know what the main idea is and what the significant details are. He must also be able to sense the relationships among the details. Furthermore, he often needs to know either how to make these relationships clear to other or how to record them for later rereading.

Frequently the efficient reader makes summaries and organizes what he reads without doing any writing. The person who reads a chapter and then asks himself what the main points are, what material constitutes significant detail, and how all these parts are woven together is making a summary and organizing what he reads. In fact, skill in organizing or summarizing is ordinarily put to use without the writing of summaries is ordinarily put to use without the writing of summaries outlines. Practice in summarizing and organizing may lead to such skill in these activities that frequently the reader almost unconsciously summarizes and organize what he reads.

e. Reading to arrive at generalization

Formulating generalizations is in a sense a specialized form of summarizing. To arrive at generalizations the reader needs to note insufficiencies and then decide whether the data presented are sufficient to warrant a significant conclusion. One danger for the person not skillful in making generalizations is that he may generalize without sufficient evidence. Another is that he will make too broad generalize without sufficient evidence. Another is that he will make too broad a generalization. To avoid errors due to both of these causes a teacher can give specific guidance not only with material read but also with observations made in other situation.

f. Reading to follow direction

The ability to follow directions usually is a combination of many reading skills. The ability to note details, to organize, and to note the sequences of events are among the learning essential to this type of reading skill.

g. Reading to predict outcomes

Another important comprehension skill is that of predicting outcomes. This skill may manifest itself in a variety of ways. Skill in predicting outcomes is useful in helping the reader to note when he has misread a word or a sentence. It also value because the person who is adept at predicting outcomes as he reads can usually get the thought more quickly and others. This skill is helpful also in remembering what is read, for it enables the reader to take special note only of those points that are new to him or are different from what he would have expected, and the burden of recall is thereby lessened.

h. Reading to evaluate critically

One of the most significant comprehension skills is that of making evaluations of what is read. By critical evaluation is not meant the attitude of suspecting every statement read of being false. Critical reading involves the capacity for making comparisons and appraisal. Critical reading is active, creative reading. The level of criticism will vary with the age and maturity of the reader. Critical discrimination in reading can be cultivated through skillful training.

## 5. Micro and Macro-Skills for Reading Comprehension

Reading comprehension involves some skills that can indicate the students' competence in having good reading skill. Brown (2001: 307) states that there are six micro-skills for reading comprehension:

- a. Discriminate among the distinctive graphemes and orthographic pattern of English.
- b. Retain chunks of language of different lengths in short-term memory.
- c. Process writing at an efficient rate of speed to suit the purpose.
- d. Recognize a core of words, and interpret word order patterns and their significance.
- e. Recognize grammatical word classes (nouns, verbs, etc), system (e.g., tense, agreement, pluralization), pattern, rules, and elliptical forms.
- f. Recognize cohesive devices in written discourse and their role in signaling the relationship between and among clauses.

In addition, Brown (2004: 187-188) also categories the macro-skill of reading comprehension, they are:

- a. Recognizing the rhetorical forms of written discourse and their significance for interpretation.
- b. Recognizing the communicative functions of written texts, according to form and purpose.
- c. Inferring context that is not explicit by using background knowledge
- d. From events, ideas, etc. infer links, and connections between events, deduce causes and effects, and detect such relations as main idea,

supporting idea, new information, given information, generalization, and exemplification.

- e. Distinguishing between literal and implied meaning.
- f. Detecting culturally specific references and interpret them in a context of the appropriate cultural schemata.
- g. Developing and using a battery of reading strategies, such as scanning and skimming, detecting discourse markers, guessing the meaning from context, and activating schemata for the interpretation of texts.

Davis in Alderson (2000: 9) defines eight skills in reading, they are:

- a. Recalling word meanings
- b. Drawing inferences about the meaning of a word from context
- c. Finding answer to questions answered explicitly or in paraphrase
- d. Weaving together ideas in the content
- e. Drawing inferences from the content
- f. Recognizing a writer's purpose, attitude, tone and mood
- g. Identifying a writer's technique
- h. Following the structure of a passage

Munby in Alderson (2000: 10) distinguishes the following reading micro-skills:

- a. Recognizing the script of a language.
- b. Deducing the meaning and use of unfamiliar lexical items.
- c. Understanding explicitly stated information.

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- d. Understanding information when is not explicitly stated.
- e. Understanding conceptual meaning.
- f. Understanding the communicative value of sentences.
- g. Understanding relations within sentence.
- h. Understanding relations between parts of the text through lexical cohesion devices.
- i. Understanding cohesion between parts of the text through grammatical cohesion devices.
- j. Interpreting by going outside it.
- k. Recognizing indicators in discourse.
- l. Identifying the main point or important information in discourse.
- m. Distinguishing the main point from supporting details.
- n. Extracting salient details to summarize (the text, an idea).
- o. Extracting relevant points from a text selectively.
- p. Using basic reference skills.
- q. Skimming.
- r. Scanning to locate specifically required information.
- s. Transcoding information to diagrammatic display.

## 6. Models of Reading Comprehension

There are three main models of how reading occurs, they are:

### a. Bottom-up model

This theory argues that the readers construct the text from the smallest units (letters to words to phrases to sentences, etc) and that the process of constructing the text from those smallest units becomes so automatic that readers are not aware of how it operates (Eskey and Stanovic in Aebersold and Field, 1997: 18).

Bottom-up model of reading process holds the view that reading is a process of building symbols into words, words into sentences, and sentences into the overall meaning, which reflects traditional attitudes toward reading. In this model, readers begin with the lowest level, from which the symbols are identified. Strings of symbols are then analyzed into morphological clusters, from which words are recognized and then strings of words are analyzed into phrases and sentences. The meaning of the text is expected to come naturally as the code is broken based on the reader's prior knowledge of linguistic units like vocabulary, grammar, and syntax.

Therefore, from the point of view of bottom-up model, accuracy in understanding linguistic units is very significant and the lower-level processing skills in reading are important. This model weakens the significance of reading comprehension because the focus is on the understanding of linguistic knowledge but little attention is paid to schema, i.e. related cultural background, the whole text, etc.

b. Top-down model

Top-down model emphasizes the use of readers' real world knowledge in memory. Goodman in Aebarsold and Field (1997: 18) state that readers bring a great deal of knowledge, expectation, and questions to the text and, given a basic understanding of vocabulary, they continue to read as long as the text confirms their expectations. The goal of reading is constructing meaning in response to text; it requires interactive use of grapho-phonetic, syntactic, and semantic cues to construct meaning. Readers do not read every word, but see through the text in order to be able to guess the meaning of the words or phrases. During this model reading process, readers take in larger units of meaning of the text at a time, match what they already know with the meaning they derive from the text. Top-down processing occurs as the system makes general predictions based on higher level and general schemata. It searches the input for information to fit into these partially satisfied, higher order schemata.

c. The interactive model

From the definition above, it can be concluded that both bottom-up and top-down models have limitations. The recognition of this results in a more comprehensive reading process, namely, interactive model which is an interaction of bottom-up and top-down models claiming that prior knowledge and prediction facilitate the processing of input from the text (Xiao-hui in <http://www.linguist.org.cn/doc/uc200711/uc20071104.pdf> ). The interaction in this perspective takes place at three levels: (1) the interaction between lower-level and higher-level skills; (2) between bottom-up processing and top-down

processing; and (3) between the background knowledge presupposed in the text and the background of the reader.

In interactive reading processing, both bottom-up and top-down processing should be occurring at all levels simultaneously (Rumelhart in <http://www.linguist.org.cn/doc/uc200711/uc20071104.pdf>). Readers may employ bottom-up process as a base for comprehending a text and then turn to top-down process to execute high-level interpretation of the content of the text. Prediction of the content will be confirmed, revised or rejected through further data analysis. Interactive model of reading process is the combination of bottom-up and top-down models, and thus absorbs their merits and avoids the limitations to a great extent. Till now, this is the most effective reading processing. Hence, it is advocated by many researchers.

## **7. Strategies of Reading Comprehension**

In reading a text, readers need to have reading strategies in order to construct meaning from the text. Anderson, et al. in Aebarsold and Field (1997: 16) divide the reading strategies as below:

- a. Recognize the words quickly.
- b. Use text features (subheadings, transition, etc.).
- c. Use title (s) to infer what information might follow.
- d. Use world knowledge.
- e. Analyze unfamiliar words.
- f. Identify the grammatical functions of words.
- g. Read for meaning, concentrate on constructing meaning.

- h. Guess about the meaning of the text
- i. Evaluate guesses and try new guesses if necessary.
- j. Monitor comprehension
- k. Keep the purpose for reading the text in mind.
- l. Adjust strategies to the purpose for reading.
- m. Identify or infer main ideas.
- n. Understand the relationships between the parts of a text:
- o. Distinguish main ideas from minor ideas.
- p. Tolerant ambiguity in a text (at least temporarily)
- q. Paraphrase.
- r. Use context to build meaning and aid comprehension
- s. Continue reading even when unsuccessful, at least for a while

According to Santrock (2008: 370) there are some metacognitive strategies that teachers can help students to improve their reading:

- a. Overview text before reading.
- b. Look for information while reading and pay more attention to it than other information; ask questions about the important ideas or relate them to something the teacher already knows.
- c. Attempting to determine the meaning of words not recognized (use the words around a word to figure it and wait for further clarification).
- d. Monitor text comprehension.
- e. Understand relationships between parts of text.
- f. Recognize when going back and reread a passage is needed.
- g. Adjust pace of reading depending on the difficulty of the material.

Based on the theories of reading as mentioned above, the writer defines reading as a process of interpreting the printed words which are written in a text. In reading, the reader will try to catch the message of the text which is intended to convey by the author. Reading process involves the reader, the text, and the interaction between the reader and the text. To get the message of the text, it needs a good comprehension. Comprehension means understanding. The process of reading comprehension involves some aspects, they are:

- a. Making sense of words, sentences, and connected text, it involves word knowledge (vocabulary) as well as thinking and reasoning.
- b. Deriving meaning from connected text.
- c. Engaging the text to construct meaning, it includes making use of prior knowledge and involves drawing inferences from the words and expressions that a writer uses to communicate information, ideas and viewpoints.

In conclusion, the writer defines reading comprehension as the ability to understand and catch the message of a written text. The indicators of reading comprehension are the ability of comprehending the meaning of word based on the context, finding explicit information, finding reference, finding implicit information, identifying main ideas, and finding communicative function of text.

## B. Group Investigation Method

Group Investigation Method is part of cooperative learning method. Cooperative learning is an approach to teaching that makes maximum use of cooperative activities involving pairs and small groups of learners in the classroom (Richard and Rodgers, 2001: 192).

In the early twentieth century U.S. educator, John Dewey is usually credited with promoting the idea of building cooperation in learning into regular classrooms on a regular systemic basis. It was more generally promoted and developed in the United States in the 1960s and 1970s as a response to the forced integration of public schools and has been substantially refined and developed since then. Richard and Rodgers (2001:192) state that educator were concerned that traditional models of classroom learning were teacher fronted, foster competition rather than cooperation, and favored majority students.

There are several cooperative learning methods that can be applied in by the teacher in teaching his / her students, they are: Student Teams-Achievement Division (STAD), Team Games-Tournament (TGT), Jigsaw, Group Investigation (GI), Structural Approach, Team Accelerated Instruction, and Cooperative Integrated Reading and Composition (CIRC). In this research the writer will use Group Investigation (GI) model to teach reading comprehension.

According to Slavin (1995: 112), Group Investigation has its origins in philosophical, ethical, and psychological writing dates to the early years of this century. First among the prominent forebears of this educational orientation is John Dewey, the other experts supporting Dewey's model are John U Michaelis

and Herbert Thalen (Joyce and Weil, 1992:42). More recently, this approach has been extended and refined by Sharan and his Colleagues in Tel Aviv University (Arends, 1997: 120). Group investigation can be applied in teaching math and reading (Joyce and Weil, 1992: 49)

In Group Investigation, students are involved in planning both the topics for study and how to proceed with their investigation (Arends, 1997: 120). In addition, Joyce and Weil (1992: 42) state that Group Investigation attempts to combine in one teaching strategy, the form and dynamics of the democratic process with the process of academic inquiry. Moreover, Slavin (1995: 112) explained that in Group Investigation, classroom is a cooperative enterprise where teacher and pupils build the learning process on mutual planning based on their perspective experiences, capacities and needs. Group planning is one method for ensuring maximum pupils involvement. A cooperative-investigation method of classrooms learning derives from the premise that both the social and intellectual domains in the school learning process are in corporate with the values it advocates.

