

ABSTRACT

Rahmawati, Nafi'atur. 2016. The Effectiveness of Scientific Approach in Developing Writing Skill Atthe Twelfth Grade Students Of Ma Darul Huda Ponorogo In Academic Year 2015/2016. **Thesis**,English Education Department of State Islamic College of Ponorogo (STAIN) Ponorogo. Advisor PrylaRochmawati, M.Pd.

Key Words: Effectiveness, Scientific Approach, Writing.

Writing has an important role in our life. By having good writing, the students will express their thought, ideas, feelings as well as to communicate with others. There are many approaches for teaching writing. One of them is scientific approach. Scientific approach considered effective for teaching writing. The goal of scientific approach is for changes a boring, threatening and stressful classroom atmosphere into a relaxing, supportive and enjoyable learning environment which brings a positive influence on learners' skill.Scientific is also considered relevant with the idea that learning is a scientific process in the classroom. The main purpose of this research is to reveal the effectiveness of usingscientific approach for teaches writing.

The design of this research was quasi-experimental research which the dependent variable was students' writing skill and independent variable was teaching by scientific approach. The populationof this research was students of the twelfth grade of MADarul Huda Ponorogo in academic year 2015/2016, while the sample was 27 students of XII IAGA Gas the experimental class and 32 students of XII IAGA F as the control class. The researcher applied simple random sampling as sampling technique. Then, the procedure of data collection was test and documentation. And to analyze data, the researcher used the "t" test formula by using SPSS 19 program.

The findings showed that there is significant difference of students' writing skill for the group who are taught by using scientific approach and who are not. The result of t-test calculation shows that $t\text{-value} > t\text{-table}$ ($t\text{-value} = 5,573$; $t\text{-table} = 2.00$). It can be implied that the Null Hypothesis (H_0) was rejected and Alternative Hypothesis (H_a) was accepted. It means that scientific approach is effective for developing students' writing skill.

Referring to the findings above, the researcher concluded that there is a significant difference between writing skill of students who are taught by scientific approach and who are not.In accordance to the finding above, it is suggested that teachers can improve their spirit, knowledge and for teaching and learning English especially in writing skill, such scientific approach and to the future researchers to enriching references concerned.

CHAPTER I

INTRODUCTION

A. Background of the Study

In teaching learning English, teachers teach based on the prescribe textbook in schools. Most teachers simply stick to the textbook and adopt a very traditional method. Furthermore, in teaching English the teacher most emphasize to the understanding of writing and reading skill than to the speaking skill. The teachers drill the students by giving some exercises in written form.

According to Peter Elbow, writing is an important skill to be mastered in learning English as a foreign language. It is not only a means of communication where students can share their views and thoughts; it is actually a pre-requirement to master other language skills.¹It means that writing is one of the most important skills that the students should master. The writing is important since it builds the students' creativity. It help the students express their though, ideas, feelings as well as to communicate with others.

Writing can be one of the challenging aspects of learning the English language. Therefore, because writing is regarded as the most difficult skill for language learner to master. It involves much work and practice writing. The difficulty lies not only in generating and organizing ideas, but also in translating

¹Areej Al-Shourafa, The Effect of Motivation on Jordanian 10th Grade Students' Writing Skill in English,European Scientific Journal, Vol. 8, No.22 (October, 2000), 235.

ideas. The other problems are vocabulary, grammar, and how to arrange words into good sentence.² It needs not only comprehension of language structure, but also vocabulary enrichment and good grammar. Moreover, it needs a mastery of thinking and arranging words so they can be understandable sentences.

It has been claimed that second language writing instructions are concerned more with correctness to form over function. In the classroom, students spend a great deal of time in copying models rather than expressing their own ideas creatively. Writing is used to show that students have mastered a particular grammatical rule, rather than have a good idea about the subject matter. In fact, correct spelling, grammar, and overall organization are the most important evidence of second language proficiency. For instance, the students' ability to form and write the future perfect tense correctly are seen as evidence of the students' ability to write, and the students' overall English ability.³ In fact, because of limited class time, writing may receive insufficient attention from teachers, or be relegated to a homework task. Besides that, other may feel that because writing tends to be a silent and reflective activity. It has no place in an active busy classroom.

As a result of this case, the students have few opportunities to make real use of language in order to communicate, especially in written form. They are unusual

² Peter Lucantori, *Teaching and Assessing Skills in English as a Second Language* (Edinburgh: Cambridge University Press, 2006), 52.

³ David Nunan, *Practical English Language Teaching* (New York: The MC Graw Hill Companies, 2003), 89.

to explore their ideas in writing form. Only fewthe students can write well in the target language. It is because their experience of written language is still limited. Hence, the students often feel frustrated in writing.

In accordance with the general problems above, the teacher should be able to facilitate the students optimally in the writing process. As facilitators in developing students' skill, teachers should be creative in the learning process. The joyful environment will be created.⁴Accordingly, it is not a simple and easy task for the teachers to provide various strategies that can increase the students' skill in writing. So it can be done by some approaches, one of them is learning by scientific approach.

It has been argued that scientific indicates the meaning of science. First, is scientific. Related to the word "scientific" it will fill variety of objective, measured and based on the study the science that can be responsible. Second, that something is done that scientifically with data and proof that may be done with the process and measurable results. Third, qualified based on raw and standard roles.

With regard to the learning scientific, White said, no more important, apart from the fact. Here is the importance of students learning about facts. Scientific approach, but made learners more active in constructing the knowledge and

⁴Jack C. Richards &S.Theodore Rodgers, *Approaches and Methods in Language Teaching a Description and Analysis* (Edinburgh: Cambridge University Press, 1986), 91.

creativity. From here, the learners trained to afford logically, systematically, using capacity think high levels of (High order thinking/HOT).⁶

That can be applied, which provides an opportunity for being shy or unconfident students to participate. This activity is often used to inject some fun into the learning, or to enliven a bored class.⁵ Scientific approach is multi-skill activity involving speaking, listening, reading and writing, but in this research, the researcher focuses on writing skill. This approach can be used in the classroom, but also make an ideal outdoor activity. It is meaningful activity, motivates the students and a lot of fun.

The major goal of the study of the scientific approach is to increase students' writing skill. The students must write and understand about their piece of work. For teachers, scientific approach can be used as reference in learning process especially in teaching writing. It is generally asserted that students can be helped to get their writing purpose effectively and can help the teacher in teaching writing as well.

According to the explanation above, the researcher is interested to find out the effectiveness of scientific approach in developing writing skill. Therefore, it is going to be conducted a research entitled "The Effectiveness of Scientific Approach in Developing Writing Skill At The Twelfth Grade Of MA Darul Huda Ponorogo In Academic Year 2015/ 2016.

⁵Mark Avery, Running Dictation(ISELP Teacher Trainer) (Kediri: PondokPesantrenAr-Risalah, 2006), 1

B. Limitation of the Study

To avoid for a ranging discussion, this study focuses on some concerns identified as follows:

1. This study focuses on the procedure of scientific approach and the students' writing skill.
2. This study takes the twelfth grade students of MA Darul Huda Ponorogo as the sample of study.
3. This study uses t-test as the technique of data analysis
4. This study uses a test method as the collecting of data. The test is conducted to find the English writing skill at the sample of the study.

C. Statement of the Problems

Regarding to the background to the study, the problem statement is formulated into: Do the students who are taught by scientific approach achieve better score in writing skill than the students who are taught without scientific approach?

D. Objectives of the Study

The researcher conducts this research to investigate the use of scientific approach in developing writing skill, with the main purpose as regarding to the problem statements, objectives of the study are formulated into to find out what the students who are taught by using scientific approach based on the 2013 curriculum achieve better score in English writing skill than the students who taught without using scientific approach.

E. Significances of the Study

Basically, all study activities should be having clear significance at the end of study. The writer hopes that this writing will give a great benefit as follows:

1. Theoretical Aspect

This result of observation can add knowledge in particular about contribution to education knowledge about scientific approach and English writing skill.

2. Practical Aspect

a. Students

The result of study is expected to increase the students' writing skill. Particularly, to the twelfth grade at MA DarulHuda Ponorogo in academic year 2015/2016.

a. Teacher

The result of study is expected to be an input for teachers, particularly English teacher to motivate their students to write especially in English writing text.

b. Other researcher

The result is expected to give contribution to readers, particularly the students of English Department of STAIN Ponorogo, in enriching references concerned with this approach.

F. Organization of the Thesis

To provide clear general descriptive content of this thesis, it is important to organize the process of this research report systematically. This thesis covers five chapters which are discussed comprehensively in order that the readers can understand every step done in this research. The organization of this thesis is as follows:

The first chapter is introduction. This chapter introduces the whole of the research content that involves; background of the research, identification and limitation of the study, a statement of the problems, objectives of the research, and the significance of the research, organization of the thesis. In the background of the study, the researcher talks about the reasons why the scientific approach chooses as an alternative choice in writing class. In limitation of the study, it focuses on the procedure of scientific approach and the students' writing skill. In statements of the problem, the researcher talks about the research questions of the effectiveness of scientific approach in developing writing skill. In the objectives of the study, this talks about the purposes of scientific approach in developing writing skill. Besides that, in significance of the study discusses about the benefits of theory and practical significance.

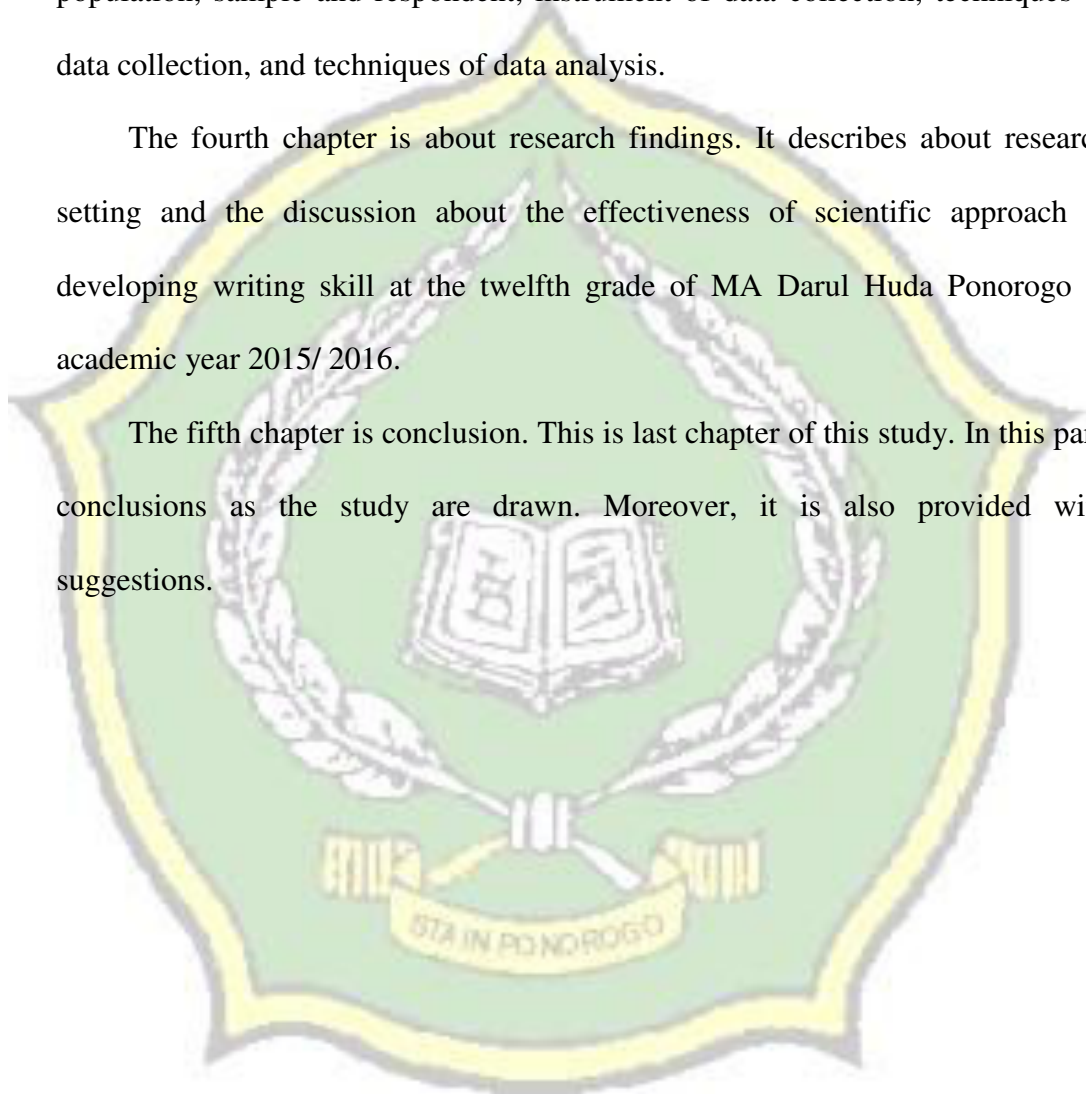
The second chapter is review of related literature. There are some concepts used such as writing, the definition of writing, the writing skill, the goal of writing, the writing process, assessing writing, kinds of writing text, scientific approach, the importance of learning scientific approach, the steps of scientific

approach, teaching writing by using scientific approach, previous research finding, theoretical framework, and hypothesis.

