# THE EFFECTIVENESS OF GRAMMARLY AND PROWRITINGAID APPLICATION TOWARD WRITING SKILL ACROSS STUDENTS WRITING LEVEL OF MAN BATU STUDENTS

THESIS



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THESIS

Submitted to the Faculty of Education and Teacher Training in Partial Fulfillment of the Requirement for the Degree of English Language Teaching (S.Pd.) in the English Education Department



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May, 2022

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# THE EFFECTIVENESS OF GRAMMARLY AND PROWRITINGAID APPLICATION TOWARD WRITING SKILL ACROSS STUDENTS WRITING LEVEL OF MAN BATU STUDENTS

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Assalamu'alaikum Wr. Wb

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Malang, June 2, 2022 The Researcher, Muhammad İsmail Wahyuda NIM.18180029

# ΜΟΤΤΟ

خَيْرُ النَّاسِ أَنْفَعُهُمْ لِلنَّاسِ

"The best of humans are those who are most beneficial to humans."

(HR. Ahmad)

#### DEDICATION

The researcher would like to express gratitude to ALLAH SWT and the Prophet Muhammad SAW. They have given grace and gifts that have given, such as knowledge, strength, fortitude, and health, which helped me to continue to rise and struggle to complete this thesis.

> This thesis is dedicated to my beloved father and mother Bapak Yayok Wahyudi dan Ibu Umi Khuridah

> > And my brothers

Faza Ahmad Nawfal Almuzakky

Azmya Farzana Sheeza Hafidzah

Whose always gives the best prayers, provides encouragement and love in every step I take.

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Malang, June 2, 2022

Muhammad Ismail Wahyuda NIM.18180029

# LATIN ARABIC TRANSLITERATION GUIDE

The writing of Arabic-Latin transliteration in this thesis uses transliteration guidelines based on a joint decision of the Minister of Religion of the Republic of Indonesia and the Minister of Education and Culture of the Republic of Indonesia Number 158 of 1987 and Number 0543b/U/1987 which can be described as follows:

# A. Words

I = a	z = c	q = ق
= b	s = s	k = ك
t = Ľ	sy = ش	ປ = 1
ts = ٹ	sh = ص	m = م
<del>ر</del> = غ	dl = ض	n = ن
$\zeta = h$	L = th	w = و
$\dot{z} = kh$	zh = خل	<b>ھ</b> = h
c = d	٤ = ٢	۶ = .
$\dot{z} = dz$	$\dot{\mathbf{z}} = \mathbf{g}\mathbf{h}$	y = ي
r = c	ف $f$	

## **B.** Long Vocal

# **C. Dipthong Vocal**

Long Vocal (a)	= â	وأ	= aw
Long Vocal (i)	= î	يأ	= ay
Long Vocal (u)	$= \hat{u}$	وأ	= û
		يإ	=î

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## ABSTRAK

Wahyuda, Muhammad Ismail. 2022. Efektivitas Aplikasi Grammarly dan ProWritingAid Terhadap Keterampilan Menulis Berdasarkan Tingkat Menulis Siswa MAN Batu. Skripsi. Tadris Bahasa Inggris. Fakultas Ilmu Tarbiyah dan Keguruan. Universitas Islam Negeri Maulana Malik Ibrahim Malang. Pembimbing Dr. Alam Aji Putera, M.Pd.

# Kata kunci: Pembelajaran keterampilan menulis, Tingkat kemampuan menulis siswa, Grammarly, ProWritingAid.

Kemampuan menulis merupakan salah satu kemampuan dalam bahasa Inggris yang sulit untuk dikuasai. Tantangan bagi siswa dalam menguasai kemampuan menulis dikarenakan kemampuan menulis membutuhkan kerja fisik dan mental dalam waktu bersamaan. Kemampuan menulis juga membutuhkan penguasaan akan pengetahuan dasar dalam bahasa Inggris, mulai dari aspek kebahasaan hingga penyusunan kalimat. Peneliti tertarik untuk mengetahui keefektifaan aplikasi Grammarly dan ProWritingAid terhadap keterampilan menulis berdasarkan tingkat kemampuan menulis siswa pada MAN kota Batu.