### **1. The Teaching Procedure of Group Investigation Method**

In Group Investigation, students progress through six stages (Slavin, 1995: 113). These stages and their components are outlined below and then described in detail. These stages can be adapted based on students' background, ages, and abilities, as well as the constraints of time.

a. Stage 1: Identifying the topics, and categorize Pupils into groups

This stage is devoted to organizational matters. They are: (1) the teacher presents a broad problem; (2) students scan sources, propose topics and categorize suggestions; (3) students join the group, studying the topic of their choice; (4) group composition is based on their interest and is heterogeneous; and (5) teacher assists in information gathering and facilitates organization.

b. Stage 2: Planning the learning task

After joining their respective research group, students turn their attention to the subtopic of their choice. At this stage, group members determine the aspects of the subtopic each one of them will investigate. In effect, each group must formulate a researchable problem, decide how to proceed, and determine which resources it will need to carry out its investigation.

c. Stage 3: Carrying out the investigation

Typically, this is the longest stage. In this stage, the students gather information, analyze the data, and reach conclusion. Each group members contributed to the group effort. Students exchange, discuss, and synthesize idea. Although students mat be given a time limit, it is not always possible to foresee the exact number of sessions enable a group project to proceed uninterrupted until the bulk of the work is done.

d. Stage 4: Preparing a final report

This stage is a transition from the data-gathering and clarifying stage to the stage where the group reports the result of its activities to the class. In this stage group members determine the essential message of their project, plan

what they will report and how they will make their presentation. Group representative form a steering committee to coordinate plans for the presentation.

e. Stage 5: Presenting the final report

The groups are now prepared to present their final report to the class. The presentation is made to the entire class in variety forms. Part of the presentation should actively involve audience. The audiences evaluate the clarity and appeal of presentation according to criteria determined in advance by the whole class.

f. Stage 6: Evaluation

In the final stage, students share feedback about the topic, about the work they did, and about their affective experiences. Teacher and students collaborate in evaluating students learning. Assessment of learning should evaluate higher-level thinking.

## 2. The Advantages of Group Investigation Method

Below are the advantages of Group Investigation Method:

- a. This method considers learners as active participants in all aspects of school life, making decision that determine the goals toward which they work (Slavin, 1995: 112)
- b. The teacher's role in Group Investigation is as a resource person and facilitator (Slavin, 1995: 113)

- c. The skillful teacher can design inquiries appropriate to the students' abilities and to his or her own ability to manage the investigation (Joyce and Weil, 1992: 50).
- d. Group Investigation necessitates more sophisticated classroom norms and structures than approaches that are more teacher centered, it also requires teaching students good communication and group process skills (Arends, 1997: 121)
- e. By implementing Group Investigation, the social-affective aspects of the group, its intellectual exchange, and the meaning of the subject matter itself provide the primary sources of meaning for students' effort to learn (Slavin, 1995: 112)
- f. Group Investigation appears likely to nurture interpersonal warmth and trust, respect for negotiated rules and policies, independence in learning, and respect for the dignity of others.
- g. This method offers students to participate in the development of the social system and, through experience, gradually learn how to apply the scientific method to improve human society (Joyce and Weil, 1992: 41)
- h. In Group Investigation class, teacher and students experience a variety of academic and non academic activities that establish norms of appropriate cooperative behavior in the classroom (Slavin: 1995: 112).
- i. The more pervasive the cooperative climate applied in group investigation, the more positive the students toward both the learning and task and toward each other (Sharan and Hertz-Lazarowitz in Joyce and Weil, 1992: 50).

- j. Group Investigation implements greater social complexity than some other methods, (Sharan and Hertz-Lazarowitz in Joyce and Weil, 1992: 50) state that the greater social complexity would increase achievement of more complex learning goals and the learning of information and basic skills as well.
- k. Group Investigation is appropriate for integrated study project that deal with the acquisition, analysis, and synthesis of information in order to solve a multi-faceted problem (Slavin, 1995: 112).
- l. Group Investigation is highly versatile and comprehensive; it blends the goals of academic inquiry, social integration, and social process of learning (Joyce and Weil, 1992: 51).
- m. Group Investigation can be applied in teaching math and reading (Joyce and Weil, 1992: 49)
- n. Group Investigation would be ideal for teaching about history and culture of country or about the biology of the rain forest (Slavin, 1995: 112)
- o. Group Investigation can be used in all subject areas, with all ages level, when teachers desires to emphasize the formulation and problem-solving aspects of knowledge rather than the intake of preorganized, predetermined information (Joyce and Weil 1992: 51).

### 3. The Disadvantages of Group Investigation Method

Besides having advantages, Group Investigation also has disadvantages, they are:

- a. Group Investigation Method is perhaps the most complex of the cooperative learning methods and the most difficult to implement (Arends, 1997: 120).
- b. Group Investigation will not be appropriate for teaching map skills or the periodic tables of elements (Slavin, 1995: 112).
- c. Group Investigation cannot be implemented in an educational environment that doesn't support interpersonal dialogue or that disregards the affective-social dimension of classroom learning (Slavin, 1995: 112).
- d. In implementing this method, if students have not had an opportunity to experience the kind of social interaction, decision making, and independent inquiry called for this method, it may take some time before they function at high level (Joyce and Weil, 1992: 49).

### C. Direct Instructional Method

According to Arends (1997: 64), Direct Instructional Method is an approach to teaching that helps students learn basic skills and acquire information that can be taught in a step-by-step fashion. The Direct Instructional Method was designed to improve the basic education of children from economically disadvantaged backgrounds (Kenny, 1980: 1). It is supported by Becker (2001: 33), he states that the major goal of the Direct Instructional Method is to improve the basic education of children from economically disadvantaged backgrounds

and thus increase their life options. This method is has been developed over 30 years by Engelmann and Becker, the method had its roots in Bereiter and Engelmann's experimental preschool and in Becker's behavioral research on classroom management.

Rooted in behavioral and cognitive theories, the Direct Instructional approach propounds that concepts, principles, and ideas be presented in an organized manner in order to facilitate learning. Learning material designed using this approach is organized by the teacher and progresses deductively - from the general to the specific (Valiathan, 2009: 2). The implementation of Direct Instruction Method is primarily teacher directed; by using this method, the lesson requires a most careful structuring and orchestration by the teacher (Arends, 1997: 67). In addition, Direct Instructional Method is used to describe learning material in which the teacher or expert transmits information directly to learners structuring learning time to reach a clearly defined set of objectives as efficiently as possible (Valiathan, 2009: 2). Like any approach to teaching, expert execution of a Direct Instruction lesson requires specific behaviors and decisions by teachers during planning, while conducting, and while evaluating its effects (Arends, 1997: 75)

Direct Instructional Method is academic focus. It means that academic focus is one of the highest priorities on the assignment and completion of academic task in the classroom (Joyce and Weil, 1986: 326).

Direct Instructional Method is applicable to any subject, but it is more appropriate for performance-oriented subjects such as reading, writing,

mathematics, music and physical education (Arends, 1997: 75). In addition, the method emphasizes small-group, face-to-face instruction by a teacher using carefully sequenced, daily lessons in reading, arithmetic, and language (Becker, 2001: 33).

### **1. The Teaching Procedure of Direct Instructional Method**

A Direct Instructional lesson proceeds through five phases (Arends, 1997: 79). They are:

- a. Provide objectives and establish set.
- b. Demonstrate the skill or understanding that is the focus of the lesson.
- c. Provide guided practice.
- d. Check for understanding and provide feedback
- e. Assign independent practice.

### **2. The Advantages of Direct Instructional Method**

Below are the advantages of Direct Instructional Method:

- a. Direct Instructional Method is applicable to teach any subject, but it is most appropriate for performance-oriented subject such as reading, writing, mathematics, music, and physical education (Arends, 1997: 75).
- b. Direct Instructional Method is appropriate for teaching the skill components of more information oriented subject such as history or science (Arends, 1997: 75).
- c. Direct Instructional Method was superior both to controls schools and to every other method in fostering basic reading and math skills, higher-order cognitive-conceptual skills, and even self-esteem (Kozloff and LaNunziata in

<http://www.google.co.id/#hl=id&q=definition++of+Direct+Instruction+method.+pdf&start=20&sa=N&fp=3c535af0b522fb05>).

- d. Direct Instructional Method is effective when the primary objective is the learners' mastery of standardized facts, concepts, rules and procedures, when the content and available resources are too many, and spread out, with a need to categorize, structure and translate it into more learnable form, and when the learning group to be addressed is a fairly large size (Valiathan, 2009: 2)
- e. Direct Instructional Method requires a great deal of teacher creativity in attending to the needs and progress of all students and in designing expansion activities (Bessellieu, Kozlof, and Rice, 2002: 14).
- f. Direct Instructional Method is based on the principles of precision teaching, behavior-change technology (Kenny, 1980: 2).

### **3. The Disadvantage of Direct Instructional Method**

The disadvantages of Direct Instructional Method are as below:

- a. Direct Instructional Method is less appropriate when the teacher is trying to promote social skills or to teach creativity, higher-level thinking or abstract concepts and ideas (Arends, 1997: 75).
- b. Direct Instructional Method is not appropriate for teaching attitudes or understanding of important public issues (Arends, 1997: 75).
- c. The use of explicitly detailed lessons—scripts— in Direct Instructional Method has been criticized as restricting teachers' initiative (Becker, 2001: 35).

- d. The use of rapid-paced, teacher-directed, small-group instruction in Direct Instructional Method has often been criticized as pushing or placing too much on young children (Becker, 2001: 35).

## **D. Schemata**

### **1. The Definition of Schemata**

The kinds of assumption people make about the world depend on what they have experienced and how their minds have organized the knowledge they have got from their experiences. A useful way of thinking about this is provided by schema theory. There are various influential ways of defining schema, and nearly all cognitive definitions of schema stem from Bartlett (1932), he claimed schema as an active organization of past reactions of past experiences, which must always be supposed to be operation in any well-adapted organic response. Rumelhart (1980) put forward the concept of schema theory basically as a theory of how knowledge is mentally represented in the mind and used. He wrote that all knowledge is packaged into units. These units are the schemata. Three years later, Widdowson defined schema as cognitive constructs which allow for the organization of information in a long-term memory (Xiao-Hui, Jun and Hua in <http://www.linguist.org.cn/doc/uc200711/uc20071104.pdf>).

Nuttal (1996: 7) states schema (plural schemata) is a mental process. It is abstract because it is not related to any particular experience, although it derives from all the particular experiences people had. It is a structure because it is organized; it includes the relationship between its component parts. Nunan (1993: *commit to user*)

33) defines schemata as a mental structure which stores people's knowledge, and theory of comprehension based on schemata is called schema theory. According to Hyland (2007: 55), schemata are system for storing or retrieving past knowledge.

## 2. Schemata in Reading Comprehension

According to schema theory, a text doesn't by itself carry meaning. Brown (2001: 299) views that reader brings information, knowledge, emotion, experience, and culture- those are schemata- to the printed word.

Hyland (2007: 55) states that originally a cognitive perspective on reading comprehension, schema theory suggests that reader can only engage with a text actively if they are able to relate it to something they have already known.

In addition, Nunan (1993: 33) states that according to schema theory, reading is an interactive process between what a reader already knows about a given topic or subject and what the writer writes, it is not simply a matter of applying decoding conventions and grammatical knowledge to the text. Good readers are able to relate the text and their own background knowledge.

Moreover, Clarke and Silberstein in Brown (2001: 299) state that research has shown that reading is only incidentally visual. More information is contributed by the readers than by the print out on page. That is, readers understand what they read because they are able to take the stimulus beyond its graphic representation and assign it membership to an appropriate group of concepts already stored in their memories. Skill in reading depends on the efficient interaction between linguistics knowledge and knowledge of the world.

### 3. Types of Schemata

As noted earlier, schema refers to the knowledge readers bring to a text. Research on the theory of schema has had a great impact on understanding reading, and researchers have identified several specific types of schemata (Aeborsold and Field, 1997: 16).