The third chapter contains research methods. It consists of research design, population, sample and respondent, instrument of data collection, techniques of data collection, and techniques of data analysis.

The fourth chapter is about research findings. It describes about research setting and the discussion about the effectiveness of scientific approach in developing writing skill at the twelfth grade of MA Darul Huda Ponorogo in academic year 2015/ 2016.

The fifth chapter is conclusion. This is last chapter of this study. In this part, conclusions as the study are drawn. Moreover, it is also provided with suggestions.



CHAPTER II

REVIEW OF RELATED LITERATURE

The review of related literature has a goal of providing previous study and information concerning with the research problems including overviews of Theoretical Background, Previous Research Finding, Theoretical Framework, and Hypothesis.

A. Theoretical Background

1. Writing

a. Definition of Writing

Writing is a progressive activity. This means that when you first write something down, you have already been thinking about what you are going to say and how you are going to say it.⁶ Writing is an important part of language teaching as it also functions as an essential tool for learning in which students expand their knowledge of the language elements in real use. Writing is also viewed as a social and cultural phenomenon as it is meaning making that is socially and culturally shaped and individually and socially purposeful. In this sense, writing falls into complexity and importance as well.⁷

⁶Alice Oshima, Introduction To Academic Writing (America: The Christian Science Monitor and the World Media Project Addison Warley Longman, 1997), 2.

⁷Bambang Yudi Cahyono, The Teaching of English Language Skill and English Language Components (University of Malang Press, 2010), 104.

The realistic attitude about writing must build on the idea that writing is a skill. It is a skill like driving. Typing or cooking like any skill, it can be learned. The good news is that the skill of writing can be mastered, and if you are ready to work, you will learn what you need to know.⁸

Additionally, Caroline T. Linse says that writing is a combination of process and product. The process refers to the act of gathering ideas and working with them until they are presented in a manner that is polished and comprehensible to readers.⁹ This definition is in line with the David Nunan's idea who states that writing is the mental work of inventing ideas, thinking about how to express them and organizing them into statements and paragraphs that will be clear to a reader.¹⁰ It is not only a physical act but also a mental act. Moreover, the mental act works more dominant than the physical act. So that is why writing is assumed as the most difficult language skill.

According to the statement above, the researcher can conclude that writing is a complex process that allows writers to explore thoughts and ideas, and make them visible and concrete.

⁸John Langan, *Collage Writing Skills* (New York: Mc. Graw- Hill Companies, 2005), 12-13

⁹ Caroline T. Linse, *Practical English Language Teaching: Young Learners* (New York: McGraw Hill, 2005), 98.

¹⁰David Nunan, *Practical English Language Teaching*, 88.

b. Writing Skill

Writing is one of skill in the language area. In English, writing skill is much complex enough and sometimes difficult to teach. Writing skills are complex and sometimes hidden to teach, requiring mastery not only of grammatical and rhetorical devices but also of conceptual and judgment of the mental elements. Writing skill is a process decidedly not to say that it should be turned into a formulaic set of steps.

According to David Nunan, writing is the mental work of inventing ideas, thinking about, how to express them, and organizing them into statements and paragraphs that will be clear to a reader.¹¹ Writing relies on many of the same structures as speech, such as vocabulary, grammar and semantics, with the added dependency of a system of signs or symbols, usually in the form of a formal alphabet.

Writing is the result of employing strategies to manage the composing process, which at one of gradually developing a text.¹² According to Mary S Lawrence, writing practice is concerned with the meaning, both in content and through relationship. The cognitive method treats writing not as an end of product to be

¹¹ David Nunan, *Practical English Language Teaching* (New York: McGraw Hill, 2003), 88.

¹² Tricia Hedge, *Teaching and Learning in the Language Classroom* (New York: Oxford University press, 2003), 302.

evaluated and graded, but as an activity, a process, which the students can learn how to accomplish.¹³

According to David Nunan, writing is one of important skill in teaching and learning English, because in a writing activity, the students can cover at least three aspects. First, writing as a channel of learning, a process of learning that is very important element of the language. Second, writing is as a good way to express our thinking, and to respond to various real life situations. Third, writing is the linguistic learning such as note taking in the classroom, summarizing, narrating, report means that is each part of any written text will make a continuous, constitute, organized whole to relate another.¹⁴

Writing skill is complex and sometimes hidden to hidden to teach, requiring mastery not only of grammatical and rhetorical devices, but also of conceptual and judgment of the mental elements.

Writing skill is a process decidedly not to say that it should be turned into a formulaic set of steps. Steps of writing skills necessary for writing good process into five general components.

They are:

¹³Mary S Lawrence, *Writing as a Process* (USA: The University of Michigan press, 1976), 3

¹⁴David Nunan, *Practical English Language Teaching*, 88

a. Language use

Language use is the ability to write correct and the appropriate sentences.

b. Mechanical skills

Mechanical skills are an ability to use correct those conventions of paragraphing and sentence structure.

c. Treatment of contents

Treatment of content is the ability to think creatively and develop though, excluding all irrelevant information.

d. Stylistic skills

Stylistic skills are the ability to manipulate sentence and paragraphs, and use language effectively.

e. Judgment skill

Judgment skill is the ability to write in an appropriate manner for a particular purpose with the particular audience in mind, together with an ability to select, organize and order relevant information.¹⁵

From the statements above, the researcher concludes that writing is a complex process that allows the writers to find out the concept, thoughts, feeling, opinion and ideas in the written form, so that the readers can understand what is communicated by the writer.

¹⁵ J.B Heaton, Writing English Language Test (New Yoark: Longman INC, 1989), 135

The good writing skill is covered by the mastery of language use, mechanical skills, treatment of content, stylistic skill, and judgment skill.

c. The Goal of Writing

Writing has some goals that students or writers want to be achieved. The fundamental goal of writing is to express ideas, feeling and thought in the written form. Likewise, an expert assumes that the purpose of the writing is the expression of ideas, the conveying of messages to the reader. So, the ideas themselves should arguably be seen as the most important as react of the writing. The goals of writing such as:

- 1) Expressing ideas and opinion in written form.
- 2) Describing person, an object, a place, etc.
- 3) Defining a concept or an idea and interpret it with examples
- 4) Telling story or sequence of events
- 5) Discussing or arguing a topic as an article
- 6) Reporting an event, an experiment, or a scientific fact
- 7) Teaching the written discourse of English.

In the early stages of course oriented towards oral proficiency, writing serves a variety of pedagogical purposes:

- 1) The introduction and practice of some form of writing enable us to provide for different learning styles and need.

- 2) Written work serves to provide the learners with some tangible evidence that they are making progress in the language.
- 3) Exposure that the foreign language through more than one medium, especially if the skill is properly integrated appears to be more effective than relying on a single medium alone.
- 4) Writing provides variety in classroom activities, serving as a break from oral work.
- 5) Writing is often needed for formal and informal testing.¹⁶

From statements above, the goal of teaching writing is encouraging students to express their ideas and imagination in written form with better language and structures.

d. The Writing Process

The writing process is intended to provide a step-by-step model for writing so that the finished piece is the best it can be. Based on Kathy, writing process consist of six stages they are pre-writing, drafting, self-review and peer review, revising, editing, and publishing. Those stages of writing are highlighted as follows:

- 1) Pre-writing

¹⁶Laura N. Gitlin & Kevin J. Lions, Successful Grant writing (New York: Springer Publishing Company, 2008), 89.

In the initial step, teachers set the stage for students to write by helping them stimulate ideas. Ideally, teachers will have consulted their content standards to guide them in their expectations for the overarching assignment, so this is a targeted prewriting activity geared to the type of assignment (e.g., personal narrative, short story, etc).

The researcher can choose one of them to explore thoughts and ideas, and make them visible and concrete in writing skill. There are many ways that teachers can assist students in charming their brains' juices to plan for writing (or dictated) work, such as: discuss ideas with peers, write key thoughts and questions, record reactions and observations, take notes, freewriting, and brainstorm ideas.¹⁷

2) Drafting

After brainstorming, students are primed for writing a rough draft. In a process approach, drafting is viewed as an important and complex set of strategies, the mastery of which takes time, patience, and trained instruction.

There are several strategies and skills applied to the drafting process in writing, they are:

¹⁷Kathy Tuchman Glass, Curriculum Design for Writing Instruction(California: Corwin Press, 2005), 181.

- a) Getting started (adapting the free writing technique).
- b) Optimal monitoring of one's writing (without premature editing and diverted attention to wording, grammar, etc.).
- c) Peer-reviewing for content (accepting or using classmates' comment).
- d) Using the instructor's feedback.
- e) Editing for grammatical errors.
- f) Read aloud technique (in small groups or pairs, students read their almost final drafts to each other for a final check on errors, flow of ideas, etc.).
- g) Proofreading.¹⁸

The researcher can choose one of them to explore thoughts and ideas, and make them visible and concrete in writing skill.

3) Self-Review and Peer Review

When pupils critique student examples and examine their own and classmates' writing for a particular assignment they are currently working on, their own work improves. Providing a venue for students to review their own and each other's writing and to make comments is essential to the writing process.

¹⁸ H. Douglas Brown, *Teaching by Principles an Interactive Approach to Language Pedagogy*, Second Edition (San Francisco: Longman, 2001), 348.

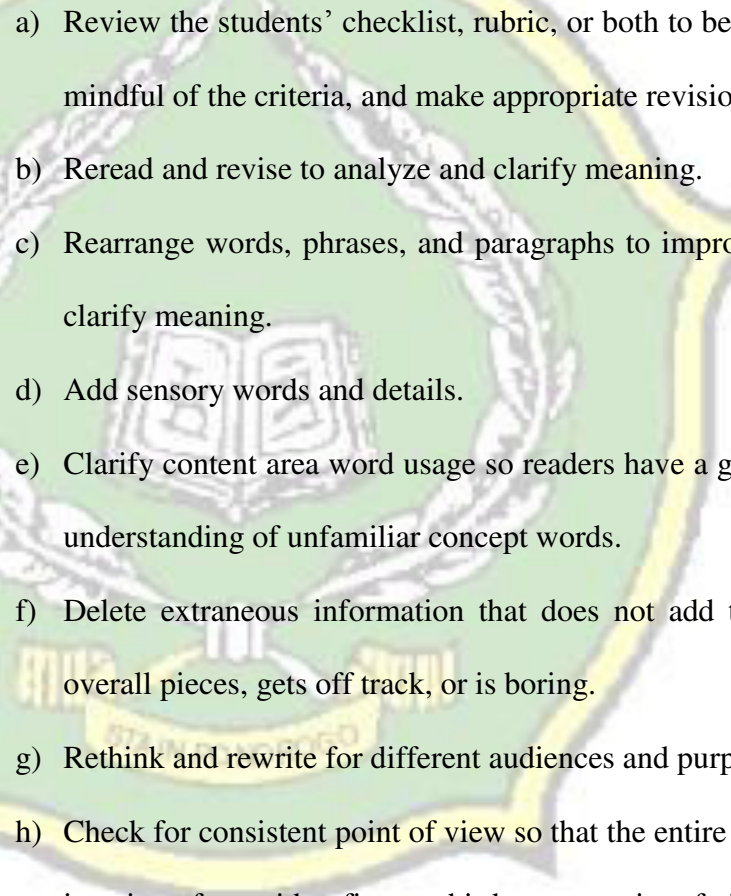
To assist in this step, assign one or more of these suggested strategies to help students with self-review and peer review:

- a) Respond to others' writing by asking questions and making comments.
 - b) Assist classmates in editing for proper grammar and usage conventions.
 - c) Determine the strongest features of the paper.
 - d) Determine the purpose of writing, and assess if this goal is achieved.
 - e) Ask for feedback.
 - f) Assess own paper against a checklist or rubric.
 - g) Assess classmates' papers against checklist or rubric.
- 4) Revising

At this point, students have written their rough drafts, have critically reviewed their own papers, and have obtained comments from peers. This stage allows students to take a look at what they've written and at their own and others' comments and then to revise their papers accordingly. It might mean students make a significant change by deleting whole paragraphs or something less intrusive, such as using stronger vocabulary where weaker words and phrases once were. Students may also have opted to revise

their papers after the self-review stage, before their peers review them.