Tujuan penelitian ini adalah untuk menguji keefektifan aplikasi Grammarly dan ProWritingAid terhadap keterampilan menulis berdasarkan tingkat kemampuan menulis siswa pada MAN kota Batu. Tujuan yang kedua untuk menguji aplikasi Grammarly dan ProWritingAid yang paling efektif untuk digunakan dalam pembelajaran keterampilan menulis pada kelompok siswa dengan kemampuan menulis yang tinggi dan rendah pada siswa MAN Kota Batu.

Penelitian ini menggunakan pendekatan quantitative dengan menggunakan desain penelitian factorial 2x2. Pengumpulan data dalam penelitian ini menggunakan tes menulis pada materi pelajaran *explanation text*. Penelitian ini dilakukan kepada 63 siswa kelas XI di MAN Kota Batu. Peneliti menggunakan *stratified random sampling* sebagai metode untuk memilih sampel penelitian.

Penemuan dalam penelitian ini menunjukkan bahwa aplikasi Grammarly dan ProWritingAid efektif digunakan untuk pengajaran keterampilan menulis bahasa inggris pada kelompok siswa dengan kemampuan menulis yang tinggi dan rendah pada siswa MAN Kota Batu. Penemuan kedua adalah aplikasi Grammarly lebih efektif digunakan pada kelompok siswa dengan kemampuan menulis yang rendah. Sedangkan aplikasi ProWritingAid lebih efektif digunakan pada kelompok siswa dengan kemampuan menulis yang tinggi.

## ABSTRACT

Wahyuda, Muhammad Ismail. 2022. The Effectiveness of Grammarly and Prowritingaid Application Toward Writing Skill Across Students Writing Level of MAN Batu Students. Undergraduate Thesis. English Education Department. Faculty of Education and Teacher Training. Universitas Islam Negeri Maulana Malik Ibrahim Malang. Thesis Advisor Dr. Alam Aji Putera, M.Pd.

# Keywords: Teaching writing, Student writing level, Grammarly, ProWritingAid application.

Writing skills is one of the most difficult skills in English to be mastered. The challenge for students in mastering writing skills is that writing skills require physical and mental work simultaneously. Writing skills also require mastery of basic knowledge in English, from linguistic aspects to sentence construction. The researcher is interested in knowing the effectiveness of Grammarly and Prowritingaid application toward writing skills across students writing level of MAN batu students.

The objective of this research are to examine the effectiveness of Grammarly and ProWritingAid application toward writing skill across students writing level of MAN Batu students. The second objective is to examine what are from both Grammarly and ProWritingAid that the most effective for teaching writing skills across students writing level of MAN Batu students.

This study used a quantitative approach using a 2x2 factorial research design. Data collection in this study used a writing test on the subject matter of explanation text. This research was conducted on 63 eleventh grade students at MAN Batu. The researcher used stratified random sampling as the method to select research sample.

The findings in this study indicate that the use of Grammarly and ProWritingAid applications across students writing level is effective in teaching English writing skills for MAN Batu students. Then the Grammarly application is more effective for groups of students with low English writing level, while ProWritingAid application is more effective for groups of students with high English writing level.

# مستخلص البحث

وحيودا, محمد إسماعيل. 2022. فعالية تطبيقات Grammarly و ProWritingAid على تعلم مهارة الكتابة بناء على مستوي قدرة الكتابة لدى الطلبة في المدرسة الثانوية الإسلامية الحكومية بمدينة باتو. البحث الجامعي. قسم تعليم اللغة الإنجليزية. كلية علوم التربية والتعليم. جامعة مولانا مالك إبراهيم الإسلامية الحكومية مالانج . المشرف: الدكتور علام آجي بوتيرا الماجستير.

الكلمات المفتاحية: تعلم مهارة الكتابة، قدرة الطلبة على الكتابة، تطبيق AWE.