#### a. Linguistic schemata

According to Aeborsold and Field (1997: 17), linguistic schemata include the decoding features the reader needs to recognize words and see they fit together in sentence. In addition, linguistic schemata refer to readers' existing language proficiency in vocabulary, grammar and idioms; they are the foundation of other schemata (<http://www.linguist.org.cn/doc/uc200711/uc20071104.pdf>). As it is known, linguistic knowledge plays an essential part in text comprehension. Without linguistic schemata, it is impossible for the reader to decode and comprehend a text. Therefore, the more linguistic schemata a reader has in his mind, the faster the reader acquires information and the better understanding the reader may get.

#### b. Formal schemata

Brown (2001: 230) states that formal schemata consist of the reader's knowledge about discourse structure. In addition, formal schemata refer to the organizational forms and rhetorical structures of written text (Carell in Aebarsold and Field, 1997: 17). Formal schemata, according Xiao-Hui, Jun and Hua in <http://www.linguist.org.cn/doc/uc200711/uc20071104.pdf>, include knowledge of different text types and genres, and also include the knowledge that different types

of texts use text organization, language structures, vocabulary, grammar, and level of formality differently. Formal schemata are described as abstract, encoded, internalized, coherent patterns of meta-linguistic, discourse and textual organization that guide expectation in our attempts to understand a meaning of piece of language. Readers use their schematic representations of the text such as fictions, poems, essays, newspaper articles, academic articles in magazines and journals to help comprehend the information in the text. Studies show that the knowledge of what type and genre the text is can facilitate reading comprehension for readers because the type of the text will offer detailed evidence of the content of the text. Nonetheless, compared with the other types of schemata, the formal schemata offer less power in the reading process (Carrell in Xiao-Hui, Jun, and Hua in <http://www.linguist.org.cn/doc/uc200711/uc20071104.pdf>).

### c. Content schemata

Content schemata provide readers with a foundation, a basis for comprehension (Aebarsold and Field, 1997: 17). In addition, content schemata include what the reader knows about people, the world, culture, and universe (Brown, 2001: 300). Content schemata refer to the background knowledge of the content area of a text, or the topic a text talks about. Moreover, Xiao-Hui, Jun, and Hua in <http://www.linguist.org.cn/doc/uc200711/uc20071104.pdf> state that content schemata include topic familiarity, cultural knowledge, and previous experience with a field. Content schemata deal with the knowledge relative to the content domain of the text, which is the key to the understanding of texts. Since one language is not only the simple combination of vocabulary, sentence structure

and grammar but also the bearer of different levels of the language's culture. To some extent, content schemata can make up for the lack of language schemata, and thus help learners understand texts by predicting, choosing information and removing ambiguities.

Many studies show that readers' content schemata influence their reading comprehension more greatly than formal schemata. On the whole, the familiarity of the topic has a direct influence on readers' comprehension. The more the reader knows about the topic, the more easily and quickly he gets the information of the text. Therefore, if one wants to be an efficient reader, he needs to try to know the knowledge about more fields and topics. Learners with more prior knowledge can better comprehend and remember more the text.

#### **4. The Three Types of Schemata and Reading Comprehension**

The importance of schematic knowledge is now widely acknowledged in foreign language teaching and many researches in the schema-oriented realm of EFL reading have been carried out. Xiao-Hui, Jun and Hua (in <http://www.linguist.org.cn/doc/uc200711/uc20071104.pdf>) explained the relationship of the three types of schemata and the reading comprehension as below:

##### **a. Linguistic schemata and reading comprehension**

As mentioned before, linguistic schemata refer to readers' existing language proficiency in vocabulary, grammar and sentence structure. As the basis of comprehension, language knowledge plays an important role on understanding of the text, especially for learners at the elementary stage of learning. Without

basic language knowledge, no reading strategy or skill can function effectively. Therefore, the more language schemata readers have in their mind, the more information readers may acquire from the text, and the more effective readers they may become.

#### b. Formal schemata and reading comprehension

Formal schemata refer to the organizational forms and rhetorical structures of written texts, including knowledge of different text types or genres, and the acknowledgement that different types of texts use text organization, language structures, vocabulary, grammar and level of formality differently.

Carrel (1984) made an experiment to investigate whether teacher can facilitate ESL/EFL reading comprehension by teaching text structure based on schematic knowledge. The result of the experiment proved that explicit teaching of the text structure can improve students' reading comprehension. Different reading materials bear different characteristics and pose the correspondent reading requests for readers. A suitable employment of formal schemata plays a significant role in reading.

#### c. Content schemata and reading comprehension

Content schemata refer to the knowledge relative to the content domain of reading materials, which is the key to the understanding of a text, as a language not only consists of vocabulary, grammar, and sentence structures, but also the carrier of different levels of culture. Studies proved that content schemata affect comprehension and remembering more than formal schemata do for text organization. Readers remembered the most when both the content and rhetorical

forms were familiar to them while unfamiliar content may cause more difficulties in correct comprehension.

Based on the theories previously discussed, the writer concludes that schema (plural schemata) is a mental process; it is a system for storing or retrieving past knowledge and experience. Schemata play important role in reading. Students will use their schemata in interpreting the text and understanding the message of the text.

There are three aspects of schemata; they are linguistic, formal, and content schemata. Linguistic schemata refer to readers' existing language proficiency in vocabulary, grammar, idiom, and sentence structure; they are the foundation of other schemata. Formal schemata refer to the organizational forms and rhetorical structures of written texts, including knowledge of different text types and genres. Content schemata refer to the background knowledge of the content area of a text, or the topic a text talks about.

In conclusion, the researcher makes a construct of schemata in reading comprehension as a mental process of activating a system for retrieving past knowledge or experience to interpret the text and understand the message of the text. The indicators below show that readers have complete schemata in reading comprehension if they have the knowledge of:

- a. Linguistic schemata, such as recognizing words, grammar, idiom, and sentence structure.
- b. Formal schemata, such as identifying the language features of the text, text organization, and text types or genres.
- c. Content schemata, such as finding the topic or content area of the text.

## E. Review of Related Researches

In this study, the writer uses some previous researches as guidance to conduct her research. The researches below have related topic with her study. They are:

### 1. The Effectiveness of Reciprocal Teaching to Teach Reading Viewed from Students' Intelligence

A thesis entitled *The Effectiveness of Reciprocal Teaching to Teach Reading Viewed from Students' Intelligence (An Experimental Study at the Fourth Semester Students of the English Department of STAIN Zawiyah Cot Kala Langsa in the 2009/2010 Academic year)* was written by Nina Afrida, a graduate of English Education Department, Graduate School, Sebelas Maret University, Surakarta in 2010.

This research is aimed at finding out whether: (1) reciprocal teaching model is more effective than direct instruction model to teach reading; (2) students who have high intelligent have better reading skill than those who have low intelligent; (3) there is an interaction effect between teaching models and students' intelligence on the students' reading skill.

This research is an experimental research. The population is the fourth semester of the English department of STAIN Zawiyah Cot Kala langsa in the 2009/2010 academic year. It consists of 166 students. Cluster random sampling is used to get the sample. The sample used in this research is 40 students of the English Department 3 as the experimental class and 40 students of the English Department 1 as the control class. The techniques of collecting data in this

research are tests (reading test and intelligence test). Before the reading test is used, a tryout is done to know the validity and reliability. The techniques of analyzing the data are descriptive statistics in looking for mean, standard deviation, mode, median, and inferential analysis. The researcher uses normality test adopting Liliefors and homogeneity testing adopting *chi-square* ( $X$ ) test. The data are analyzed using ANOVA 2x2 or F-test. To know which teaching model is more effective and which group is better, the Tukey's test is used. The critical value used in this test is  $\alpha = 0.05$ .

Based on the result of this research, the findings are: (1) reciprocal teaching model is more effective than direct instruction model to teach reading; (2) the students who have high intelligent have better reading skill than those who have low intelligence; (3) there is an interaction effect between teaching models and students' intelligence in terms of the students' reading skill.

Referring to the finding above, it can be concluded that reciprocal teaching model is a very effective model for teaching reading to the fourth semester students of the English Department of STAIN Zawiyah Cot Kala Langsa. Therefore, it is suggested that: (1) it is better for teacher to apply reciprocal teaching model in instructional process; (2) the students must be aware of the importance of active involvement in teaching learning process; and (3) the other researchers who would like to conduct future research of some kind with different sample and different student's condition, this result of study can become reference.

## **2. The Effectiveness of Authentic Material for Teaching Reading Viewed from Student's Motivation**

A thesis entitled *The Effectiveness of Authentic Material for Teaching reading Viewed from Student's Motivation: An experimental study in MAN Sukoharjo, Central Java, in the Academic year 2008/2009* was written by Yalik Indrowati, a graduate of English Education Department, Graduate School, Sebelas Maret University, Surakarta in 2009.

The objectives of the research is to know: (1) whether or not there is a different effect on the student's reading competence between those who are taught using authentic material and those who are taught using textbook; (2) whether or not there is a different effect on the student's reading comprehension between those who have high motivation and those who have low motivation; and (3) whether or not there is an interaction between teaching materials and student's motivation for teaching reading.

The research was conducted in MAN Sukoharjo, Central Java. The research was started from July to April 2009. The method used for the research is experimental study. The population of the research is students of MAN Sukoharjo, at the tenth grade. The sampling technique used is cluster random sampling. The sample of the research is two classes; they are experimental class which is taught using authentic material and control class which is taught using textbook. The number of sample used in this research is 30 students from experimental class and 30 students from control class. The instruments used to collect the data are student's motivation questionnaire in the form of likert scale with four responses

and reading test in the form of multiple choices with four options. Both instruments have both been tried out first, in order to know the validity and reliability of the instruments. Meanwhile, to analyze the data, Multifactor Analysis of Variance (ANOVA) test of 2 X 2 is used. Before conducting the ANOVA test, normality and homogeneity test were conducted.

The result of data analysis of reading test shows that: (1) there is a significant difference of effect on the student's reading competence between those who are taught using authentic material and those who are taught using textbook. The students who are using authentic material have better reading competence than those who are taught using textbook; (2) there is a significant difference of effect on the student's reading competence between those who have high motivation and those who have low motivation. Students who have high motivation have better reading competence than those who have low motivation; and (3) there is an interaction between teaching materials and student's motivation for teaching reading.

Hopefully, the research findings can be beneficial for teachers in determining and selecting the teaching materials for their students, particularly in teaching reading. Therefore, the English teachers are recommended to apply them. They also should be creative in exploring the authentic material for teaching reading. The students are expected to always keep reading from many sources of authentic materials in order to improve their competencies. They also should seriously and actively participate in learning reading. Finally, it is hoped that the

thesis becomes input for other researchers to do research dealing with the use of authentic material for teaching reading.

### **3. The Effectiveness of Jigsaw Model to Teach Reading Viewed from the Students' Interest**

A thesis entitled *The Effectiveness of Jigsaw Model to Teach Reading Viewed from the Students' Interest (An Experimental Study in SMP N 3 Kartasura in 2008/2009 Academic Year)* was written by Novianni Anggraini, a graduate of English Education Department, Graduate School, Sebelas Maret University, Surakarta in 2009.

This research is intended to know the effectiveness of jigsaw model to teach reading viewed from the student' interest. The teaching model as the experimental variables is two kinds, Jigsaw model and Direct Instruction Model. The interest is divided into high and low interest.

The research was conducted in SMP Negeri 3 Kartasura. The research method was experimental study. The population of the research is eighth grade students of SMP N 3 Kartasura in 2008/ 2009academic year. The writer used cluster random sampling to get the sample. The technique of collecting the data was non test (questionnaire) and a test (reading test). The two instruments were valid and reliable after both were tested. The data of reading test were analyzed by using multifactor analysis 2x2, then followed by analyzing it using Tuckey test to find which group is better or which model is more effective.

Based on the result of inferential analysis of the data, there are some conclusions that can be drawn. First, Jigsaw is more effective than Direct  
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Instruction Model for teaching reading because the mean score of the reading test of the students who are taught by using Jigsaw model (69.6) is higher than the students who are taught by using Direct Instruction Model (65.18). Second, Jigsaw is more effective for teaching reading for the students having high interest because the mean score of the reading test of the students who are taught by using Jigsaw (78.18) is higher than the students who are taught by using Direct Instruction Model (62.73). Third, Direct Instruction Model is more effective for teaching reading for students having low interest because the mean score of the reading test of the students who are taught by using Direct Instruction Model (67.64) is higher than the students who are taught by using Jigsaw (65.18). There is an interaction between teaching model and the degree of the students' interest.

It is hoped that the teacher can select suitable teaching model for teaching reading which appropriate for the students having high or low interest. The teaching model used in teaching reading depends on the degree of interest of the students.