Suggest several of these points to students to assist them in revising their written work. Many of the line items are probably part of the students' checklist you initially created for the assignment, so steering students back to that might be worthwhile.

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- a) Review the students' checklist, rubric, or both to be ever-mindful of the criteria, and make appropriate revisions.
 - b) Reread and revise to analyze and clarify meaning.
 - c) Rearrange words, phrases, and paragraphs to improve or clarify meaning.
 - d) Add sensory words and details.
 - e) Clarify content area word usage so readers have a greater understanding of unfamiliar concept words.
 - f) Delete extraneous information that does not add to the overall pieces, gets off track, or is boring.
 - g) Rethink and rewrite for different audiences and purposes.
 - h) Check for consistent point of view so that the entire paper is written from either first-or third-person point of view.
 - i) Check that second-person point of view ("you") is not used in formal writing.
 - j) Check for transitions between paragraphs and within

paragraphs so sentences flow.

- k) Check accuracy of information so that the facts are indeed correct.
- l) Produce multiple drafts.
- m) Incorporate suggestions from peers and teachers that serve to enhance the paper.

5) Editing

In the editing stage of the writing process, students need to focus on the grammar and conventions of writing: is the spelling correct? Are sentences grammatically constructed? What about proper punctuation? Students need to focus on editing their papers. Sometimes reading the paper aloud will assist with detecting errors. Often when we read our own papers, we magically put in missing words because they were intended to be there, and we even skip over spelling errors. Students edit written work by doing the following:

- a) Proofread uses a dictionary and other reference materials.
- b) Edit for grammar, punctuation, capitalization, and spelling at a developmentally appropriate level.
- c) Include illustrations, photos, charts, graphs, software, graphics, or maps.
- d) Consider format of the paper in term of proper

paragraphing, margins, indentations, and titles.

6) Publishing

The final stage of writing process-publishing-is the time students should sit back and be satisfied with a job well done. Publishing can be done with a short piece of writing and does not always indicate the completion of major writing assignment. The final piece should, though, be word processed or very neatly written. Whatever the writing form, the finished piece can be shared with others.¹⁹

e. The Skill of Writing

The writing skill is complex and sometimes difficult to teach, requiring mastery not only of grammatical and rhetorical devices but also of conceptual and judgment elements. The following analysis attempts to group the many and varied skills necessary for writing good process into five general components, they are:²⁰

1) Language use

Language use is the ability to write correct and appropriate sentences.

2) Mechanical skills

¹⁹Kathy Tuchman Glass, Curriculum Design for Writing Instruction (USA: Corwin Press, 2005), 185.

²⁰J.B.Heaton, Writing English Language Tests (New York: Longman, 1990), 135.

A mechanical skill is the ability to use correctly those conventional peculiar to the write language, e.g. punctuation, spelling.

3) Treatment of content

Treatment of content is the ability to think creatively and develop thoughts, excluding all irrelevant information.

4) Stylistic skills

Stylistic skills are the ability to manipulate sentences and paragraph, and use language effectively.

5) Judgment skills

Judgment skills are the ability to write in a particular manner, to select, organize and order relevant information.

From the statements above, the researcher is able to conclude a good writing skill is covered by the mastery of language use, mechanical skills, treatment of content, stylistic skill, and judgment skill.

Parkinson states that there are some skills in writing:

- 1) Articulate experience and express what is thought, felt and imaged.
- 2) Order and present facts, ideas and opinions.
- 3) Use language and register appropriate to audience and context.

- 4) Exercise control of appropriate grammatical structure.
- 5) Understand and use a range of apt vocabulary.
- 6) Demonstrate an awareness of the conventions of paragraphing, sentence structure, punctuation and spelling.²¹

The researcher can choose one of them to explore thoughts and ideas, and make them visible and concrete in writing skill.

f. Assessing Writing

Assessment is the general process of monitoring or keeping track of learners' progress. So, assessment is important to know students' understand about learning English. Assessment can monitor students' achievement.²² There are some criteria in assessing writing such as:

1) Content

In content the aspects that will be assessed are identifications of text and description about the topic.

2) Organization

²¹ Tony Parkinson, Teaching and Assessing Skills in First Language English(USA: Cambridge University Press), 41.

²²Tricia Hedge, Teaching & Learning in The Language Classroom (USA: Oxford University Press, 2000), 376.

How the students create well organized and perfectly coherent that will be assessed in the organization.

3) Vocabulary

The students must use the effective choice of words and use of words form.

4) Grammar

Grammar is specific criteria in writing because it determines the good of sentences.

The researcher can choose one of them to explore thoughts and ideas, and make them visible and concrete in writing skill.

2. Scientific Approach

a. Definition of Scientific Approach

The scientific approach is a way to ask and answer scientific questions by making observations and doing experiments. The scientific curriculum makes believe that factual evidence based on careful observations provides much more convincing justification for accepting educational aims than reasoning based upon unsupported assumptions and they also believe that even more convincing support is possible through experimentation. We can illustrate this methodology with the following example. In learning process, students are encouraged to discover and transform complex information, check the new information that already exists in his memory and to develop into the information or the ability to match the environment

and the time he lived. Students should really understand and can apply the knowledge, solve problem, find everything for themselves, and strive for his ideas.²³ Here the students- centered learning. Students are actively in learning process.

The hope of scientific curriculum making is that, taken together the combination of rational argument and scientific evidence can build such as a strong case for certain aims and programs that disagreements about aims can be resolved.²⁴ Sometimes this happens, but not always. Furthermore, these methods are so time consuming and expensive that we could not afford to determine specific needs or resolve all disputes about aims, this way, even if we could in principle do so.

b. The Importance of Learning Scientific Approach

With a scientific model that oriented to develop attitudes, knowledge and skills through active and creative learning, expected of learners developing their capacity to think critically and skilled communication as well as developing their creativity. This is done through five stages, which in 2013 curriculum called as scientific approach, to develop the asking ability, to do experiments or explore the capacity to think, and communication skills.

²³Peraturan Menteri Pendidikan dan Kebudayaan Republik Indonesia, Nomor 81A Tahun 2013, Tentang Implementasi Kurikulum

²⁴ Decker F. Walker, Curriculum and Aims (Columbia: Columbia University press), 175.

With scientific learning model, learners are required to be creative as a scientist that must conduct a series of scientific activity, that includes: formulating questions, proposing hypotheses, collecting the data, processing and analyzing data, and formulating a conclusion (Kemendikbud, 2013e).²⁵

Thus, we can conclude that leaning scientific designed in such a way that students actively constructions concept, law, or principle through steps- stage, observe (to identify problems)wanted to know, formulate questions (and formulated hypothesis), collect data information by techniques, cultivate/ analyzed data/ information and drawing conclusions and then share the conclusion.

c. Steps in Scientific Approach

Learning rendering is conducted using scientific approach that touches 3 domains, those are the attitude, skill, and knowledge. Domain attitude talks about matter teaching that students know about “why”, domain skill that students know about “how”, while the knowledge that students know about “what”.

In the learning process with a scientific approach, like determined in manual the implementation of 2013 curriculum covering observe, one

²⁵ AgusAkhmadi, PendekatanSaintific ModelPembelajaranMasaDepan (Yogyakarta: Araska Pinang Merah), 32.

another, think, try, communication the law Indonesian Mendikbud No 103 2014.

1) Observing

Activities observation is very good to lead students build knowledge own, find something up to understand of knowledge, attitudes and skill. This method presenting an object significantly, students happy and was challenged, and easy its implementation. But, activities, observe deep learning need the timely preparation of the old and ripe, the cost and effort relative many. A method of observing beneficial to meet curiosity students. By observing students find the fact that there was a correlation between the object that have been analyzed with matter learning used by teachers. Activities observe deep learning done on of steps such as the following:

- a) Determining the object to be observed
- b) Creating guidelines observation in accordance with the scope object to be observed
- c) Determining clearly data what will need to be observed, whether it is primary and secondary
- d) Determining where is the object to be observed
- e) Specifying in clear how the observation will be done to collect the data to run easily and smoothly

- f) Determining the way and include families in village records in the result of observation thus, can be concluded that observe deep learning done steps such as he who should be accompanied by determines the way in the result of the observation.

2) Questioning

In this case teachers may not tell, but only given the questions lure, until students itself capable of doing and find an alternative answer. Activities one another having some function as follows:

- a) Arouse to a sense of want to know, interest, and attention students about a theme or topic learning
- b) Encourage and inspire students to active learning and to develop questions from him and to develop questions for him and for himself
- c) Diagnose a learning disability students at once convey design for the solve
- d) Certain duties and give opportunity to students to demonstrate the attitude of skill and our insight
- e) Excite students' skills in speaking, asking questions and member answer logical, systematic and using language who good and right
- f) Contribute students in discuss, develop the capacity to think and draw conclusions
- g) Accustom students think spontaneous, fast and sprightly

3) Experimenting

Learning Activity try and/ gather information is established between is done by experiment; read sources other than textbooks; observing the objects/ scene and minutely, honest, polite and appreciate the opinions of others.

4) Associating

Reasoning collectively is the thought processes logical and systematic over the fact emperies that can be observed to obtain drawing conclusions of knowledge. The term is referred to the ability of group various ideas and association various ideas and various events. According to theory association, learning will be effective if there is instruction directly between students and teachers through the stimulus and response. According to Thorndike, learning happening by slow or gradual. Thorndike said how hokum in the process of learning. (Kemendikbud, 2013a)

5) Communicating

That activity was addressing the result of the observation, or conclusion based on the results of the analysis, either orally or in writing activities processes information. This activity at once give a chance to teachers to give explanation repeated related material that not yet understood students whose competence developed in the stage of communicating is developing being honest minutely, tolerance, the

capacity to think systematically, expressing their opinion with briefly and vividly as well as improve the ability of speaking that good and right.

f. Teaching Writing by Using Scientific Approach

Scientific approach is believed to be able to develop students' affection, skills, and knowledge.²⁶ Scientific is also considered relevant with the idea that learning is a scientific process in the classroom. Thus how learning should reflect fixed procedures starting from observing, questioning, experimenting, associating, and communicating. A Scientific approach is effective when used during writing process. That can be regarded, if it following the criteria: first, the learning material based on the facts that can be explained logically; second, teachers' explanation- students' response- and teachers' educational interaction. Third, encouraging and inspiring the students to think critically, analytically, and precisely and identifying, understanding, solving problems, and applying the learning materials. Fourth, enable the students to think in a hypothetical look at the differences, similarities and another link from learning material. Fifth, persuade and motivate the students are able to understand, implement and develop pattern of rational and objective thinking in the response to the learning material. Sixth, it should be based

²⁶OktaviaErwinarti, The Scientific Approach In Teaching Writing by Using Guided Writing Based on 2013Curriculum, jurnal. Untan, ac.id/index.php/jdpdp/article, diakses 29 Maret 2016.

on concepts, theorist, and empirical fact that can be justified. Seventh, learning objectives are formulated in a simple and clear, yet an attractive presentation system (DirektoratJendralPendidikanDasar, 2013a).²⁷

Scientific approach has some steps in learning process, they are process of scientific approach in teaching writing:

- 1) The teacher give some opinion or news topic (that all are real)
- 2) Make interaction with students about the topic (students response)
- 3) Encourage the students to analytic the topic critically
- 4) The students make paragraph about the topic (the topic from the teacher)
- 5) Attractive the clear presentation

Writing is more difficult than reading, so arguably its need more time to be spent practicing it. The student will initially find writing extremely difficult and intimidating, and it is important not to overwhelm them at this point. Correction should be sparing and focused on the most important and easily understood errors.