قدرة الكتابة هي واحدة من القدرات في اللغة الإنجليزية التي يصعب إتقانها. التحدي الذي يواجه الطلبة في إتقان مهارة الكتابة هو أن مهارة الكتابة تتطلب عملا بدنيا وعقليا في نفس الوقت. تتطلب قدرة الكتابة أيضا إتقان المعرفة الأساسية باللغة الإنجليزية، بدءا من الجوانب اللغوية إلى إعداد الجملة. يهتم الباحث بمعرفة فعالية تطبيقات Grammarly و BroWritingAid على تعلم مهارة الكتابة بناء على مستوى قدرة الكتابة لدى الطلبة في المدرسة الثانوية الإسلامية الحكومية بمدينة باتو.

أهداف هذه البحث هو: 1). اختبار فعالية تدريس مهارة الكتابة باستخدام تطبيقات Grammarly و ProWritingAid في مجموعات من الطلبة ذوي القدرة العالية والمنخفضة على الكتابة لدى الطلبة في المدرسة الثانوية الإسلامية الحكومية بمدينة باتو. 2). لاختبار أي من Grammarly و ProWritingAid هو الأكثر فعالية لاستخدامها في تعلم مهارة الكتابة في مجموعات من الطلاب ذوي القدرة العالية والمنخفضة على الكتابة لدى الطلبة في المدرسة الثانوية الإسلامية الحكومية بمدينة باتو.

استخدم الباحث في هذا البحث الجامعي المنهج الكمي و ثم استخدم الباحث تصميم البحث العاملي 2x2.وأما استخدم الباحث جمع البيانات في هذه البحث الجامعي اختبار كتابة حول موضوع نص الشرح. تم إجراء هذا البحث على 63 طلبتا من الفصل الحادي عشر في المدرسة الثانوية الإسلامية الحكومية بمدينة باتو.

أظهرت نتائج هذا البحث الجامعي في ما يلي: 1). يتم استخدام تطبيقات Grammarly و ProWritingAid بشكل فعال لتعليم مهارة الكتابة باللغة الإنجليزية في مجموعات من الطلبة ذوي القدرة العالية والمنخفضة على الكتابة لدى الطلبة في المدرسة الثانوية الإسلامية الحكومية بمدينة باتو. 2). يتم استخدام تطبيق Grammarly بشكل أكثر فعالية في مجموعات الطلبة ذوي القدرة المنخفضة على الكتابة. في حين يتم استخدام تطبيق ProWritingAid بشكل أكثر فعالية في مجموعات من الطلبة ذوي مهارة الكتابة العالية.

## **CHAPTER I**

## **INTRODUCTION**

In this chapter, the researcher explains things related to the introduction: the background of the research, the object of the study, the significance of the study, the limitations of the study, and the definition of key term.

## **1.1 Background of the Study**

Language is the most essential communication tool in human life. According to Fromkin, Rodman, & Hyams (2014), language is used to convey information to others (My new bike is pink), ask questions (Who left the party early?), give commands (Stop lying!), and express wishes (May there be peace on Earth). Humans will understand each other with the presence of language. Humans have mastered at least one language, which is obtained from the surrounding social environment, where the language is also referred to as the mother tongue. This language is most often used to communicate with the surrounding social environment.

For residents of Indonesia, the Indonesian language is the primary language used because of the position of the Indonesian language as the national language. However, this does not rule out the demands to learn and master foreign languages; one of them is English. English is known as the lingua franca, which means English is used as the language of communication for the international community. Therefore, mastery of the English language is important for someone to enter the international community. English has several skills that must be mastered, namely speaking, listening, reading, and writing. Based on these four skills, writing is considered the most crucial skill, both in terms of learning English itself and in the academic world. Writing is considered a fundamental skill that must be mastered by an academic because, by writing, many benefits can be obtained. Allah SWT. said in Surah Al-Alaq verses 4-5

الَّذِيْ عَلَّمَ بِالْقَلَمِ , عَلَّمَ الْإِنْسَانَ مَا لَمْ يَعْلَمْ

"(The Essence) who teaches (humans) by means of the qalam, teaches humans what they do not know" (Surah Al-Alaq: 4-5).