#### **4. The Effectiveness of Inquiry-based Teaching and Learning to Teach Reading Viewed from Students' Motivation**

A thesis entitled *The Effectiveness of Inquiry-based Teaching and Learning to Teach Reading Viewed from Students' Motivation: An Experimental Study in SMPN 26 Surakarta* was written by Vera Dwi Martani, a graduate of English Education Department, Graduate School, Sebelas Maret University, Surakarta in 2009.

This research is intended to determine the effectiveness of inquiry-based teaching and learning to teach reading viewed from students' motivation. The teaching method as the experimental variable is of two kinds: Inquiry-based Teaching and Learning and Traditional Method. The motivation as the attribute variable is divided into high and low motivation.

The research was carried out at SMPN 26 Surakarta, from May 2008 up to February 2009. The research method used was an experimental study. The population was the ninth grade students of SMPN 26 Surakarta in 2008-2009 academic year. The sample was taken with the cluster random sampling technique. They were 36 students equally distributed into four groups. The technique of collecting data was a non-test (a questionnaire) and a test technique (a reading test). The questionnaire consisted of 47 items and the reading test consisted of 40 items with four options each. The two instruments were valid and reliable after both were tried out. The data were the result of the reading test, which were analyzed by multifactor analysis of variance  $2 \times 2$ . Then, it was analyzed by Tukey test to determine which method is better or more effective.

Based on the result of inferential analysis of the data, there are some conclusions that can be drawn. First, inquiry based teaching and learning is more effective than traditional method for teaching reading. Second, inquiry-based teaching and learning is more effective than traditional method for teaching reading for students having high motivation. Third, traditional method is more effective than inquiry-based teaching and learning for students having low motivation. There is an interaction between the method of teaching and

motivation. The inquiry-based teaching and learning is effective for students having high motivation and traditional method is effective for those having low motivation.

It is hoped that the result of the study can be useful for teachers to determine and select the suitable teaching method for their students. The study shows that the effect of teaching methods depends on the degree of motivation. Therefore, the teachers should choose the teaching method, which is suitable for high or low motivated students.

## **F. Rationale**

### **1. The Difference between Group Investigation Method and Direct Instructional Method**

The basic idea of Direct Instructional Method is to get students to learn as much as academic content such as reading as efficiently as possible and in straight forward way. Direct Instructional Method is highly structured and teacher directed. The students are under the teacher control. The teacher direction and control occur when the teacher selects and directs the learning task, determines grouping patterns, maintains a central role during instruction, keeps students choice and freedom. This method minimizes the amount of nonacademic pupil task.

By using Direct Instructional Method, students will be passive learners, their creativity will not be developed, their social skill will not be improved and their critical thinking will not be stimulated. This method will not make students

aware of the condition that happened around them, since it is not teaching the public issues. In addition, this method seems can satisfy the passive learners because they just become follower and depend on the teacher during the teaching learning process. They just wait for the teacher's explanation and translation of word by word about the text given to them to get the message from the text.

In the teaching learning process, teacher provides feedback and correction. It makes the student passive in joining the class. There is no democratic education in this method, since everything is decided by teacher and the students are not involved in designing the task. The students' social skill will not get improvement since it is only focused on academic content. And students' creativity and critical thinking will not be developed. As a result, the students become passive learners and they will get bored.

On the contrary, Group Investigation Method requires different way in teaching learning process, especially in reading. Group Investigation Method implements student-centered activities. Here, the teacher becomes a facilitator, she prepares a topic to study and the students are involved to give their idea in making the subtopics. After the subtopics have been decided by them, the students choose the topic based on their interest, so democratic education is offered in this method. By choosing the subtopics, the group will be formed by itself, it means, teacher doesn't determine it. The members of the group are heterogeneous. By working in a group, there will be interaction among the members and cooperative works will occur, so the social skill will be developed. In the group, students will give their idea and their critical thinking to solve the problem based on their chose

topic. They will find some references to read, and they will find information to be analyzed and synthesized. In this process, besides as a facilitator, lecturer can be a source for students, she monitors the students in preparing a report of their investigation. After finishing the investigation, students will present their report, by presenting the report, it means students can deliver their ideas and the message of the references that they have read. Finally, there will be an evaluation, the evaluation is not only conducted by the teacher, but there will be peer correction. Students and teacher evaluate each group's contribution to the work of the class as a whole. Evaluation can include either individual or group or both.

Based on the reasons above, it can be assumed that Group Investigation Method is more effective than Direct Instructional Method to teach reading to the English 3 students of Tarbiyah Department of STAIN Pekalongan.

## **2. The Difference between the Students who Have High Schemata and the Students who Have Low Schemata in Reading**

The students who have high level of schemata usually will be more active in teaching learning process, for example when they study reading. They will relate the printed words in the text to the information or experience they have. They are more active than those who have low level of schemata. Students who have high schemata will have good ability in interpreting a text. They will relate their linguistic, formal, and content schemata to the text they read, so it will be easy for them to understand the message of the text. It will be easy for them to analyze and synthesize the text.

On the contrary, the students who have low schemata will meet some difficulties in reading. They will feel worried when they have to join the reading class. Their low schemata make them not able to understand the message of the text. They will be passive students and depend on their friends who have high level schemata in comprehending the text.

In conclusion, it can be supposed that the students who have high schemata have better reading ability than of those who have low schemata.

### **3. The Interaction between Methods of Teaching and Schemata to Teach Reading**

By using Group Investigation Method in teaching reading, the lecturer will stimulate the students to be more active, and the role of the teacher is as a facilitator to prepare the topic to study. Since the aim of the method is to solve a problem based on the sub topics the students choose, schemata will play important role in interpreting a text from the references. The linguistic, formal, and content schemata are useful for students in understanding the message of the text. Schemata will help students in analyzing and synthesizing the text, so they can prepare the report of their investigation well. Group Investigation will challenge their reading ability because they also work in a group; so, there will be cooperative works. They will activate their schemata and share their knowledge and experience to understand the text. This method is supposed to be more effective for students having high schemata.

The teaching learning process above is very different from Direct Instructional Method. This method is teacher-directed and teacher-centered, and students become passive learners. The teacher always helps students in comprehending the text when the students do reading activity. She translates word by word; gives the meaning of the new words almost all the time of reading process. Students' schemata are not applicable and not be appreciated by the teacher. Besides, since the activity is teacher-centered and there is no interaction among the students, so there is not any cooperative works among them. That is why Direct Instructional Method is supposed to be more effective for the students who have low level of schemata toward students' reading skill, since the teaching learning process is teacher centered and students who have low level of schemata are passive in joining reading activities, they don't do any efforts to activate their schemata to understand the message of the text.

Comparing those two methods in teaching reading, Group Investigation Method is supposed to be more effective for students having high schemata, while Direct Instructional Method is more effective for students having low schemata; so it is assumed that there is an interaction between teaching methods and students' schemata.

## G. Hypothesis

Based on the rationale, the writer proposes the hypotheses as follows:

1. Group Investigation Method is more effective than Direct Instructional Method to teach reading to the English three students of Tarbiyah Department of STAIN Pekalongan.
2. The students who have high level of schemata have better reading comprehension than the students who have low level of schemata.
3. There is an interaction effect between teaching methods and the level of students' schemata on students' reading comprehension; Group Investigation Method is more effective than Direct Instructional Method to teach reading for students who have high schemata, while Direct Instructional Method is more effective than Group Investigation Method to teach reading for students who have low schemata.

## CHAPTER III

### RESEARCH METHODOLOGY

#### A. The Place and Time of the Study

This research was conducted in Sekolah Tinggi Agama Islam Negeri (STAIN) Pekalongan. It is located on Jl. Kusuma Bangsa No. 9 Pekalongan Central Java, phone (0285) 412575 fax (0285) 412575. It has 3 Departments, they are: *Syari'ah*, *Tarbiyah*, and *Ushuludin* Department. The researcher has conducted this research in *Tarbiyah* Department. This research was done from August to November 2011.

#### B. Research Method

Research method that is used in this study is experimental research method. Fraenkel and Wallen (1993: 230) state that experimental research is one of the most powerful research methodologies researcher can use. It is the only type of research that directly attempts to influence a particular variable, and it is the only type that can really test hypothesis about cause-and-effect relationships. In an experimental study, researchers look at the effect of at least one independent variable on one or more dependent variables. The independent variable in experimental study is also frequently referred to as experimental or treatment variable. The dependent variable, also known as the criterion or outcome variables, refers to the result or outcomes of the study. In this kind of study, researchers manipulate the independent variable. They decide the nature of treatment (that is, what is going on to happen to the subject of the study), to whom

it is to be applied, and to what extent. Independent variables frequently manipulated in educational research include methods of instruction, types of assignment, and learning materials. Meanwhile, dependent variables frequently studied include achievement and interest in a subject.

In this research, the researcher chose experimental research because the aim of this study is dealt with revealing the effect of teaching methods and schemata as the moderator variable towards the reading comprehension of Tarbiyah students. This experimental study involves three kinds of variables. This independent variable is also recognized as experimental or treatment variable. The independent variable of this study is teaching methods. The teaching methods are the factors of this study which are measured, manipulated or selected to determine their relationship with the observed phenomenon. The teaching methods that are used in this study are group investigation and direct instruction. These two methods will be treated differently for groups of students. The group that is taught using group investigation functions as experimental group. On the other hand, the group which is taught using direct instruction functions as control group. This comparison group is very important in the experimental research because it serves the purpose of determining whether the treatment has had an effect or whether one treatment is more effective than another (Fraenkel and Wallen, 1993: 242). The function of direct instruction as the comparison group is to determine whether group investigation works best when it is applied to the Tarbiyah students related to their schemata. The second variable of this study is dependent variable. It is the factor which is observed and measured to determine the effect of the independent

variable. The dependent variable in this study is reading comprehension of the Tarbiyah students. The third variable is a kind of variable that will be given different name based on the point of view. The term schemata, as the third variable, can be translated into such kinds of variable. Schemata are considered as moderator variable. Moderator variable is defined by Tuckman (1988: 82) as the factor which is measured, manipulated, or selected by the experimenter to discover whether it modifies the relationship of the independent variable to an observed phenomenon. This variable is also assumed as secondary independent variable that is selected to determine if it affects the relationship between the primary independent variable and dependent variable. In this research, the writer is interested to study the effect of independent variable ( $X$ ), or teaching methods, on dependent variable ( $Y$ ), or reading comprehension mastery of Tarbiyah students, but suspects that the nature of the relationship between  $X$  and  $Y$  is altered by the level of a third factor  $Z$ , or the student's schemata, then  $Z$  can be analyzed as a moderator variable.

### **C. Population, Sample, and Sampling**

#### **1. Population**

According to Fraenkel and Wallen (1993: 68) population is the group of interest to the researcher, the group to whom the researcher would like to generalize the results of the study. The population of this research is the students of English 3 class of Tarbiyah Department of STAIN Pekalongan in 2011/2012 academic years. It consists of 4 classes (150 students).

## 2. Sample

A sample is a set of elements taken from a larger population according to certain rules (Christensen 2000: 158). The sample used in the research is two classes: (1) 38 students of A class, and (2) 38 students of B class. Class A is the experimental class and class B is the control class.

## 3. Sampling

The writer uses cluster random sampling to get the sample. Cluster random sampling is the selection of groups, or clusters, of subjects rather than individuals (Freankel and Wallen, 1999: 72). The step of the sampling are: (1) from the 4 homogeneous classes, two classes are taken randomly; the classes which are chosen are class A and class B; (2) from those two classes, the researcher chose the class randomly, one as an experimental class and the other as a control class.

Arikunto (2006:133) suggests that cluster random sampling can be used if the number of the population is too large to be observed wholly. Considering the number of population the technique of cluster random sampling is used to take the samples. Each class is divided into two groups, students who have high level of schemata and the students who have low level of schemata. One of the classes is taught by Group Investigation Method and the other is taught by the Direct Instructional Method. So, there are four groups: (1) students with high level of schemata who are taught by Group Investigation Method; (2) students with high level of schemata who are taught by Direct Instructional Method; (3) students with low level of schemata who are taught by Group Investigation Method; and (4) students with low level of schemata who are taught by Direct Instructional Method.

## D. Technique of Collecting the Data

According to Fraenkel and Wallen (1999:89) data are the kinds of information researchers obtain on the subjects of their research. The way to get the data in a research activity is usually known as a method of collecting data.