Start out small, with short (3-5) sentences self- introduction or diaries and gradually expand the length and increase the difficulty of the content. Short writing assignment is a good way to review and reinforce students' current language target by giving them a topic that require them to use vocabulary or grammar they learn recently.

²⁷Ibid, 2

With practice, the student will become more confident and ambitious writers. Also, writing their own sentences and choosing words and construction will really help them process and internalize language they are working with.

From these definitions, researcher concludes that the scientific approach organizing a class by deciding the students into several small groups to get information from materials that provide by the teacher.

B. Previous Research Findings

There are some research that related to scientific approach. For the first research was presented by OktaviaErwinartiIndahtriyaniien title “The scientific approach in teaching writing by using guided writing based on 2013 curriculum”. This research applied a CAR (classroom action research) to the tenth grade students of computer and networking program of SMKN 1 Bengkayang in academic year 2014/2015. The results of the research are expected to give some solutions for the teachers at the vocational high school. This can help the teacher to choose the most effective technique of teaching writing. They have known the importance of guided writing in scientific approach and apply in teaching writing.²⁸

The second research was presented by Carl Wiemen and Sarah Gilbert, with the title of the research is “Taking a scientific approach to science education. This research employed Classroom Action Research. The

²⁸Ibid, 1

result reflect also is seen elsewhere, namely, these teaching method are not just beneficial for a subgroup of students, they are much better for all students. This broad applicability is not surprising the teaching methods are based on how the human brain learns. In this study, the average level of engagement of the students was also measured and, as one might expect, it was much higher (85%) in the experimental section than in the control section (45%).²⁹

The last previous study, by YeniKartikawati, the title of the research is “The implementation of scientific approach in teaching English at the eight grade of SMA Muhamadiyah 10 Surakarta in 2014/2015 academic year”. This research applies the descriptive research especially naturalistic study as a type of this research. The implementation of scientific approach can be seen in the implementation of some elements of teaching English. The implementation of scientific approach in teaching English is not always implemented fully. The stages that not always used by the teachers are communicating and associating stage. This situation happen because of some reason such as the teacher only has a little bit the knowledge about the implementation of scientific process in teaching learning process.³⁰

²⁹Carl Wiemen, Taking a Scientific Approach to Science Education, Carnegie Foundation’s Centennial Celebration at the Library of Congress (September 2007).

³⁰YeniKartikawati, The Implementation of Scientific Approach in Teaching English at the Eight Grade of SMAMuhamadiyah 10 Surakarta in 2014/2015 Academic Year (Surakarta: Muhamadiyah University Press, 2015), 8.

That research above was different from this present study. It deals with finding the effectiveness of scientific approach in developing writing skill. So it compared the writing score of students taught using scientific and the students not being taught using scientific approach.

C. Theoretical Framework

Scientific approach practices in all aspects, but in this research, the researcher focuses on writing skills of students individually. Students should be able to write down about assignments.

Writing is a progressive activity. The realistic attitude about writing must build on the idea that writing is a skill. It is a skill like driving, typing or cooking like other skill, it can be learned. The good news is that the skill of writing can be mastered, and if you are ready to work, you will learn what you need to know.

X= Scientific approach

Y= Writing Skill

Those variables are scientific approach based on the 2013 curriculum (X) as independent variables and Writing Skill (Y) as dependent variables. From two variables above, the researcher concludes that theoretical framework as follows.

The students who use scientific approach have better achievement in writing skill than the students who without using a scientific approach.

D. Hypothesis

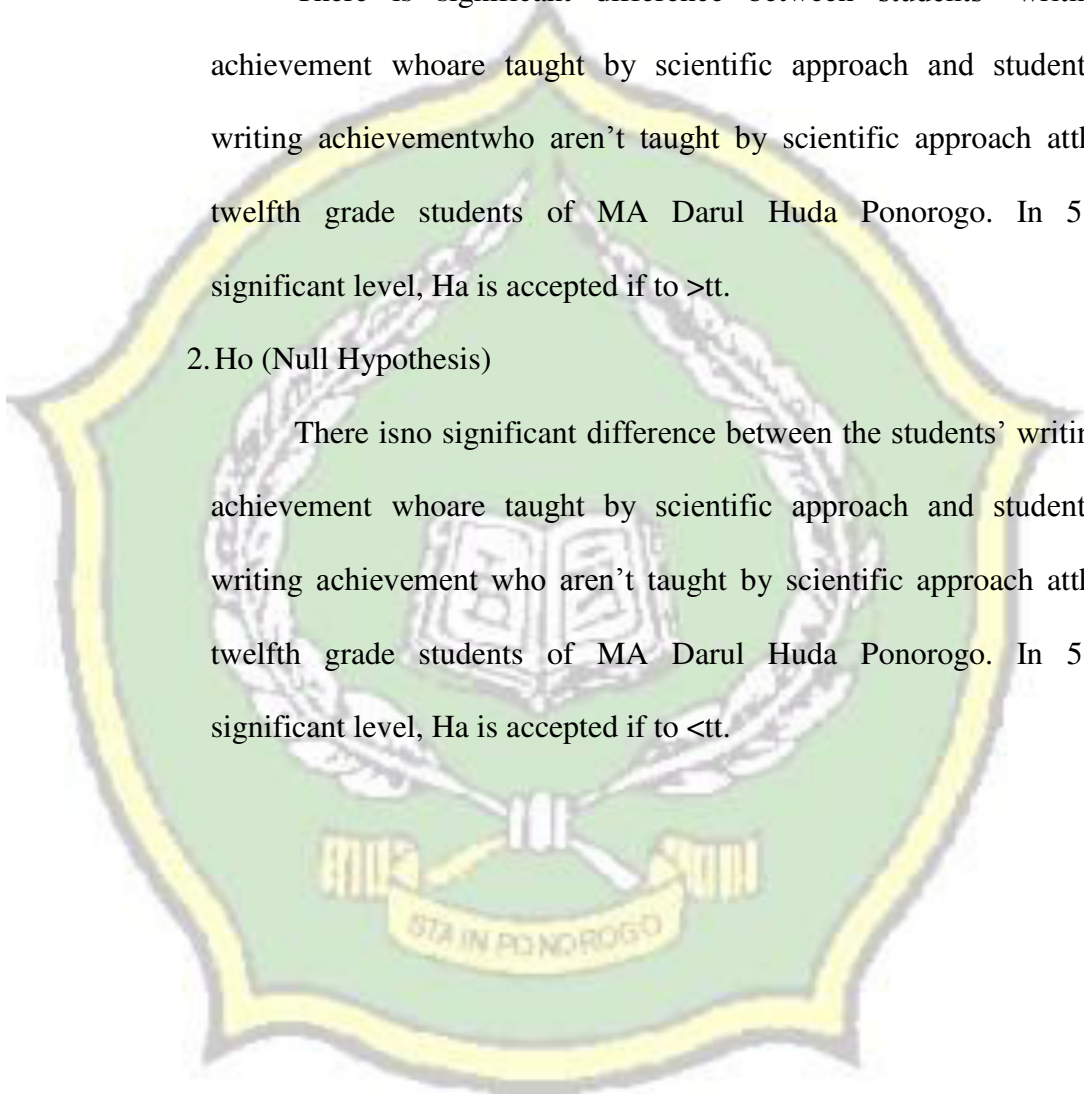
Hypothesis in this research can be stated based on the theoretical analysis and theoretical framework. The hypothesis as follows:

1. Ha (Alternative Hypothesis)

There is significant difference between students' writing achievement who are taught by scientific approach and students' writing achievement who aren't taught by scientific approach at the twelfth grade students of MA Darul Huda Ponorogo. In 5% significant level, H_a is accepted if $t_o > t_t$.

2. H_o (Null Hypothesis)

There is no significant difference between the students' writing achievement who are taught by scientific approach and students' writing achievement who aren't taught by scientific approach at the twelfth grade students of MA Darul Huda Ponorogo. In 5% significant level, H_a is accepted if $t_o < t_t$.



CHAPTER III

RESEARCH METHOD

A. Research Design

The approach in this research was quantitative approach. Quantitative approach emphasized precisely measuring variables and testing hypotheses that are linked to general causal explanation.³¹ Quantitative research based on the measurement of quantity or amount. It is applicable to phenomena that can be expressed in term of quantity.³² Quantitative method consists of two kinds. They are experimental (pre-experimental design, quasi experimental design and true experimental design) and non experimental (descriptive, survey, expose facto, comparative and correlation).³³

The experimental group in this research was students who were taught by scientific approach, and the control group of this research was the students who were not taught by scientific approach. The research design that was used by the researcher is adjusted with the purpose of the study that was to determine the effectiveness of scientific approach in developing writing skill at twelfth grade of MA Darul Huda Ponorogo by comparing students writing skill who

³¹ W. Laurence Neuman, *Social Research Methods: Quantitative and Qualitative Approaches* (USA: Allyn and Bacon, 1991), 122.

³² Khotari, *Research Methodology*, 3.

³³ W. Laurence Neuman, *Social Research Method*, 207.

were taught by scientific approach and who are not taught by scientific approach.

This research employed quasi-experimental design. This design had a control group, but can be fully controlling variables during experiment held on. Quasi-experimental design is used because in fact, it is a little bit difficult to create a control group in research.³⁴ There are three types of quasi-experimental include a quasi-experimental design: nonequivalent (pre-test and post test) control group design, single-group interrupted time series design, and control-group interrupted time-series design.³⁵ The researcher used nonequivalent (pre-test and post test) control group design for this research. This design included a pre-test measures followed by a treatment (for experiment class) and a post-test for two groups (control and experiment).

According to John, the design of the research is as below:

Experimental	O1	X	O2

Control	O3		O4

Notes:

Experiment : the class who is taught using scientific approach

Control : the class who is taught without scientific approach

³⁴Ibid., 208.

³⁵John W. Creswell, *Research Design: Quantitative, Qualitative, and Mixed Methods Approaches* (California: SAGE, 2009), 160.

- O1 : Pre test for the experiment class
- O3 : Pre test for the control class
- X : Treatment
- O2 : Post test for the experiment class
- O4 : Post test for the control class.³⁶

In this research the researcher applied pretest and post test. In experimental class, pretest was applied to know students' writing achievement before implementing scientific approach and post test was applied to know students' achievement after the implementation of the scientific approach. The steps as follows:

- a. Teacher asked material related the situation or news
- b. Teacher asked some question to the students related the material (exposition text)
- c. Teacher explained the material clearly (with video)
- d. Students did the assignment (make paragraph exposition appropriate with theme from the teacher)
- e. The result of assignment about paragraph exposition presented in front of class of some students
- f. Teacher clarified about paragraph exposition

³⁶Ibid., 161.

On the other hand, in control class pretest and post test are used to measure students' writing achievement which didn't teach by scientific approach. The steps as follows:

- a. Teacher explained exposition paragraph
- b. The students make exposition paragraph in a general theme
- c. The students conduct their assignment
- d. Teacher give the conclusion

The researcher tried to express phenomenon by collected data from natural research to understand phenomenon and to get conclusion after observed the fact. The result of collecting data treated as the data of this research to prove the hypothesis the formulated.

B. Population and Sample

3. Population

Before conduct an observation, we need to determine the population. Population is defined as all members of any well defined class of people, event or subject.³⁷ From that statement it can be said that population is the research object as a target to get and collect data.

In this research, the writer took at twelfth grade students of IAGA MA Darul Huda Ponorogo in academic year 2015/2016 as the population.

According to Oxford, Population is 1) a particular group or type of

³⁷ Fred N. Kerlinger, Foundations of Behavioral Research (New York, Holt Rinehart and Winston, 1996), 52.

people or animal living in area, 2) the total number of people living somewhere, 3) the degree to which an area has been populated.³⁸ A population is defined as all members of any well defined class of people, events or object.