From the piece of the verse, Allah says that humans are taught about various things through the *qalam*. Quraish Shihab in Tafsir Al-Misbah explains that the word *qalam* in that verse can be interpreted as a pen or writing utensil, or it can also be interpreted as a result of the writing utensil. So from this explanation, Allah also teaches humans to write, because, through writing, knowledge can be taught or spread to many people. The Prophet also said in a hadits,

"Tie knowledge with writing" (HR. At-Thabrani and Hakim from Abdullah bin Amr)

The hadits further emphasizes that writing is an important activity because, by writing, knowledge can be preserved and even developed into more complex knowledge.

Writing activities also have various challenges of their own. Harmer (2003) reveals that writing is the most challenging skill to master; this is because when writing, there are several stages that must be done, starting from drafting, structuring, reviewing, focusing, and generating ideas and evaluation (Harmer, 2003). Drafting is a stage where the existing ideas are written down freely first, then proceed to the structuring stage. At this stage, the previously free writings are then arranged according to the arrangement of the writing. At the reviewing stage, the writing that has been arranged is rechecked, whether it is appropriate with the context of the writing, then also examines other aspects of the writing, then proceeds to the focusing stage, at this stage, the writing is re-examined to ensure that the writing is in accordance with the objectives expected by the author, then finally at the generating ideas and evaluation stage. This stage is the last in the writing activity, where each part is re-examined to assess whether it is in accordance with the rules of writing or not and assesses the content of the writing. These stages are interconnected with each other so that when there are things that need to be corrected in a part of the writing, it is not uncommon for other parts to be corrected. Nunan (2003) states that writing is a physical and mental activity. It can happen because writing is basically an activity that involves physical hand movements to write down ideas or thoughts that were previously abstract, then written on a medium. On the other hand, writing is also a mental activity, where the written ideas result from someone's thinking.

Linh & Thanh Ha (2021) conducted a study of 18 UNETI Englishmajor first-year students and found that the most considerable difficulty faced by students was regarding the cognitive elements of writing, followed by the emotional dimension of writing and the sociocultural component of writing. Students' cognitive abilities can be improved in various ways, starting from reading, creating a work, writing, and practising. When trying to write, feedback from the teacher becomes something meaningful that can be used as evaluation material for a piece of writing. Along with the development of technology, correction activities and providing feedback by teachers have been made easier by the existence of software called AWE (Automated Writing Evaluation). Researcher has observed 35 students of eleventh grade in MAN Batu. The results of these observations indicate that from 35 students, there are some students who have not been able to write well in accordance with the rules of English grammar. The results of students writing assignments also showed that they were less able to choose words that matched the written context. Students are also still unable to arrange a sentence into a good sentence.

Automated Writing Evaluation (AWE) is software where someone can evaluate their writing automatically. Hockly (2019) explains how this software works by comparing a written text to an extensive database of the writing of the same genre, written in answer to a specific prompt or rubric. Automated Writing Evaluation (AWE) provides various kinds of feedback, starting from grammatical mistakes, syntax, text complexity, total word count, and vocabulary range, through statistical modelling and algorithms, and then gives the overall writing value. From the various kinds of feedback, the software also provides suggestions to change the writing error to be correct.

Hockly (2019) states that the Automated Writing Evaluation (AWE) can be used for summative and formative assessments. The use of AWE as a summative assessment began in the 1960s, when the use of AWE increased. The use of the software is considered as a new breakthrough which is cheaper and faster when compared to human evaluators. Because of this, the use of AWE caused controversy. Experts criticize that the software cannot replace the role of human evaluators. Basically, AWE is run by a system based on a database only. The evaluation results and assessments given are only limited to writing errors in terms of structure, grammar, word selection, etc. In fact, writing also requires the ability to think critically and be creative, where these aspects can only be assessed by human evaluators until now. The use of Automated Writing Evaluation (AWE) for formative assessment can be said as a way to improve a person's writing ability quickly and easily because the feedback is given directly so that a person can find out errors from writing quickly, other than that these errors can be directly corrected with the suggestions provided.