The device to collect the data is called as instrument, as stated by Arikunto (2002: 126) instrument is the equipment which is used to observe the research.

In this research, the writer uses an objective test to measure the students' schemata and to collect the data of students' reading comprehension. Heaton (1975: 11) states that the term test will generally be used to refer to a set of items that can be marked objectively. Meanwhile, the term objective refers to the scoring of test. In the objective test, the items are designed in such way so that the scorer will not be able to involve his or her judgment or personal feeling. In addition, objective test items are simple to answer and simple to score. It will be easy for the students to answer the items of objective test. They only have to choose the answers which are provided by the tester, they don't need to construct their own words in answering the questions. The result of the test will be easy to score, since the answer is only correct or incorrect. The scorer doesn't have to include his or her subjectivity in scoring students' answer.

There are two requirements that must be fulfilled in constructing the instrument, they are validity and reliability. Validity is concerned with how well a test measures what it is supposed to measure. Brown (1993: 254) defines validity as the degree to which the test actually measures. The schemata and reading test are tried to know the validity and reliability at the first step. It is done before treatment. The try out is done to the other class which doesn't belong to the experimental and the control one. At the end, the valid and reliable items are used to get the data. The reading test is conducted after treatment (post test).

The formula to measure the validity is as follows:

$$S_t^2 = \sqrt{\frac{\sum x^2}{n}}$$

$$r_o = \frac{\bar{X}_i - \bar{X}_t}{S_t} \sqrt{\frac{p_1}{q_1}}$$

Where:

$\bar{X}_i$  is the mean of correct answer for the item no  $i$

$\bar{X}_t$  is the mean of total score

$S_t$  is the standard deviation

$p_i$  is the proportion of students who respond correctly for the item no  $i$

$q_i$  is the proportion of students who respond incorrectly for the item no  $i$

If  $r_o$  is higher than  $r_t$  the item is valid.

Besides considering the validity of the instrument, reliability of the instrument is also important. Reliability involves consistency, dependability, or stability of the test score. A reliable instrument is one that gives consistent result, as stated by Brown (1993: 253) a reliable test is a test that is consistent and dependable. The consistency of the result would give the researcher confidence that the result accurately represents the achievement of the individuals involved.

To measure the reliability of the instrument, the writer uses the formula as follows:

$$r_{kk} = \frac{k}{k-1} \left( 1 - \frac{\sum pq}{S_t^2} \right)$$

Where:

$r_{kk}$  is the estimated reliability or coefficient of reliability

$k$  is the number of valid items on the test

$p$  is the proportion of students who respond correctly of each item

$q$  is  $1 - p$

$S_i^2$  is observed score variance

Both the tryout test of reading and schemata test has been done in class C of the English 3 students of Tarbiyah Department which consists of 37 students. Every test spends 60 minutes. It is done before the treatment.

The forms of reading and schemata test are multiple choices. In making the instrument to test the students' reading comprehension of English three students, the researcher needs to relate the construct of theories that has been extended before. The reading construct is "reading comprehension is the ability to understand and catch the message of written text by comprehending the meaning of word based on the context, finding explicit information, finding reference, finding implicit information, identifying main ideas, and finding communicative function of text".

For conducting the tryout test, the reading test consists of 50 items. Those items are based on 5 types of texts. They are hortatory exposition, recount, news item, explanation, and descriptive text. They consist of 9 the meaning of word based on the context items, 9 explicit information items, 9 reference items, 9 implicit information items, 9 main ideas items, and 5 communicative function of

text items. All of the tryout items are 50 items. It can be seen from the blue-print of the test (see appendix 3. , p.243).

After conducting the tryout test, the next step is analyzing the data for validity and reliability. The result of the tryout shows that from 50 items, there are 37 valid items. The instrument is reliable with the  $r_{kk}$  obtain is 0.845 which is higher than the  $r_{table}$  0.325; it can be seen in appendix 8. , p. 275. For the reason of making the scoring simpler, the researcher uses only 30 valid items to test the students of the experimental and the control class after the treatment.

To make the instrument of schemata, the writer relates to the construct of theories that has been formulated before. The construct of schemata in reading comprehension is “schemata in reading comprehension are mental process of activating a system for retrieving past knowledge or experience to interpret the text and understand the message of the text by recognizing grammar, identifying text organization and text type, and finding the topic / content area”.

For conducting the tryout test, the schemata test consists of 50 items. Those item are based on 7 types of text. They are descriptive, news item, procedure, recount, hortatory exposition, analytical exposition, and explanation text. They consist of 15 grammar items, 15 text organization items, 10 text type items, and 10 the topic / content area items. All of the tryout items are 50 items. It can be seen from the blue-print of the test (see appendix 9., p. 278).

After conducting the tryout test, the next step is analyzing the data for validity and reliability. The result of the tryout shows that from 50 items, there are 35 valid items. The instrument is reliable with the  $r_{kk}$  obtain is 0.793 which is

higher than the  $r_{table}$  0.325; it can be seen in appendix 15, p. 317. For the reason of making the scoring simpler, the researcher uses 30 items to test the students' schemata. It's done before the treatment.

**E. Technique of Analyzing the Data**

The writer uses a descriptive analysis and inferential analysis in this research. The descriptive analysis is conducted to know the mean, median, mode, and standard deviation of the score of reading. Normality and homogeneity is used before testing the hypothesis. The data are analyzed using multifactor analysis of variance 2X2.  $H_0$  is rejected if  $F_o > F_t$ . If  $H_0$  is rejected the analysis is continued to know the difference of the means between groups using Tukey HSD (Honestly Significant Different) test. The design of multifactor analysis of variance is as follows:

Table 1. Factorial Design 2X2

<b>Teaching Method</b> <b>Schemata</b>	<b>Group Investigation Method</b> <b>(A<sub>1</sub>)</b>	<b>Direct Instructional Method</b> <b>(A<sub>2</sub>)</b>	
<b>High (B<sub>1</sub>)</b>	<b>A<sub>1</sub>B<sub>1</sub></b>	<b>A<sub>2</sub>B<sub>1</sub></b>	<b>B<sub>1</sub></b>
<b>Low (B<sub>2</sub>)</b>	<b>A<sub>1</sub>B<sub>2</sub></b>	<b>A<sub>2</sub>B<sub>2</sub></b>	<b>B<sub>2</sub></b>
	<b>A<sub>1</sub></b>	<b>A<sub>2</sub></b>	

**Note:**

- $A_1$  : The mean score of reading test of experimental class which is taught by using group investigation method
- $A_2$  : The mean score of reading test of control class which is taught by using direct instructional method
- $B_1$  : The mean score of reading test of students having high schemata
- $B_2$  : The mean score of reading test of students having low schemata
- $A_1B_1$  : The mean score of reading test of students having high schemata who are taught by group investigation method
- $A_1B_2$  : The mean score of reading test of students having low schemata who are taught by using group investigation method
- $A_2B_1$  : The mean score of reading test of students having high schemata who are taught by using direct instructional method
- $A_2B_2$  : The mean score of reading test of students having low schemata who are taught by using direct instructional method

**The data are analyzed using the following ways:**

1. The total sum of squares:

$$\sum x_t^2 = \sum X_t^2 - \frac{(\sum X_t)^2}{N}$$

2. The sum of squares between groups:

$$\sum x_b^2 = \frac{(\sum X_1)^2}{n_1} + \frac{(\sum X_2)^2}{n_2} + \frac{(\sum X_3)^2}{n_3} + \frac{(\sum X_4)^2}{n_4} - \frac{(\sum X_t)^2}{N}$$

3. The sum of squares of within groups:

$$\sum x_w^2 = \sum x_t^2 - \sum x_b^2$$

4. The between-columns sum of squares:

$$\sum x_{bc}^2 = \frac{(\sum X_{c1})^2}{n_{c1}} + \frac{(\sum X_{c2})^2}{n_{c2}} - \frac{(\sum X_t)^2}{N}$$

5. The between rows sum of squares:

$$\sum x_{br}^2 = \frac{(\sum X_{r1})^2}{n_{r1}} + \frac{(\sum X_{r2})^2}{n_{r2}} - \frac{(\sum X_t)^2}{N}$$

6. The sum-of-squares of interaction:

$$\sum x_{int} = \sum x_b^2 - (\sum x_{bc}^2 + \sum x_{br}^2)$$

7. The number of degrees of freedom associated with each source of variation:

df for between-columns sum of squares = C - 1

df for between-rows sum of squares = R - 1

df for between-groups sum of squares = G - 1

df for within-columns sum of squares =  $\sum (n-1)$

df for interaction = (C-1) (R-1)

df for total sum of squares = N - 1

Note:

df is the degree of freedom

R is the number of row

G is the number of group

n is the number of subject in one group

N is the number of subjects in all group

After analyzing the data by ANOVA, the researcher uses Tukey HSD test. HSD is Honestly Significant Different. Tukey test is used to know the difference of the means between groups.

1.  $A_1 - A_2$  (The mean of the reading test of the students who are taught by Group Investigation Method compared to the mean of the reading test of the students who are taught by Direct Instructional Method)

$$\text{Between columns } q = \frac{\bar{X}_{c1} - \bar{X}_{c2}}{\sqrt{\text{error.variance}/n}}$$

2.  $B_1 - B_2$  (The mean of the reading test of the students who have high schemata compared to the mean of the reading test of the students who have low schemata)

$$\text{Between rows } q = \frac{\bar{X}_{r1} - \bar{X}_{r2}}{\sqrt{\text{error.variance}/n}}$$

3.  $A_1B_1 - A_2B_1$  (The mean of of reading test of the students who have high schemata and taught by Group Investigation Method compared to the mean of reading test of the students who have high schemata and taught by Direct Instructional Method)

$$\text{Between cells } q = \frac{\bar{X}_{c1r1} - \bar{X}_{c2r1}}{\sqrt{\text{error.variance}/n}}$$

4.  $A_2B_2 - A_1B_2$  (The mean of the reading test of the students who have low schemata and taught by Direct Instructional Method compared to the mean of the reading test of the students who have low schemata and taught by Group Investigation Method)

$$\text{Between cells } q = \frac{\bar{X}_{c2r2} - \bar{X}_{c1r2}}{\sqrt{\text{error.variance}/n}}$$

The statistic test is obtained by dividing the difference between the means by square root of the ratio of the within group variation and the sample size.

$$TS: q = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{S_W^2/n}}$$

## F. Statistical Hypothesis

In this study the researcher proposes three hypotheses. These hypotheses are based on the formulation of the problems as presented in the previous chapter and are illustrated through null hypotheses.

1. Group Investigation Method ( $A_1$ ) is better than the Direct Instructional Method ( $A_2$ ) to teach reading to the English three students of Tarbiyah Department of STAIN Pekalongan in the 2011/2012 academic year.

$$H_0 : \mu A_1 = \mu A_2$$

$$H_a : \mu A_1 > \mu A_2$$

2. The students who have high schemata have better reading comprehension than those who have low schemata.

$$H_0 : \mu B_1 = \mu B_2$$

$$H_a : \mu B_1 > \mu B_2$$

3. There is an interaction effect between teaching methods and the level of students' schemata on students' reading comprehension. Group Investigation Method is more effective than Direct Instructional Method to teach reading for students who have high schemata. On the contrary, Direct Instructional Method is more effective than Group Investigation Method to teach reading for students who have low schemata.

$$H_0 : A \times B = 0$$

$$H_a : A \times B > 0$$

## CHAPTER IV

### THE RESULT OF THE STUDY

This chapter shows the result of the study. It is divided into four parts, namely: the description of the data, normality and homogeneity test, hypothesis test, and the discussion of the result of the study.

#### A. Description of the Data

The data described here are the result of the reading test. It includes the mean, mode, median, standard deviation, and frequency distribution followed by histogram and polygon. Based on the group analyzed, the descriptions of the data are divided into eight groups, namely:

1. The data of the reading test of the students who are taught by Group Investigation Method ( $A_1$ ).
2. The data of the reading test of the students who are taught by Direct Instructional Method ( $A_2$ ).
3. The data of the reading test of the students who have high schemata ( $B_1$ ).
4. The data of the reading test of the students who have low schemata ( $B_2$ ).
5. The data of reading test of the students who have high schemata and taught by Group Investigation Method ( $A_1B_1$ ).
6. The data of the reading test of the students who have low schemata and taught by Group Investigation Method ( $A_1B_2$ ).
7. The data of reading test of the students who have high schemata and taught by Direct Instructional Method ( $A_2B_1$ ).