The population chosen by the researcher is the twelfth grade students of MA Darul Huda Ponorogo in academic year 2015/2016. The total members of the population are 153 students. In which they are divided into 9 classes.

4. Sample

Sample is a half and or a part of the population which is being researched. Study of sample is used as means to find the information about the population. The result of sample should represent and reflect the characteristics of population. The research of the sample may be done if the condition of subject is homogenous. The sample of this research is taken from twelfth grade students randomly. So the writer used random sampling as a technique. The purpose of random sampling is accuracy. Probability samples that rely on random process require more work than non random ones. Random samples are most likely to yield a sample that truly represents the population.³⁹

³⁸A S Hornby, *Oxford Advanced Learner's Dictionary*(London: Oxford University Press, 2006), 89-70.

³⁹Neuman, *Sosial Research Method*, 195-203.

Random sampling technique can be carried out through these ways such as simple random, stratified, systematic, cluster.⁴⁰ In this research, researcher used simple random sampling as a technique. In random sampling technique, sample at least covers 10-15 % part of the population. The steps at randomizing sample were as follows:

- a. Preparing piece of papers;
- b. Writing the class code on the papers prepared;
- c. Rolling the paper well;
- d. Putting the rolled paper in a can;
- e. Shaking the can several times and
- f. Taking two rolled paper to be the sample.

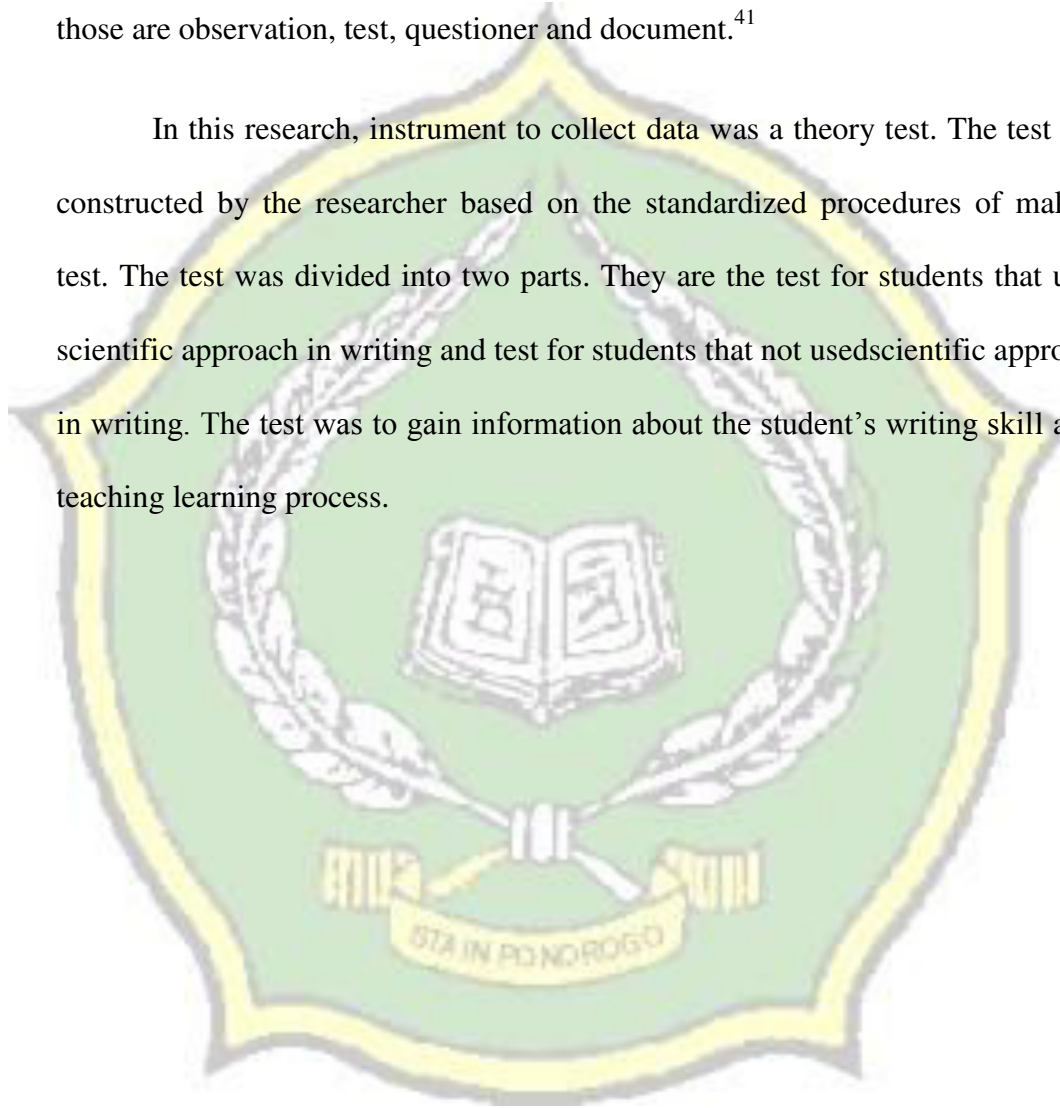
In this study the researcher took two classes at the twelfth grade of IAGA that used as a sample. One class for experiment and another one for control class which have a criteria that the students have same capability. Those classes are **IAGA G** and **IAGA F** that each class consists of **28 and 32** students. The respondent of this research are **60** students.

⁴⁰Ibid., 216.

C. Instrument of Data Collection

Instrument is an implement used for a particular purpose, especially for delicate or scientific work. There are four ways to collect the data in research; those are observation, test, questioner and document.⁴¹

In this research, instrument to collect data was a theory test. The test was constructed by the researcher based on the standardized procedures of making test. The test was divided into two parts. They are the test for students that used scientific approach in writing and test for students that not used scientific approach in writing. The test was to gain information about the student's writing skill after teaching learning process.



⁴¹Ibid., 149.

Instrument of data collection can show as the table below:

Table 3.1 Instrument of Data Collection

Title of Research	Variable	Indicator	Subject	Technique	No. Item
The Effectiveness Of Scientific Approach in Developing Writing Skill At Twelfth Grade Of Ma Darul Huda Ponorogo In Academic Year 2015/ 2016	➤ Writing skill	➤ The students are able to write the exposition paragraph based on the topic in terms of contents, grammar, and vocabulary.	The twelfth grade students of MA Darul Huda Ponorogo in academic year 2015/2016.	Test	Chose one of the topic on computer and make the exposition text. That consist of thesis, argument, and conclusion

D. Technique of Data Collection

1. Test

In teaching activity, test has been considered as important instrument. It is used to measure the students' achievement and know whether the teaching is success or not. Test may be constructed primarily as devices to reinforce learning and motivate the student of primarily as a means of assessing the student's performance in the language. In this research, test is applied to measure scientific approach in developing writing skill at the twelfth grade of MA Darul Huda Ponorogo in academic year 2015/ 2016.

The test is constructed by the researcher based on the standardized procedure of making test. The test is used to know students' writing skill.

For measuring the writing skill of students in MADarul Huda Ponorogo, the researcher used analytic scoring by Brown and Bailey, in which as many as six major elements of writing are scored, thus enabling learners to home in on weakness and to capitalize on strengths.⁴²

Brown J. D and Bailey K. M designed an analytical scoring scale that specified six different levels in each category, ranging from “unacceptable” to “excellent”. This analytical scoring has the four categories (Content, organization, vocabulary, grammar).

Table 3.2 The Analytic Scoring Rubric for the Students' Final Compositions⁴³

Aspect of writing	Weighting	Score	Converted score	Criteria
Content	30%	5	30	Complete (identification and orientation), provide complete supporting details, relevant to the topic, and easy to understand.
		4	24	Complete, provide almost complete supporting details, relevant to the topic, and easy to understand.
		3	18	Complete, provide fairly complete supporting details, relevant to the topic, and fairly easy to understand.
		2	12	Complete, provide less complete supporting details, relevant to the topic, and little bit easy to understand.

⁴²H. Douglas Brown, Language Assessment: Principles and Classroom Practices (New York: Pearson Education inc., 2004), 243.

⁴³ Douglas Brown, Language Assessment Principles and Classroom Practices (San Francisco: long man.com, 2003), 244-245

		1	6	Not complete, quite relevant to the topic and quite easy to understand.
Organization	30%	5	30	Well organized and utilize effective use of connectors.
		4	24	Fairly well organized and utilize effective use of connectors.
		3	18	Loosely organized, main ideas clear, logical but incomplete connectors.
		2	12	Not quite organized, lack of connectors
		1	6	Lack of organization and does not utilize any connectors.
Vocabulary	20%	5	20	Effective choice of words and word forms.
		4	16	Effective choice of words and some misuse of word forms.
		3	12	Adequate choice of words but some misuse of words, and word forms.
		2	8	Limited range, confusing use of words and word form.
		1	4	Very limited range, very poor knowledge of words, and word forms.
Grammar	20%	5	20	No errors in the use of past tense, pronoun and other aspects of grammar.
		4	16	Few errors in the use of past tense, pronoun and other aspects of grammar.
		3	12	Some errors in the use of past tense, pronoun and other aspects of grammar.
		2	8	Many errors in the use of past tense, pronoun and other aspects of grammar.
		1	4	No mastery of past tense, pronoun and other aspects of grammar -- dominated by errors in the use of past tense, pronoun and other aspects of grammar.
		1	1	No control over spelling, punctuation, and capitalization.

For the table of analytic scoring above, that can conclude, if each aspect has a weighting score. For example: the aspect of organization is 30, so the maximal score of organization is 30. Then mix all of score of writing based on below:

Content	: 30
Organization	: 30
Vocabulary	: 20
Grammar	: 20
Total	: 100

By far the most complex criterion of an effective test is validity.

For the clear understanding, the researcher explained about validity.

a. Validity

Validity is “The degree to which evidence and theory support the interpretations of test scores entailed by the proposed uses” of a test. A test has high validity if it measure what should be measured. Validity can be divided into four types, namely content validity, construct validity, predictive validity, and concurrent validity. To test the validity of the instrument in this research, researcher used a type of construct validity for the variable in this research relates to phenomena and abstract objects, but the symptoms can be observed and measured.⁴⁴ As for how to calculate it by using the SPSS 19 program.

⁴⁴SuharsimiArikunto, *Prosedur Penelitian Suatu Pendekatan Praktik* (Jakarta: PT Rineka Cipta, 1998), 170.

With df or db is $n-r$ $30-2 = 28$ in 5% significance the r index is 0,361. When the index of rxy is below the r index it could be concluded that the items were not valid instruments. Thus, the item said to be valid instruments if the coefficient of correlation (r_{xy}) is more than 0,361.

To measure the validity of instruments of research, the researcher put the total sample 30 respondents in Twelfth grade of IAGA I with the scoring of writing is rubric content, organization, vocabulary and grammar. So the researcher calculates the validity test from four scoring rubrics of writing. From of result the test validity instruments, and all questions or scoring rubrics are valid.

From the result calculation item validity instruments, could be conclude in table 3.3 as follow:

Table 3.3 the result of validity Calculation

Item	"r" calculated	"r" index	Notes
Content	0,975	0,361	Valid
Organization	0,968	0,361	Valid
Vocabulary	0,955	0,361	Valid
Grammar	0,956	0,361	Valid

b. Reliability

Reliability is the degree of consistency that the instrument of test.⁴⁵

A data collection test is considered to be reliable if it yields consistent results in its successive administration. Reliability is also extremely important externally, and another researcher should be able to perform exactly the same experiment, with similar equipment, under similar conditions, and achieve exactly the same results. If they cannot, then the design is unreliable. This research applied SPSS 19 program.

Table 3.4 Reliability Statistics

Cronbach's Alpha	N of Items
.923	4

Reliability of the result of the calculations was the value of the variable instruments reliability students' of Twelfth IAGA I is 0, 923. And the test is reliable because the index of reliability test is 0, 923, it is higher than r index that showed 0, 361.