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8. The data of the reading test of the students who have low schemata and taught by Direct Instructional Method ( $A_2B_2$ ).

To describe the data, the writer works on the highest score, the lowest score, the range, the class, and the interval to know the frequency distribution. The data of each group are presented below:

1. The data of the reading test of the students who are taught by Group Investigation Method ( $A_1$ ).

Descriptive analysis of the data  $A_1$  shows that the score is 50 up to 83. The range is 33, the number of classes is 6, the interval is 6, the mean is 69.24, the mode is 68.5, the median is 74.83, and the standard deviation is 9.27. The frequency distribution of the data  $A_1$  is in table 2, histogram and polygon are presented in figure 1.

Table 2. Frequency Distribution of Data  $A_1$

Class limit	$f_i$	$X_i$	$f_i X_i$	$X_i^2$	$f_i X_i^2$
50-55	3	52.5	157.50	2756.25	8268.75
56-61	6	58.5	351.00	3422.25	20533.5
62-67	7	64.5	451.50	4160.25	29121.75
68-73	8	70.5	564.00	4970.25	39762
74-79	8	76.5	612.00	5852.25	46818
80-85	6	82.5	495.00	6806.25	40837.5
	38		2631.00		185341.5

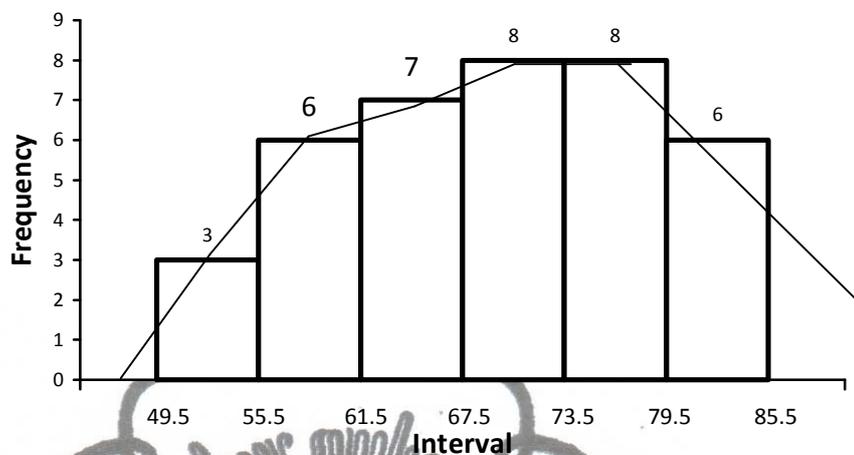


Figure 1. Polygon and Histogram of Data A<sub>1</sub>

- The data of the reading test of the students who are taught by Direct Instructional Method (A<sub>2</sub>).

Descriptive analysis of the data A<sub>2</sub> shows that the score is 50 up to 79. The range is 29, the number of classes is 6, the interval is 5, the mean is 68.30, the mode is 67.8, the median is 69.5, and the standard deviation is 18.97. The frequency distribution of the data A<sub>2</sub> is in table 3, histogram and polygon are presented in figure 2.

Table 3. Frequency Distribution of Data A<sub>2</sub>

Class limit	$f_i$	$X_i$	$f_i X_i$	$X_i^2$	$f_i X_i^2$
50-54	3	51.5	154.50	2652.25	7956.75
55-59	6	56.5	339.00	3192.25	19153.5
60-64	6	61.5	369.00	3782.25	22693.5
65-69	10	66.5	665.00	4422.25	44222.5
70-74	8	71.5	572.00	5112.25	40898
75-79	5	76.5	382.50	5852.25	29261.25
	38		2595.5		164185.5

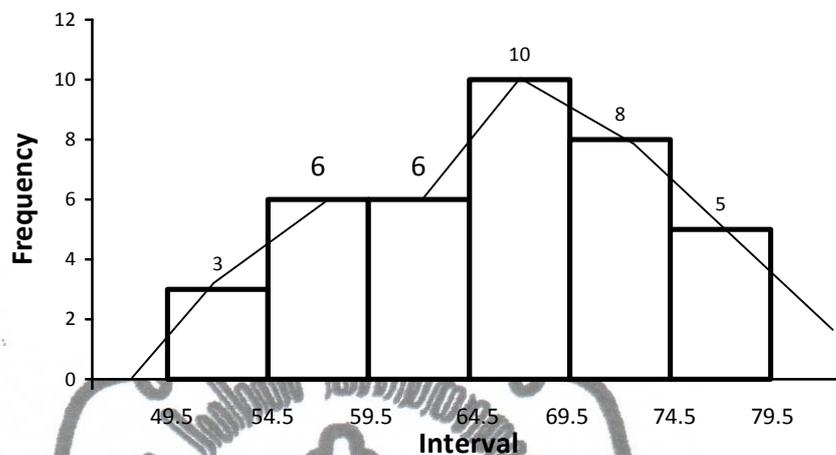


Figure 2. Polygon and Histogram of Data A<sub>2</sub>

- The data of the reading test of the students who have high schemata (B<sub>1</sub>).

Descriptive analysis of the data B<sub>1</sub> shows that the score is 50 up to 83. The range is 33, the number of classes is 6, the interval is 6, the mean is 68.76, the mode is 63.9, the median is 66.9, and the standard deviation is 9.35. The frequency distribution of the data B<sub>1</sub> is in table 4, histogram and polygon are presented in figure 3.

Table 4. Frequency Distribution of Data B<sub>1</sub>

Class limit	$f_i$	$X_i$	$f_i X_i$	$X_i^2$	$f_i X_i^2$
50-55	3	52.5	157.50	2756.25	8268.75
56-61	6	58.5	351.00	3422.25	20533.5
62-67	10	64.5	645.00	4160.25	41602.5
68-73	5	70.5	352.50	4970.25	24851.25
74-79	8	76.5	612.00	5852.25	46818
80-85	6	82.5	495.00	6806.25	40837.5
	38		2613.00		182911.5

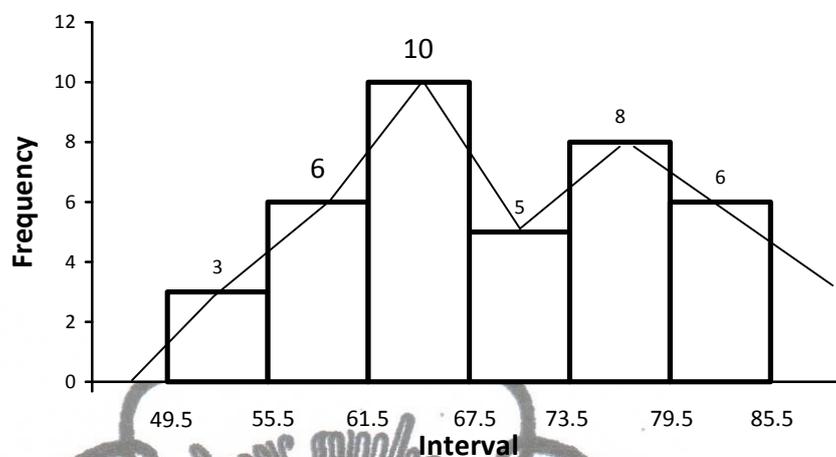


Figure 3. Polygon and Histogram of Data B<sub>1</sub>

- The data of the reading test of the students who have low schemata (B<sub>2</sub>).

Descriptive analysis of the data B<sub>2</sub> shows that the score is 50 up to 79. The range is 29, the number of classes is 6, the interval is 5, the mean is 68.30, the mode is 67.8, the median is 69.5, and the standard deviation is 18.97. The frequency distribution of the data B<sub>2</sub> is in table 5, histogram and polygon are presented in figure 4.

Table 5. Frequency Distribution of Data B<sub>2</sub>

Class limit	$f_i$	$X_i$	$f_i X_i$	$X_i^2$	$f_i X_i^2$
50-54	3	51.5	154.50	2652.25	7956.75
55-59	6	56.5	339.00	3192.25	19153.5
60-64	6	61.5	369.00	3782.25	22693.5
65-69	10	66.5	665.00	4422.25	44222.5
70-74	8	71.5	572.00	5112.25	40898
75-79	5	76.5	382.50	5852.25	29261.25
	38		2595.5		164185.5

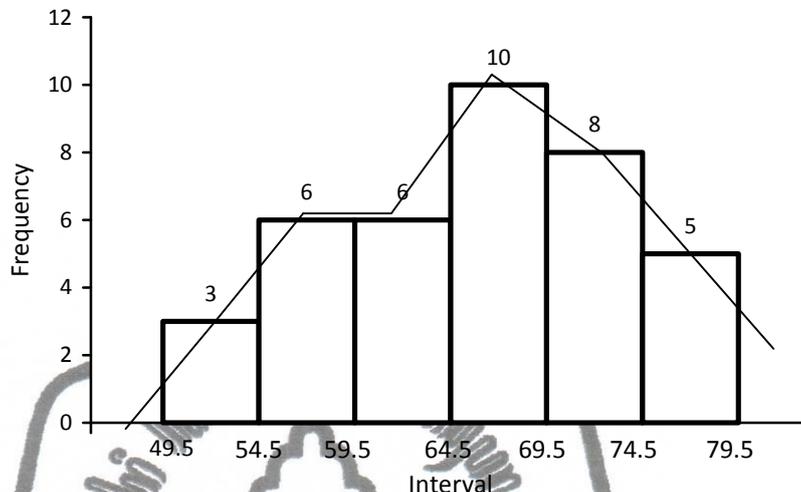


Figure 4. Polygon and Histogram of Data B<sub>2</sub>

- The data of reading test of the students who have high schemata and taught by Group Investigation method (A<sub>1</sub>B<sub>1</sub>).

Descriptive analysis of the data A<sub>1</sub>B<sub>1</sub> shows that the score is 73 up to 83. The range is 10, the number of classes is 4, the interval is 3, the mean is 79.71, the mode is 79.35, the median is 79.67, and the standard deviation is 40.47. The frequency distribution of the data A<sub>1</sub>B<sub>1</sub> is in table 6, histogram and polygon are presented in figure 5.

Table 6. Frequency Distribution of Data A<sub>1</sub>B<sub>1</sub>

Class limit	$f_i$	$X_i$	$f_i X_i$	$X_i^2$	$f_i X_i^2$
73-75	5	74.5	372.5	5550.25	27751.25
76-78	1	77.5	77.5	6006.25	6006.25
79-81	7	80.5	563.5	6480.25	45361.75
82-84	6	83.5	501	6972.25	41833.5
	19		1514.5		120952.8

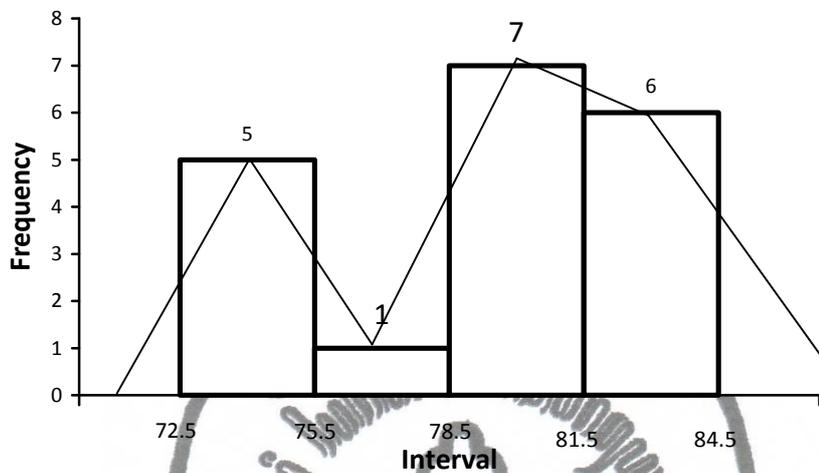


Figure 5. Polygon and Histogram of Data A<sub>1</sub>B<sub>1</sub>

- The data of the reading test of the students who have low schemata and taught by Group Investigation method (A<sub>1</sub>B<sub>2</sub>).

Descriptive analysis of the data A<sub>1</sub>B<sub>2</sub> shows that the score is 50 up to 69. The range is 19, the number of classes is 4, the interval is 5, the mean is 59.39, the mode is 59.5, the median is 62.41, and the standard deviation is 30.30. The frequency distribution of the data A<sub>1</sub>B<sub>2</sub> is in table 7, histogram and polygon are presented in figure 6.

Table 7. Frequency Distribution of Data A<sub>1</sub>B<sub>2</sub>

Class limit	$f_i$	$X_i$	$f_i X_i$	$X_i^2$	$f_i X_i^2$
50-54	3	51.5	154.5	2652.25	7956.75
55-59	6	56.5	339	3192.25	19153.5
60-64	6	61.5	369	3782.25	22693.5
65-69	4	66.5	266	4422.25	17689
	19		1128.5		67492.75

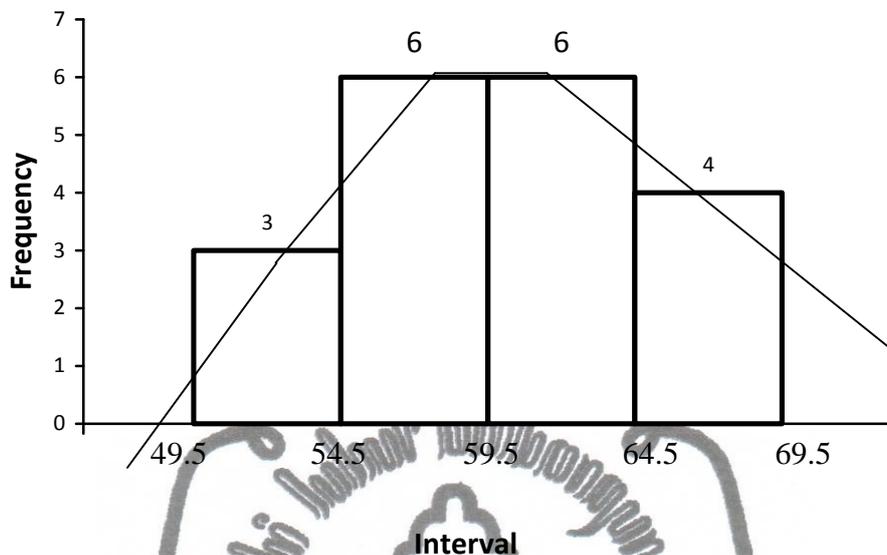


Figure 6. Polygon and Histogram of Data A<sub>1</sub>B<sub>2</sub>

- The data of reading test of the students who have high schemata and taught by Direct Instructional Method (A<sub>2</sub>B<sub>1</sub>).

Descriptive analysis of the data A<sub>2</sub>B<sub>1</sub> shows that the score is 50 up to 66. The range is 16, the number of classes is 5, the interval is 4, the mean is 61.18, the mode is 61.5, the median is 63.83, and the standard deviation is 31.22. The frequency distribution of the data A<sub>2</sub>B<sub>1</sub> is in table 8, histogram and polygon are presented in figure 7.

Table 8. Frequency Distribution of Data A<sub>2</sub>B<sub>1</sub>

Class limit	$f_i$	$X_i$	$f_i X_i$	$X_i^2$	$f_i X_i^2$
50-53	3	51.5	154.5	2652.25	7956.75
54-57	0	55.5	0	3080.25	0
58-61	6	59.5	357	3540.25	21241.5
62-65	6	63.5	381	4032.25	24193.5
66-69	4	67.5	270	4556.25	18225
	19		1162.5		71616.75

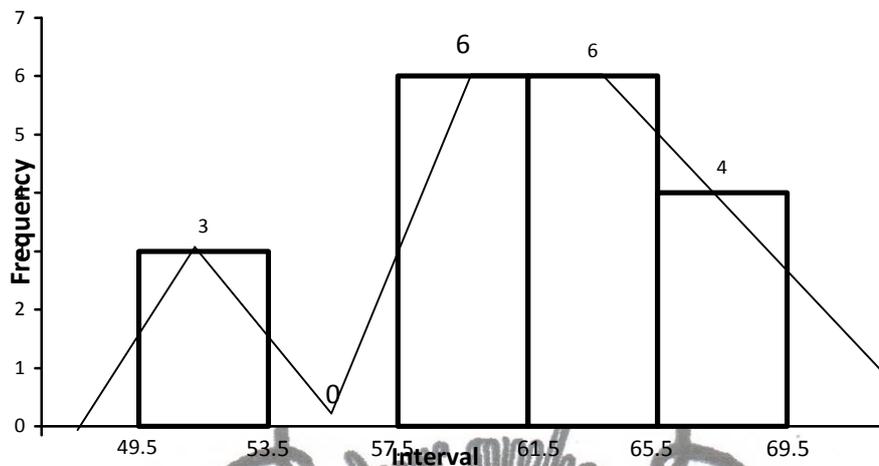


Figure 7. Polygon and Histogram of Data A<sub>2</sub>B<sub>1</sub>

8. The data of the reading test of the students who have low schemata and taught by Direct Instructional Method (A<sub>2</sub>B<sub>2</sub>).

Descriptive analysis of the data A<sub>2</sub>B<sub>2</sub> shows that the score is 66 up to 79. The range is 13, the number of classes is 5, the interval is 3, the mean is 72.71, the mode is 73.6, the median is 72.11, and the standard deviation is 36.93. The frequency distribution of the data A<sub>2</sub>B<sub>2</sub> is in table 9, histogram and polygon are presented in figure 8.

Table 9. Frequency Distribution of Data A<sub>2</sub>B<sub>2</sub>

Class limit	$f_i$	$X_i$	$f_i X_i$	$X_i^2$	$f_i X_i^2$
66-68	5	67.5	337.5	4556.25	22781.25
69-71	1	70.5	70.5	4970.25	4970.25
72-74	8	73.5	588	5402.25	43218
75-77	4	76.5	306	5852.25	23409
78-80	1	79.5	79.5	6320.25	6320.25
	19		1381.5		100698.8

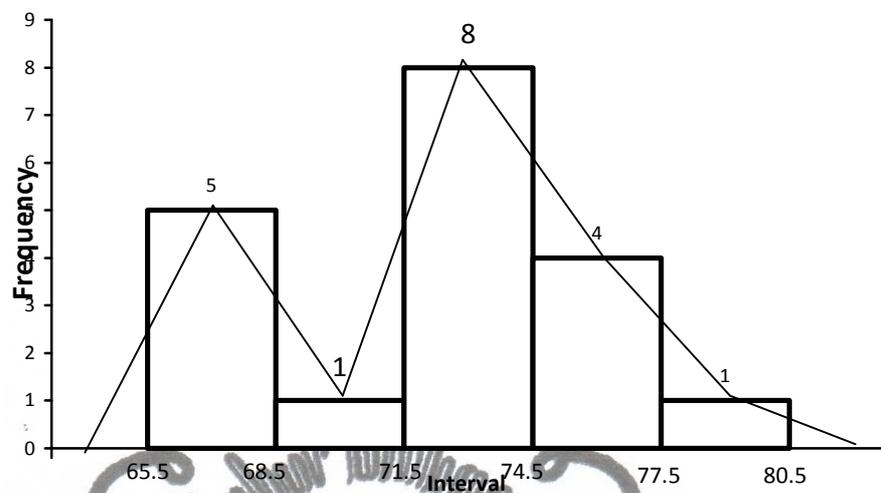


Figure 8. Polygon and Histogram of Data  $A_2B_2$

## B. Normality and Homogeneity Test

Before analyzing the data using inferential analysis, the sample must be in normal distribution and homogeneous. The normality test is done by using Liliefors testing and homogeneity test is done by using Bartlett formula.

### 1. Normality Test

The sample is in normal distribution if  $L_o$  (L-obtained) is lower than  $L_t$  (L-table) at the level of significance ( $\alpha$ ) = 0.05. L stands for Lilliefors.

Table 10. The Summary of Normality Test

No.	Data	The Number of Sample	L-obtained ( $L_o$ )	L-table ( $L_t$ )	Alfa ( $\alpha$ )	Distribution of Population
1	A <sub>1</sub>	38	0.1406	0.1437	0.05	Normal
2	A <sub>2</sub>	38	0.1156	0.1437	0.05	Normal
3	B <sub>1</sub>	38	0.1406	0.1437	0.05	Normal
4	B <sub>2</sub>	38	0.0740	0.1437	0.05	Normal
5	A <sub>1</sub> B <sub>1</sub>	19	0.1824	0.1950	0.05	Normal
6	A <sub>1</sub> B <sub>2</sub>	19	0.1452	0.1950	0.05	Normal
7	A <sub>2</sub> B <sub>1</sub>	19	0.1251	0.1950	0.05	Normal
8	A <sub>2</sub> B <sub>2</sub>	19	0.1854	0.1950	0.05	Normal

## 2. Homogeneity Test

Homogeneity test is done in order to know that the data are homogeneous. The data are considered as homogeneous data if the  $\chi_o$  is lower than the  $\chi_t$  at the level of significance ( $\alpha$ )= 0.005 (7.81).

Table 11. Homogeneity Analysis of the Data

Sample	df or (n-1)	1/df	si <sup>2</sup>	log si <sup>2</sup>	(df)log si <sup>2</sup>
1	18	0.06	3.95	0.60	10.74
2	18	0.06	4.68	0.67	12.06
3	18	0.06	5.90	0.77	13.88
4	18	0.06	4.15	0.62	11.12
$\Sigma$	72				47.80

$$\begin{aligned}\chi_o &= (\ln 10) \{ B - \sum (n_i - 1) \log S_1^2 \} \\ &= (2.3026)(48.19 - 47.80) \\ &= 0.118\end{aligned}$$

Because  $\chi_o$  ( $\chi$  observation) 0.118 is smaller than  $\chi_t$  ( $\chi$  table) 7.81, it can be concluded that the data are homogeneous.

### C. Hypothesis Test

#### 1. Multifactor Analysis of Variance

Hypothesis test is done after the results of the normality and homogeneity test are fulfilled. It is done to know whether the  $H_o$  (null hypothesis) is rejected or accepted. Multifactor Analysis of Variance is used to test the hypothesis. The  $H_o$  (null hypothesis) is accepted if  $F_o$  is lower than  $F_t$  and rejected if  $F_o$  is bigger than  $F_t$ . The following is the summary.

Table 12. The Summary of Multifactor Analysis of Variance

Source of Variance	SS	df	MS	$F_o$	$F(0.05)$	$F(0.01)$
between columns	218.96	1	218.96	9.78	3.92	6.85
between rows	199.07	1	199.07	8.89	3.92	6.85
Columns by row (interaction)	3994.75	1	3994.75	121.05	3.92	6.85
between groups	4412.78	3	1470.93	-	-	
within groups	1612.11	72	22.39	-	-	
Total	10437.66	75				

- a. Because  $F_o$  between columns (9.78) is higher than  $F_{t(0.05)}$  (3.92) and  $F_{t(0.01)}$  (6.85), the difference between columns is significant, or the difference between the reading skill of the students taught by Group Investigation method and that of those taught by Direct Instructional Method is significant. The mean score of students who are taught by Group Investigation method (69.66) is higher than that of those who are taught by using Direct Instructional Method (66.26). In conclusion, Group Investigation Method is more effective than Direct Instructional Method to teach reading.
- b. Because  $F_o$  between rows (8.89) is higher than  $F_{t(0.05)}$  (3.92) and  $F_{t(0.01)}$  (6.85), the difference between rows is significant or the difference between the reading skill of students who have high schemata and that of those who have low schemata is significant. The mean score of students who have high schemata (69.58) is higher than that of those who have low schemata (66.34). In conclusion, students who have high schemata have better reading skill than students who have low schemata.
- c. Because  $F_o$  interaction (121.05) is higher than  $F_{t(0.05)}$  (3.92) and  $F_{t(0.01)}$  (6.85), there is an interaction effect between two variables (methods of teaching and degree of schemata in teaching reading). Group Investigation Method is more effective than Direct Instructional Method to teach reading for students who have high schemata. On the contrary, Direct Instructional Method is more effective than Group Investigation Method to teach reading for students who have low schemata. In conclusion, the effect of teaching methods in teaching reading depends on the degree of students' schemata. *commit to user*

## 2. Tukey Test

After analyzing the variance, it needs to be followed by doing a Tukey test (between columns, rows, and cells). The function of this test is to test the difference of the mean of each group.