2. Documentation

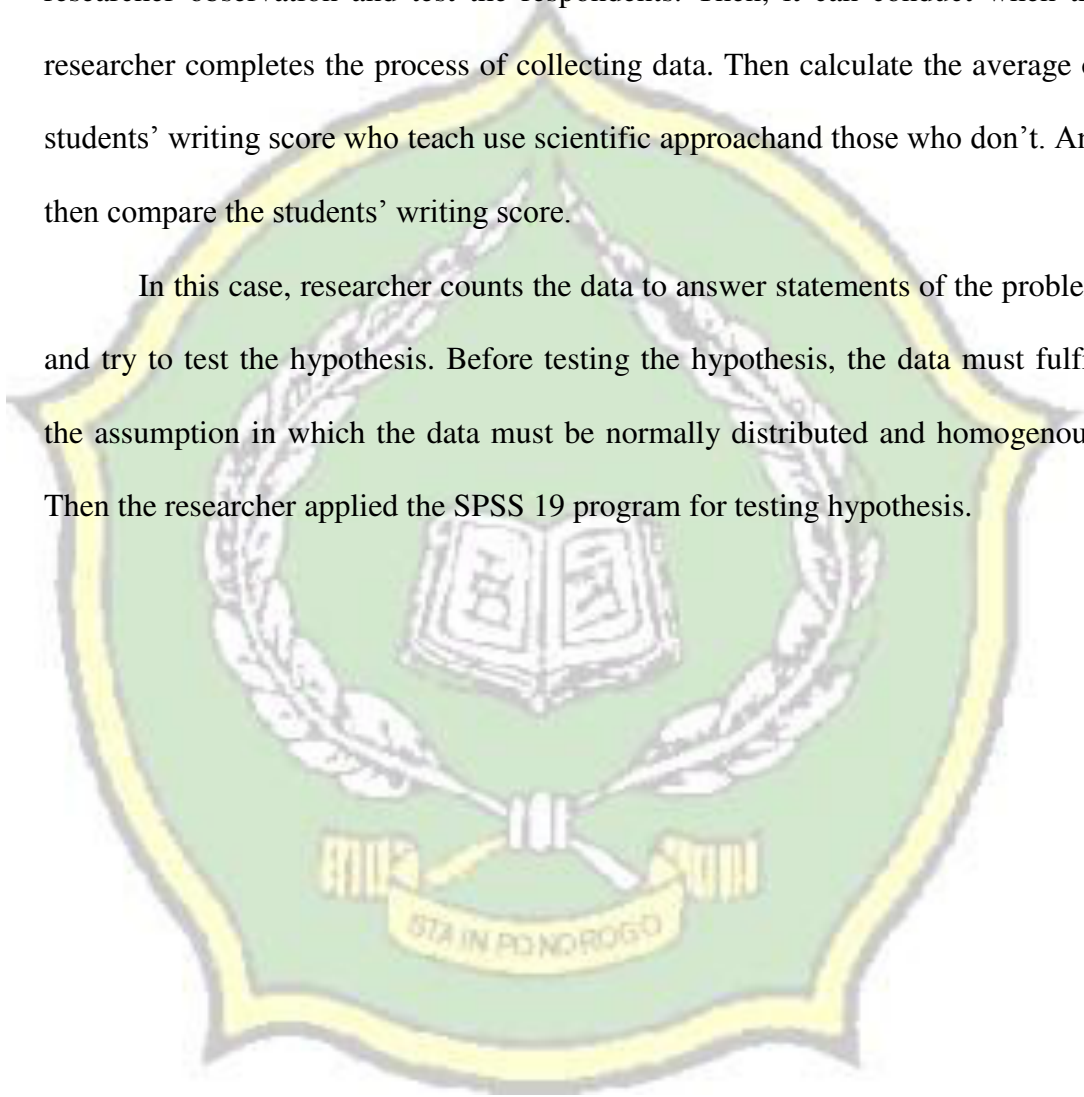
Documentation technique was used to collect the data about MA Darul Huda Ponorogo, like the profile of school, the teacher and staff, the goal of school, mission and vision of school, etc.

⁴⁵ZainalArifin, EvaluasiPembelajaran (Bandung: RemajaRosdakarya, 2011), 258.

E. Technique of Data Analysis

The data analysis was conducted when the researcher collects data from the beginning of the research to the end. The data analysis beginning when the researcher observation and test the respondents. Then, it can conduct when the researcher completes the process of collecting data. Then calculate the average of students' writing score who teach use scientific approach and those who don't. And then compare the students' writing score.

In this case, researcher counts the data to answer statements of the problem and try to test the hypothesis. Before testing the hypothesis, the data must fulfill the assumption in which the data must be normally distributed and homogenous. Then the researcher applied the SPSS 19 program for testing hypothesis.



CHAPTER IV

FINDINGS AND DISCUSSION

A. General Findings

1. The history of MA Darul Huda

Darul Huda Islamic senior high school, which stood on September 29, 1989 with the number of operational with the number of operational licenses Wn 06.04/00.0352/58.14/1989 shelter under Darul Huda Cottage Foundation, is one of the many Islamic senior high schools in the district Ponorogo. Darul Huda Islamic Senior High School has a vision with "على نهج السلفية الحديثة" and has missions to provide mastery of the Islamic religion and science, according to the level of capabilities and needs in preparation for continuing education to a higher level and life the Islamic community.⁴⁶

2. Profil of MA Darul Huda

a. Meaning of Symbol



- 1) Star (golden yellow): lofty objective, knowledgeable, charitable, pious, glorious deeds.

⁴⁶Look at transcript documentation no: 01/D/F-1/26.IV/2016

- 2) World sky (blue sky): Shows insight.
- 3) Triangle (yellow gold): Stealing is good if flying up and falling down still stuck, do not waver aqidah.
- 4) Left wing (white labeled Islam): Islam is a pure.
- 5) The right wing (white cloud) writing “Berilmu, Beramal, Bertaqwa” as Motto of PP. Darul Huda.
- 6) Posts MayakTonatanPonorogo curved upwards: Indicates location of PP. Darul Huda.
- 7) Arabic writing: It is the name of the board.

b. Geographical Location and Infrastructures of MA Darul Huda

MA Darul Huda located in Darul Huda Cottage Foundation which is the location in areas is easily accessible via public transportation, as well as private vehicles. Darul Huda Islamic Senior High School is located 2 (two) miles east of downtown Ponorogo and still including the Ponorogo district, precisely located at Ir. H. Juanda street number 36 MayakTonatanPonorogo.

c. Organizational Structure of MADarul Huda

In an educational institution, it is necessary to facilitate the structuring of school organization to share duties in an organization. It is needed to make the authority of individual units work together and help to achieve the objectives that have been defined. Personnel structure of MADarul Huda Ponorogo is as follows:

1. Head master : Drs. Mudafir
2. Head of administration : Ahmad Sujari, AZ
3. Assistance of managing curriculum : Umar, M. Pd. I
4. Assistance of managing school's facilities : MudirSunani
5. Assistance of school's public relation : Masyhuri, S. Pd. I
6. Coordinator of student counselor : QoribunSidiq, S. Ag

d. Teachers and Students in MA Darul Huda

The number of teachers and staff in MA Darul Huda Ponorogo in academic year 2015/2016 are about 131 people. Faculty members are among them came from graduated from cottage, University / College, and graduated from Darul Huda Islamic Senior High School.

The number of students of MA Darul Huda is increased years to years. The number of male and female students of MA Darul Huda according to the division in accordance with the class as attached. The table of the number of teachers, staff and students in MA Darul Huda are as follow:

Table 4.1 the number of students

Years	Students		
	Male	Female	Amount
2011/2012	663	860	1523
2012/2013	710	958	1668
2013/2014	807	1120	1927
2014/2015	833	1279	2112
2015/2016	877	1350	2227

Table 4.2 the number of teachers

No	Type of Teachers	Year				
		2011/2012	2012/2013	2013/2014	2014/2015	2015/2016
1	Civil servants	2	3	3	3	2
2	Permanent teachers	92	96	106	117	110
3	Teachers not fixed	-	-	-	-	11
4	Center for teacher contract	-	-	-	-	-
5	Local teacher contract	-	-	-	-	-
6	Employees	10	10	10	10	8
Total		104	109	119	130	131

B. Specific Findings

The population that was used in this research was the twelfth grade students of MA DarulPonorogo in academic year 2015/2016. The researcher took students of XII IAGA G as experiment group consist of 27 students, and students of XII IAGA F as control group, it also consist of 32 students.

The table below showed the result of writing achievement for the students' who are taught by using scientific approach (experiment group). The score of students writing skill was scored using the analytic scale for rating composition task from Brown and Bailey. In this table, showed pre and post test score. The pre-test is done before treatment to know the capability of the students.

Table 4.3 The students' writing skill for Experimental group

NO	NAME	SCORE	
		PRE-TEST	POST-TEST
1	AgustinaPurnamasari	88	92
2	AnnisatulKhoiriyah	66	82
3	AnugrahPermatasari	72	82
4	DewiSeptianasari	78	82
5	DwimasQusnul Q	72	78
6	FahmaDwiAtifah	72	92
7	FauziatuShufiyah	82	86
8	FikriaPutriNurSetya	92	96
9	IntanKurniawati	60	82
10	LilikNurHidayati	72	82
11	LuluatulMubaroroh	60	72
12	LussiAdySaputro	60	76
13	Miqroturrohmah	66	82
14	MukhlisotulKolbiyah	66	86
15	NilaAshrofusShofara	76	78
16	NisaulMahmudah	78	96

17	NoviaRosyidatul F	72	76
18	NurilHidayatil H	60	86
19	NurLaili	72	82
20	NurulMustafidah	72	82
21	QonikAtulMahmudah	76	86
22	RaraSitiMasruroh	82	78
23	RismaHasanawati	72	86
24	TetikKhoirilHidayah	78	78
25	UlfaturRodliyah	60	78
26	YeniRahmawati	60	86
27	Yursida	82	92
28	ZahrotulMuna	92	92
Total		2038	2254

Based on data obtained was distributed to 60 respondents indicated that the highest score was 96 and the lowest was 72.

The result of students' test of experimental class can be seen clearly on the following table. For the first will explore about pre test and then the result of post test in experiment and control class.

Table 4.4 Frequency Distribution of Pre Test in Experiment Class
VAR00001

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 60	6	18.8	21.4	21.4
66	3	9.4	10.7	32.1
72	8	25.0	28.6	60.7
76	2	6.2	7.1	67.9
78	3	9.4	10.7	78.6

82	3	9.4	10.7	89.3
88	1	3.1	3.6	92.9
92	2	6.2	7.1	100.0
Total	28	87.5	100.0	
Missing System	4	12.5		
Total	32	100.0		

From table above, could be seen that the score of students' writing was various. There were 21,4% Or 6 students got score 60, 10,7% or 3 students got score 66, 28,6% or 8 students got score 72, 7,1% or 2 students got score 76, 10,7% or 3 students got score 78, 10,7% or 3 students got score 82, 3,6% or 1 student got score 88, 7,1% Or 2 students got score 92.

Based on the table above, the histogram can be seen in as follows:

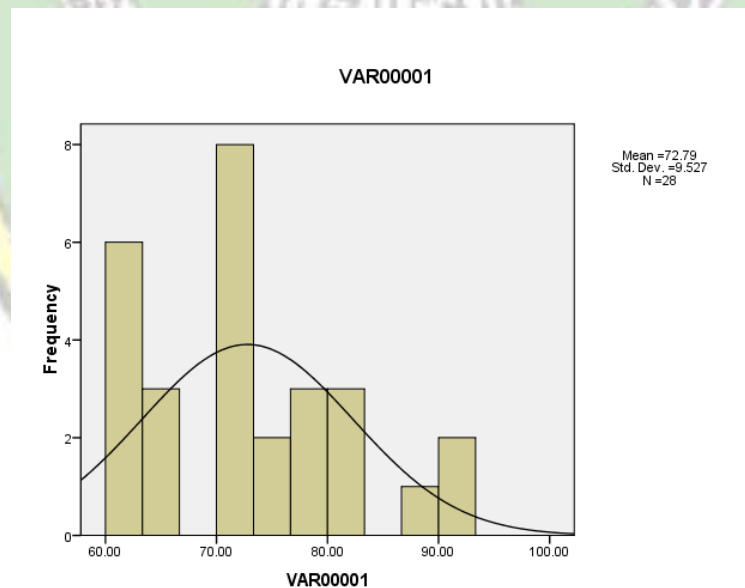


Figure 4.1 Histogram for the pre test in experiment class

From the histogram above, it is stated $M = 72,79$ and $SD = 9,527$. To determine the category of the students' writing skill was good, medium or poor, the researcher grouped scores using the standard as follows:

- 1) More than $M + 1.SD$ ($72,79 + 9,527 = 82,317$) is categorized into good
- 2) Between $M - 1.SD$ to $M + 1.SD$ is categorized into medium.
- 3) Less than $M - 1.SD$ ($72,79 - 9,527 = 63,263$) is categorized into low.