Table 13. The Summary of Tukey Test

Between Group	$q_0$	n	$qt_{(0.05)}$	$qt_{(0.01)}$	Significantly	Meaning
$A_1 - A_2$	4.42	38	2.86	3.82	Significant	$A_1 > A_2$
$B_1 - B_2$	4.22	38	2.86	3.82	Significant	$B_1 > B_2$
$A_1B_1 - A_2B_1$	16.48	19	2.96	4.05	Significant	$A_1B_1 > A_2B_1$
$A_2B_2 - A_1B_2$	10.23	19	2.96	4.05	Significant	$A_2B_2 > A_1B_2$

The finding of  $q$  is found by dividing the difference between the means by the square root of the ratio of the within group variation and the sample size.

- a. Because  $q_0$  between  $A_1$  and  $A_2$  (4.42) is higher than  $qt_{(0.05)}$  (2.86) and  $qt_{(0.01)}$  (3.82), Group Investigation method differs significantly from Direct Instructional Method to teach reading. The mean score of students who are taught by Group Investigation method (69.66) is higher than that of those who are taught by using Direct Instructional Method (66.26). Group Investigation Method is more effective than Direct Instructional Method to teach reading. Based on this result and the result of ANOVA, the  $H_0$  is rejected.

- b. Because  $q_0$  between  $B_1$  and  $B_2$  (4.22) is higher than  $qt_{(0.05)}$  (2.86) and  $qt_{(0.01)}$  (3.82), students who have high schemata differ significantly from students who have low schemata in their reading test. The mean score of students who have high schemata (69.58) is higher than that of those who have low schemata (66.34). Students who have high schemata have better reading skill than students who have low schemata. Based on this result and the result of ANOVA, the  $H_0$  is rejected.
- c. Because  $q_0$  between  $A_1B_1$  and  $A_2B_1$  (16.48) is higher than  $qt_{(0.05)}$  (2.96) and  $qt_{(0.01)}$  (4.05), Group Investigation method differs significantly from the Direct Instructional method to teach reading for students who have high schemata. The mean score of students having high schemata who are taught by Group Investigation method (78.53) is higher than that of those who are taught by using Direct Instructional method (60.63). Group Investigation Method is more effective than Direct Instructional Method to teach reading for students who have high schemata.
- d. Because  $q_0$  between  $A_2B_2$  and  $A_1B_2$  (10.23) is higher than  $qt_{(0.05)}$  (2.96) and  $qt_{(0.01)}$  (4.05), Direct Instructional Method differs significantly from Group Investigation method to teach reading for students who have low schemata. The mean score of students having low schemata who are taught by Direct Instructional Method (71.89) is higher than that of those who are taught by Group Investigation Method (60.79). Direct Instructional Method is more effective than Group Investigation Method to teach reading for students who have low schemata.

- e. Based on the result of point c and d, that is Group Investigation Method is more effective than Direct Instructional Method to teach reading for students who have high schemata, while Direct Instructional Method is more effective than Group Investigation Method to teach reading for students who have low schemata. Therefore, it can be concluded that there is an interaction between teaching methods and students' schemata in teaching reading. Based on this result and the result of ANOVA, the  $H_0$  is rejected.

#### **D. Discussion of the Result of the Study**

1. Group Investigation Method is more effective than Direct Instructional Method to teach reading.

There are some reasons why Group Investigation method is more effective than Direct Instructional Method to teach reading: (1) by Group Investigation method, the students are more active than the lecturer in the learning process; (2) group investigation emphasizes on democratic learning, the students are free to choose the topic of study based on their interest.; and (3) there's interaction among the students because they try to comprehend and interpret the text in group.

Slavin (1995: 112) states that in group investigation, classroom is a cooperative enterprise where teacher and pupils build the learning process on mutual planning based on their perspective experiences, capacities, and needs. It implements student-centered activities. Identifying the topics in the group investigation method step builds the students' interest to the topic to study.

Categorizing pupils into groups and planning the learning task applies democratic in learning process. Carrying out the investigation leads the students to share the information and interact each other. Preparing a final report trains the students to compile their investigation. Presenting the final report encourages the students to be more responsible to inform the results of their investigation to the other groups. In the last stage, that is evaluation, they contribute to share the feedback about the topic, about the work they did, and about their affective experiences.

Meanwhile, using Direct Instructional method, lecturer takes times much than students in the reading process and there is just a little opportunity for students to participate in the learning process. The students are passive in the learning process. The implementation of direct instruction model is primarily teacher-directed; by using this model, the lesson requires a most careful structuring and orchestration by the teacher (Arends, 1997: 67). The lecturer is the decision maker, he/she doesn't involve the students in planning the topics to study. He/she considers that teaching learning process is his/her authority. The activity is teacher-centered. The effect is when the students are given reading test, the students who are taught by Group Investigation method get higher score than the students who are taught by Direct Instructional Method.

2. The students who have high schemata have better reading skill than those who have low schemata.

The students who have high level of schemata: (1) are more active when their lecturer give them reading text; (2) are able to relate the printed words in the text to the information or experience they have; (3) have good ability in interpreting a text; (4) relate their linguistic, formal, and content schemata to the text they read, so it is easy for them to understand the message of the text.

According to schema theory, a text doesn't by itself carry meaning. Brown (2001: 299) views that reader brings information, knowledge, emotion, experience, and culture- those are schemata- to the printed word.

On the contrary, the students who have low schemata: (1) meet some difficulties in reading; (2) feel worried when they have to join the reading class; (3) are not able to understand the message of the text; (4) become passive students and depend on their friends who have high level schemata in comprehending the text. Hyland (2007: 55) states that originally a cognitive perspective on reading comprehension, schema theory suggests that reader can only engage with a text actively if they are able to relate it to something they have already known. So, it is clear that students who have low schemata become passive learners since they are not able to interpret the text well.

Clarke and Silberstein in Brown (2001: 299) state that research has shown that reading is only incidentally visual. More information is contributed by the readers than by the print out on page. That is, readers understand what they read because they are able to take the stimulus beyond its graphic representation and assign it membership to an appropriate group of concepts already stored in their memories. Skill in reading depends on the efficient interaction between linguistics knowledge and knowledge of the world.

In conclusion, it's proved that the students who have high schemata have better reading skill than those who have low schemata.

3. There is an interaction effect between teaching methods and students' schemata on the students' reading comprehension

The teaching technique which is used by the lecturer in the class gives a big influence for the success of the teaching and learning process, for example in a reading class. Meanwhile, schemata are important factor which influence the students to comprehend the reading text.

By using group investigation in teaching reading, the lecturer stimulates the students to be more active, and the role of the teacher is as a facilitator to prepare the topic to study. It's stated by Arends (1997: 120), by applying group investigation, students are involved in planning both the topics for study and how to proceed with their investigation. Since the aim of the method is to solve a problem based on the sub topics the students choose,

schemata play important role in interpreting a text from the references. The linguistic, formal, and content schemata are useful for students in understanding the message of the text. Schemata help students in analyzing and synthesizing the text, so they can prepare the report of their investigation well. Group investigation challenges their reading ability because they also work in a group; so, there are cooperative works. They activate their schemata and share their knowledge and experience to understand the text. Clarke and Silberstein in Brown (2001: 299) state that research has shown that reading is only incidentally visual. More information is contributed by the readers than by the print out on page. That is, readers understand what they read because they are able to take the stimulus beyond its graphic representation and assign it membership to an appropriate group of concepts already stored in their memories. Skill in reading depends on the efficient interaction between linguistics knowledge and knowledge of the world. Students with high schemata have good ability to comprehend a text by relating the information and prior knowledge they have using Group Investigation method. It can be concluded that Group Investigation Method is more effective than Direct Instructional Method to teach reading for students who have high schemata.

On the contrary, Direct Instruction Method leads students become passive learners. Santrock (2008 in Hunt, 2009: 137) states that direct instructional method is a structured, teacher-centered approach for teaching characterized by teacher-direction and control, and high teacher expectations for students' progress. The teacher always helps the students to comprehend

the text when the students do reading activity. She translates word by word; gives the meaning of the new words almost all the time of reading process. For the students who have low schemata, they don't have good ability to comprehend the text. Hyland (2007: 55) states that originally a cognitive perspective on reading comprehension, schema theory suggests that reader can only engage with a text actively if they are able to relate it to something they have already known. Since the students who have low schemata are not able to comprehend the text well, they need the lecturer to lead them interpreting the text. Realizing this fact, Direct Instructional Method is very suitable to be applied in this learning process. In conclusion, Direct Instructional Method is more effective than Group Investigation Method to teach reading for the students who have low schemata.

Based on the explanation above, it can be concluded that there is an interaction between teaching methods and schemata on students' reading comprehension. Group Investigation Method is more effective than Direct Instructional Method to teach reading for students who have high schemata. On the other hand, Direct Instructional Method is more effective than Group Investigation method to teach reading for students who have low schemata.

## CHAPTER V

### CONCLUSION, IMPLICATION, AND SUGGESTION

#### A. Conclusion

The findings of the research are:

1. Group Investigation Method is more effective than Direct Instructional Method for teaching reading to the English 3 students of the Tarbiyah Department of STAIN Pekalongan in the 2011/2012 academic year.
2. The students who have high schemata have better reading skill than the students who have low schemata of the English 3 students of the Tarbiyah Department of STAIN Pekalongan in the 2011/2012 academic year.
3. There is an interaction between teaching methods and students' schemata in teaching reading to students in the English 3 students of the Tarbiyah Department of STAIN Pekalongan in the 2011/2012 academic year; Group Investigation Method is more effective than Direct Instructional Method to teach reading for students who have high schemata, while Direct Instructional Method is more effective than Group Investigation Method to teach reading for students who have low schemata.

Based on the research findings, it can be concluded that: (1) Group Investigation method is a very effective method for teaching reading in the English 3 students of the Tarbiyah Department of STAIN Pekalongan in the 2011/2012 academic year; and (2) The effectiveness of the method is influenced by the level of the students' schemata. Group Investigation Method is more effective than Direct Instructional Method to teach reading for students who have high schemata. On the other hand, Direct Instructional Method is more effective than Group Investigation method to teach reading for students who have low schemata.

*commit to user*

## B. Implication

The result of the research proves that Group Investigation Method is a very effective method to teach reading. It means that Group Investigation Method can be applied effectively to improve students' reading comprehension. Here are steps for implementing Group Investigation method: (1) topic selection, students choose specific subtopics within a general problem area usually delineated by the lecturer. Students then organize into two to six-members task-oriented groups; (2) cooperative planning, students and lecturer plan specific learning procedures, task, and goal consistent with the subtopics of the problem selected in step 1; (3) implementation, pupils carry out their plan formulated in step 2. Learning should involve a wide variety of activities and skills and should lead students to different kinds of sources both inside and outside the school. The teacher closely follows the progress of each group and offers assistance when needed; (4) analysis and synthesis, pupils analyze and evaluate information obtained during step 3 and plan how it can be summarized in some interesting fashion for possible display or presentation to classmates; (5) presentation of final product, some or all groups in the class give an interesting presentation of the topics studies in order to get classmates involved in each other's work and to achieve a broad perspective on the topic. Group presentations are coordinate by the teacher; and (6) evaluation, in cases where groups pursued different aspects of the same topic, pupils and teachers evaluate each group's contribution to the work of the class as a whole.

Since the result of the research also proves that there is an interaction between teaching methods and students' schemata, lecturers must know the level of students' schemata before applying a teaching method. By identifying student's schemata, it

helps the lecturer to determine the suitable teaching method. Schemata contribute to the effectiveness of teaching method in the class. The students having high schemata who are taught by using Group Investigation Method have higher score than the students having high schemata who are taught by using Direct Instructional Method, while the students having low level of schemata who are taught by using Group Investigation Method have lower score than the students having low schemata who are taught by using Direct Instructional Method. It means that Group Investigation Method is more effective than Direct Instructional Method to teach reading for students who have high schemata. On the other hand, Direct Instructional Method is more effective than Group Investigation Method to teach reading for students who have low schemata.

### C. Suggestion

1. For the lecturers.
  - a. The results of this research prove that Group Investigation method is one of the effective methods to use in teaching reading. The writer recommends English lecturers to use this method.
  - b. Schemata, as the psychological factor, should be considered before choosing an appropriate method to use.
2. For the students.
  - a. The students must be more active in the learning process in order to improve their reading skill.
  - b. The students must have schemata so that they are capable to understand a text and able to interpret it well.

3. For other researchers

- a. This research can be a reference for other researchers.
- b. They are also able to do another research using schemata as the psychological aspect with other teaching methods because it is still difficult to find the literature related to the interaction between schemata and teaching methods.