Thus it can be seen that the scores which are more than 82 is considered into good, while the scores which are less than 63 is categorized into low and the score of between 63-82 is categorized medium. That categorization can be clearly seen in the following:

Table 4.5 The Categorization of Students' Pre Test in Experimental Class

No	Score	Frequency	Percentage	Category
1	More than 82	6	21%	Good
2	Between 63- 82	16	58%	Medium
3	Less than 63	6	21%	Low
Total		28	100%	

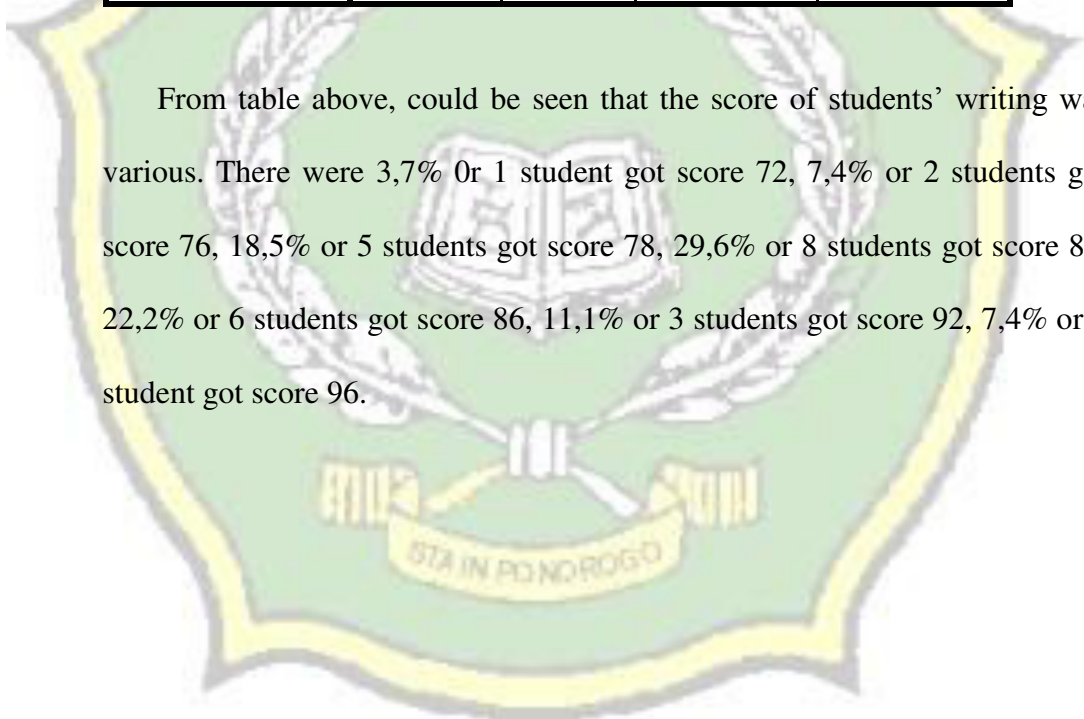
From the such categorization can be seen that the students' writing who are not taught by scientific approach showed that 21% in the good category, 58% in a medium category and 21% in a low category.

Table 4.6 Frequency Distribution of Post Test in Experiment Class

VAR00001

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	72	1	3.1	3.7	3.7
	76	2	6.2	7.4	11.1
	78	5	15.6	18.5	29.6
	82	8	25.0	29.6	59.3
	86	6	18.8	22.2	81.5
	92	3	9.4	11.1	92.6
	96	2	6.2	7.4	100.0
	Total	27	84.4	100.0	
Missing	System	5	15.6		
Total		32	100.0		

From table above, could be seen that the score of students' writing was various. There were 3,7% Or 1 student got score 72, 7,4% or 2 students got score 76, 18,5% or 5 students got score 78, 29,6% or 8 students got score 82, 22,2% or 6 students got score 86, 11,1% or 3 students got score 92, 7,4% or 2 student got score 96.



Based on the table above, the histogram can be seen in as follows:

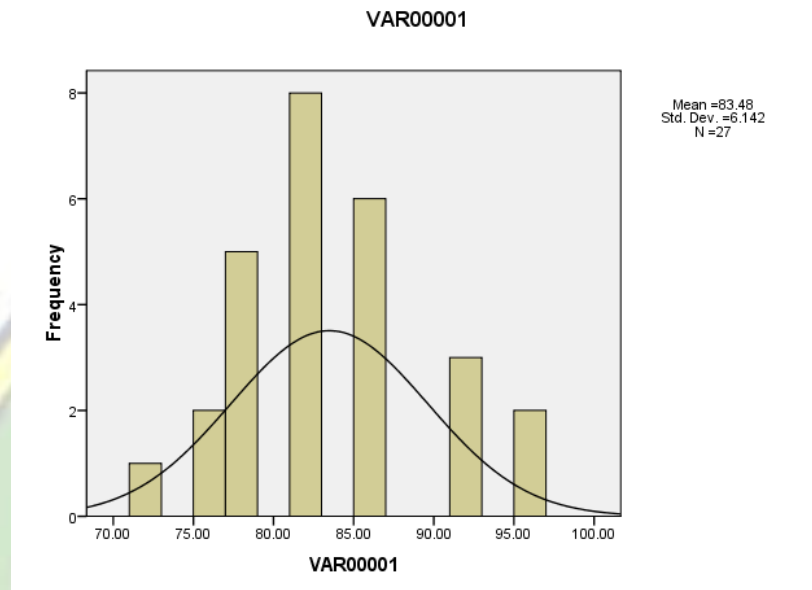


Figure 4.2 Histogram for the post test in experiment class

From the histogram above, it is stated $M = 83,48$ and $SD = 6,142$. To determine the category of the students' writing skill was good, medium or poor, the researcher grouped scores using the standard as follows:

- 1) More than $M + 1.SD$ ($83,48 + 6,142 = 89,622$) is categorized into good
- 2) Between $M - 1.SD$ to $M + 1.SD$ is categorized into medium.
- 3) Less than $M - 1.SD$ ($83,48 - 6,142 = 77,338$) is categorized into low.

Thus it can be seen that the scores which are more than 90 is considered into good, while the scores which are less than 77 is categorized into low

and the score of between 77-90 is categorized medium. That categorization can be clearly seen in the following:

Table 4.7 The categorization of students' post test in Experimental class

No	Score	Frequency	Percentage	Category
1	More than 90	5	19%	Good
2	Between 77- 90	19	70%	Medium
3	Less than 77	3	11%	Low
Total		27	100%	

From the such categorization can be seen that the students' writing skill showed that 19% in the good category, 70% in a medium category and 11% in a low category.

The next table showed the students' writing skill that was not using scientific approach (control group). The score of students' writing skill was also scored using the analytic scale for rating composition task from Brown and Bailey.

Table 4.8 Score table of control group (Y)

NO	NAME	SCORE	
		PRE-TEST	POST-TEST
1	AshriNuurun	72	76
2	AvinahariAhid	72	82
3	DisaWaliyatul	72	82
4	DurotulIzati	72	80

5	DyahLutfi A	80	82
6	Erna Dwi C	56	72
7	FawaIdatuz Z	80	86
8	FikiLuluin N	70	86
9	IinKhoiriyah	60	78
10	IsnatunMuna	72	76
11	JelitaArma D	56	78
12	Kartika	56	82
13	LailatulLatifah	56	86
14	MiftahSa'ada	60	86
15	Muthohiroh	56	86
16	NgumrotulKh	60	66
17	Riska Indah K	56	82
18	RizkiKurnia	70	82
19	ShelyaGiatna P	60	86
20	SitiMutamatun	60	70
21	SuciLailatul Q	56	86
22	SuciNovianti	60	82
23	Suprihatin	80	86
24	UlfaMiftaqul J	80	86
25	UmmiKhariroh	72	76
26	Yuni	60	86
27	Yunitasari	60	72
28	ZulfaturRosyid	72	86
29	RisaNofitasari	56	82
30	KhoirunNisa'	70	76
31	FebyMiftaqul J	70	82

32	EstyHibatul F	72	82
Total		2104	2586

Based on data obtained was distributed to 60 respondents indicated that the scientific approach highest score was 86 and the lowest was 66.

The result of students' test of scientific approach can be seen clearly on the following table.

**Table 4.9 Frequency Distribution of Pre Test in Control Class
VAR00002**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 56	8	25.0	25.0	25.0
60	8	25.0	25.0	50.0
70	4	12.5	12.5	62.5
72	8	25.0	25.0	87.5
80	4	12.5	12.5	100.0
Total	32	100.0	100.0	

From table above, could be seen that the score of students' writing was various. There were 25% or 8 students got score 56, 25% or 8 students got score 60, 12,5% or 4 students got score 70, 25% or 8 students got score 72, 12,5% or 4 students got score 80.

Based on the table above, the histogram can be seen in as follows:

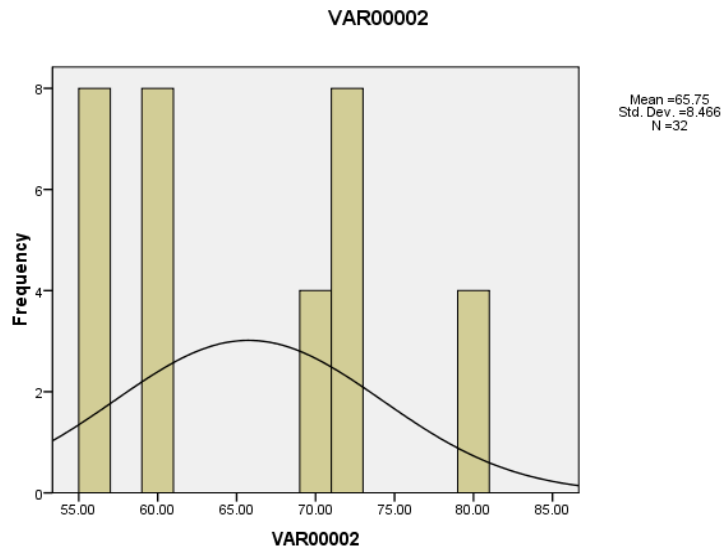


Figure 4.3 Histogram for the pre test in control class

From the histogram above, it is stated $M = 65,75$ and $SD = 8,466$. To determine the category of the school facilities was good, medium or poor, the researcher grouped scores using the standard as follows:

- 1) More than $M + 1.SD$ ($65,75 + 8,466 = 74,216$) is categorized into good
- 2) Between $M - 1.SD$ to $M + 1.SD$ is categorized into medium.
- 3) Less than $M - 1.SD$ ($65,75 - 8,466 = 57,284$) is categorized into low.

Thus it can be seen that the scores which are more than 74 is considered into good, while the scores which are less than 57 is categorized into low

and the score of between 57-74 is categorized medium. That categorization can be clearly seen in the following:

Table 4.10The categorization of students' pre test in control class

No	Score	Frequency	Percentage	Category
1	More than 74	4	12%	Good
2	Between 57- 74	20	63%	Medium
3	Less than 57	8	25%	Low
Total		28	100%	

From the such categorization can be seen that the students' pre test for control group showed that 12% in the good category, 63% in a medium category and 25% in a low category.

Table 4.11Frequency Distribution of Post Test in Control Class

VAR00002				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 66	1	3.1	3.1	3.1
70	1	3.1	3.1	6.2
72	2	6.2	6.2	12.5
76	4	12.5	12.5	25.0
78	2	6.2	6.2	31.2
80	1	3.1	3.1	34.4
82	10	31.2	31.2	65.6
86	11	34.4	34.4	100.0
Total	32	100.0	100.0	

From table above, could be seen that the score of students' writing was varieties. There were 3,1% Or 1 student got score 66, 3,1% or 1 student got score 70, 6,2% or 2 student got score 72, 12,5% or 4 students got

score 76, 6,2% or 2 student got score 78, 3,1% or 1 student got score 80, 31,2% or 10 students got score 82, 34,4% Or 11 students got score 86.

Based on the table above, the histogram can be seen in as follows:

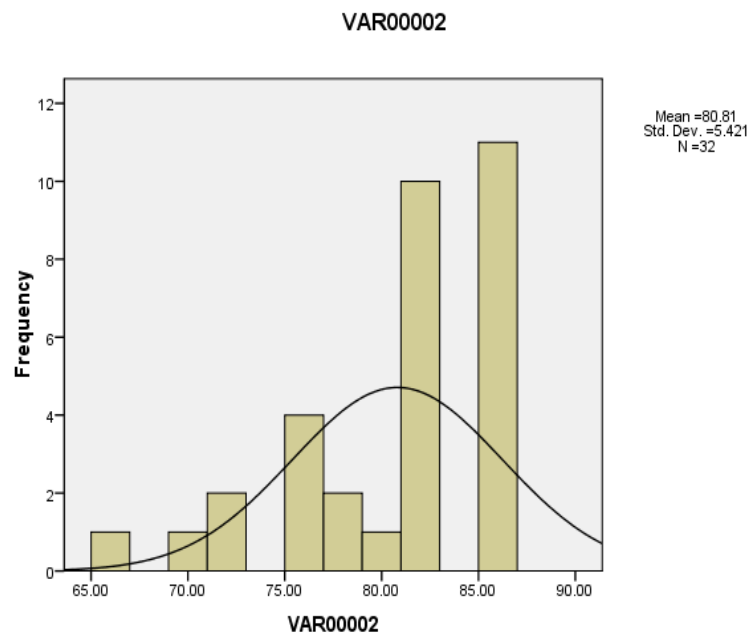


Figure 4.4 Histogram for the post test in control class

From the histogram above, it is stated $M = 80,81$ and $SD = 5,421$. To determine the category of the writing skill was good, medium or poor, the researcher grouped scores using the standard as follows:

- 1) More than $M + 1.SD$ ($80,81 + 5,421 = 86,231$) is categorized into good
- 2) Between $M - 1.SD$ to $M + 1.SD$ is categorized into medium.
- 3) Less than $M - 1.SD$ ($80,81 - 5,421 = 75,389$) is categorized into low.

Thus it can be seen that the scores which are more than 86 is considered into good, while the scores which are less than 75 is categorized into low and the score of between 75- 86 is categorized medium. That categorization can be clearly seen in the following:

Table 4.12 The Categorization of Post Test Students' Writing Skill in Control Class

No	Score	Frequency	Percentage	Category
1	More than 86	11	34%	Good
2	Between 75- 86	17	53%	Medium
3	Less than 75	4	13%	Low
Total		32	100%	

From the such categorization can be seen that the students' writing which are not taught by scientific approach showed that 34% in the good category, 53% in a medium category and 13% in a low category.

C. Analysis Data

1. Normality Test

Normality test has a purpose to know the frequency distribution of data research. This research uses Kolmogorov- Smirnov to calculate the normality of data. In this formula, researcher tried to find out the a_1 maximum of data. Based on this formula the researcher finds out the result of a_1 maximum as follows:

Table 4.13 The Result of Normality Test

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Scientific Approach	,166	27	,054	,936	27	,095
Writing Skill	,130	27	,200*	,938	27	,108

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Based on calculation using Kolmogorov- Smirnov and the calculation by using SPSS 19 program, the result of the test explained in table 4.13. Referring to the table 4.13 above, it can be concluded that the data is normally distributed. The data is normally distributed if the significant value $> 0,05$. In the Kolmogorov-Smirnov column, we can view that the significant value for the scientific approach is 0,054. Therefore, the significant value is greater than 0,05. Moreover, the result of Kolmogorov-Smirnov column for students' writing skill in the following table showed 0.200, it indicated that the data for students' writing skill is normally distributed.

2. Homogeneity Test

Homogeneity is needed before compare some groups of data. This test need moreover to know variance of homogeneity in comparing the

two group or more⁴⁷. Based on SPSS 19 program, the researcher find out the result of data as follows:

Table 4.14 the result of Homogeneity test

Test of Homogeneity of Variances
VAR00001

Levene Statistic	df1	df2	Sig.
2,347	4	17	,096

Based on calculation using SPSS 19 program, the result of the test explained in table 4.14, it can be concluded that the data is homogenous. The data is homogenous if the significant value $> 0,05$. In the column, we can view that the significant value for the scientific approach is 0,096. Therefore, the significant value is greater than 0,05. So the sample data of experiment and control class is homogenous.

3. Testing Hypothesis

From both tables above, the researcher compare the mean score of students' writing skill taught by scientific approach (X) and the students' writing skill who are taught without scientific approach (Y) with SPSS 19 program.

⁴⁷RetnoWidyaningrum, Statistika(PustakaFelicha: Yogyakarta, 2013), 212.

Table 4.15 Paired Samples Test of Scientific Approach in Developing Writing Skill

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	VAR00001 - VAR00002	10,519	9,807	1,887	6,639	14,398	5,573	26	,000

Referring to the table 4.15 above, it can be concluded that in 5% significant value $< 0,05$. In the column, we can view that the significant value for the scientific approach is 0,000. Therefore, the significant value is less than 0,05. In 5% significant t value is greater than table, there is t table was 2,00 and t value was 5,57. So the researcher conclude that the scientific approach effective in developing writing skill, because there is a significant difference of achievement on writing by scientific approach and without it.

D. Discussion

From the computation above, it was shown that the difference coefficient of students taught by scientific approach and the students not being taught by scientific approach is 5,573 it was used to find out whether the difference coefficient was a significant coefficient or not, and furthermore it could be used a basic to generalize the population.

Hypothesis test (t_0) at 5,573 from the computation above would be compared to the “t” index (t_t) with the condition stated below:

- 1) If the $t_0 \geq t_t H_a$ was accepted. It means that the mean of both variables was significant different.

To determine t_0 was by checking db and consulted with the t_t score:

$$\begin{aligned} db &= (n_1 + n_2) - 2 \\ &= (27 + 32) - 2 \\ &= 59 - 2 \\ &= 57 \end{aligned}$$

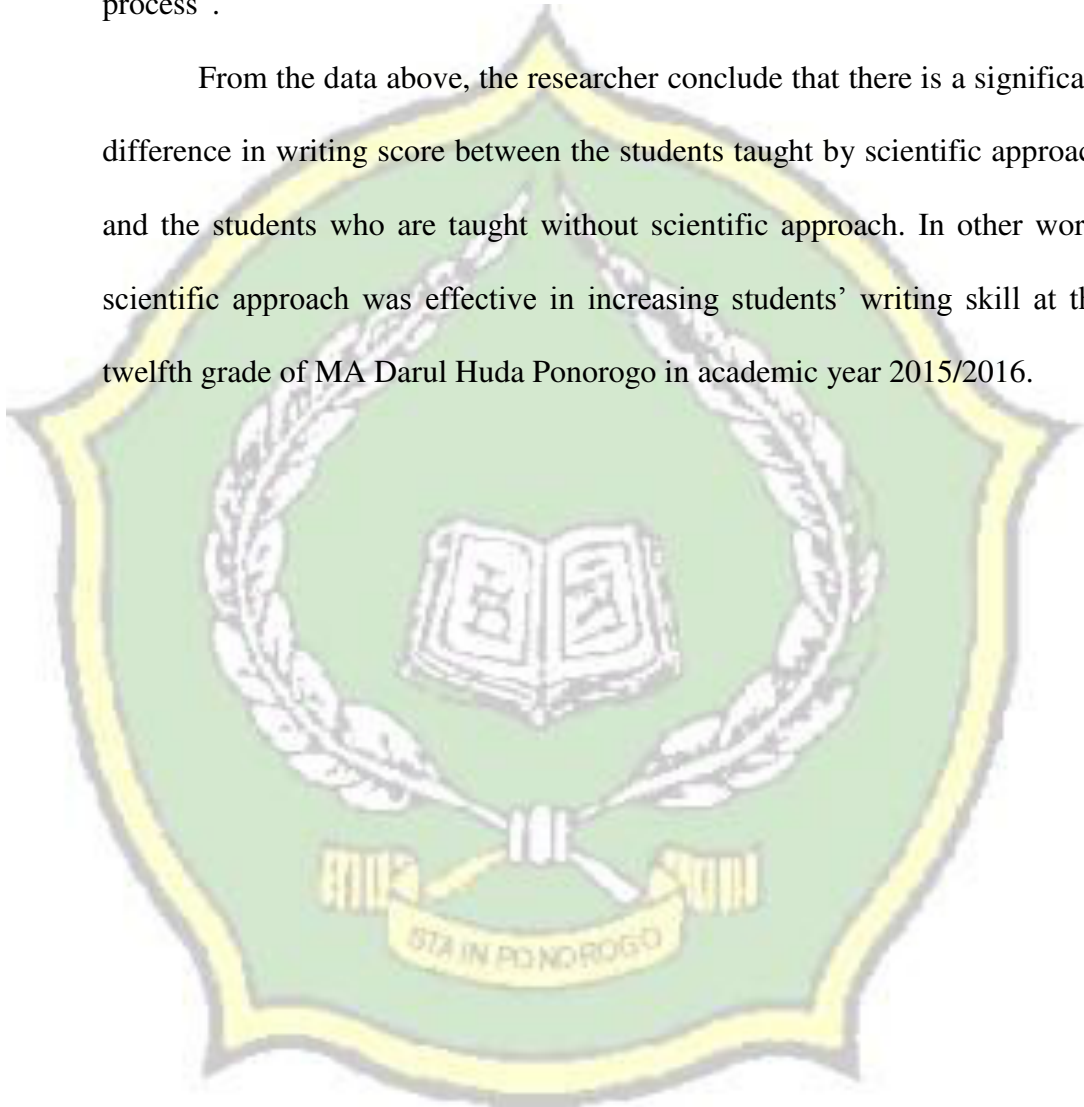
From the db score, the researcher could know that in 5% significance level $t_0 = 5,573$ and $t_t = 2,00$. Based on this statement, the researcher interprets that there was a significant difference between the students taught by scientific approach and the students not being scientific approach, it implies that the students taught by scientific approach achieve a better score in writing.

So, alternative hypothesis (H_a) that states that the students taught by scientific approach will achieve a better score in writing was accepted.

It is suitable with theory of Direktorat Jendral Pendidikan Dasar, 2013a “scientific is also considered relevant with the idea that learning is a scientific

process in the classroom. Thus, how learning should reflect fixed procedures starting from observing, questioning, experimenting, associating, and communicating. A scientific approach is effective when used during writing process”.⁴⁸

From the data above, the researcher conclude that there is a significant difference in writing score between the students taught by scientific approach and the students who are taught without scientific approach. In other word, scientific approach was effective in increasing students’ writing skill at the twelfth grade of MA Darul Huda Ponorogo in academic year 2015/2016.



⁴⁸AgusAkhmadi, PendekatanSaintifik(Yogyakarta: Araska, 2015), 23.

CHAPTER V

CONCLUSION AND RECOMMENDATION

A. Conclusion

Referring to the findings and discussion in the previous chapter, it has been found that the comparison value (t_o) between writing achievements of students who are taught by scientific approach is 5,573. This is greater than the “t” value in the table (t_t), which is 2.00 at 5% and 2.65 at 1% significant level, with $db = 47$. So, H_a is accepted. So the researcher concludes that there is significant difference in writing score between the students who are taught by scientific approach and the students who are not taught by scientific approach. In other words, scientific approach was effective in increasing students' writing skill at twelfth grade of MA Darul Huda Ponorogo in academic year 2015/2016.

B. Recommendation

Having known the result of research, the researcher gives some recommendation:

1. For the teacher

English teachers are suggested to enrich their teaching skills and take part in increasing scientific approach

2. For the school

Refer to the result of research, should give more attention to use scientific approach in teaching writing, because it provided that have positive correlation with students' writing skill.

3. For parents

Parents should give more support to their children to study hard in English lesson especially in writing.



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