Li, Link, & Hegelheimer (2015), in their research on the role of Automated Writing Evaluation (AWE) feedback in ESL writing instruction, found that students felt very helpful with the software because they could overcome problems related to grammar on the writings they made. The use of AWE also motivates them to try other AWE applications to correct their writing. From the results of this study, it can be seen that the use of Automated Writing Evaluation (AWE) has a positive impact on users, especially on errors related to grammar. A study conducted by Linh & Thanh Ha (2021) found that the most common problem faced by students was difficulty in word choice. So that the use of AWE can also be a solution to overcome these problems because the software also provides a choice of words according to the context of writing.

Researcher used two Automated Writing Evaluation (AWE) software in this study, namely Grammarly and ProWritingAid. Grammarly is one of the most popular AWE software used in writing activities (Fahmi & Cahyono, 2021). Grammarly is considered the most straightforward application to use with a simple and easy-to-understand user interface. In addition, Grammarly provides various features in it, the application not only corrects grammatical errors but can also correct the tone of the correspondence, provide suggestions for synonyms and word choices according to the writing context to make writing easier to understand, and can also to check plagiarism of an article. Grammarly also helps people make the right impression on the reader based on the audience and goals. ProWritingAid is an Automated Writing Evaluation (AWE) application almost the same as Grammarly because both applications are basically webbased applications. However, Grammarly has a broader scope because it has applications that can be installed on mobile devices. ProWritingAid provides various features that can be used; just like Grammarly, ProWritingAid also provides correction suggestions if there are errors in writing. Besides that, the ProWritingAid application can also be used to check words that are often used, and the ProWritingAid application also provides an analysis of the sentence structure contained in writing. This application can also be used to measure the length of a sentence in an article. The ProWritingAid application can also analyze the transitions of each paragraph of an article. ProWritingAid also provides a feature that other Automated Writing Evaluation (AWE) applications do not have, this application can be used to measure how much the text can be read by a reader so that the results of the analysis can be used as a reference whether the writing is in accordance with the reader's goals.

Students' writing level in this study was determined by the scores of students writing achievement in eleventh grade English learning. Classification of students writing levels based on Arikunto's theory (2009, as cited in Putri & Refnaldi, 2020)

Numerical Score	Classification
90-100	Excellent
75-89	Good

Table 1.1 Achievement Scale by Arikunto (2009)

	uir
50-59 Le	ess
0-49 Pc	oor

In this study, the researcher simplified the classification of students writing levels into two levels, namely high writing level and low writing level. The high writing level consisted of students with excellent and good classifications, while the low writing level consisted of students with fair, less, and poor classifications. The following is the classification of students writing levels used in this study.

Table 1.2 Achievement scale used in this study

Numerical Score	Classification
75-100	High writing level
0-74	Low writing level

In short, to make students able to write well, various innovative ways are needed to make learning more exciting and compelling. In this study, researcher want to investigate the potential use of technology in education through the Grammarly and ProWritingAid application in writing skill across students writing level for MAN Batu students.

### **1.2 Research Problem**

This study focuses on finding out the effectiveness of the Grammarly and ProWritingAid application in writing skill across students writing level of MAN Batu students. Researcher arranged several problems in the study as follows:

- 1. How is the effectiveness of using Grammarly and ProWritingAid application toward writing skills across students writing level of MAN Batu students?
- 2. What are from both Grammarly and ProWritingAid that the most effective for teaching writing skills across students writing level of MAN Batu students?

# **1.3 Research Objective**

The objectives of this research are stated below:

- To examine the effectiveness of using Grammarly and ProWritingAid application toward writing skills across students writing level of MAN Batu students.
- To examine what are from both Grammarly and ProWritingAid that the most effective for teaching writing skills across students writing level of MAN Batu students.

# **1.4 Significance of the Research**

The results of this study are expected to increase knowledge for both academics and non-academics and are also expected to add to the treasures of knowledge in the world of education, especially regarding the use of Grammarly and ProWritingAid application in writing skills for MAN Batu students. The results of this research are also expected to open the public's view that developing technology can be further utilized in the world of education. The rapid development of technology has much potential to be further developed in order to make it easier for teachers in the learning process, as well as to present more exciting activities for students. If teachers are helped in learning activities, and students find learning more fun and more enjoyable, then learning objectives will be more easily achieved. The results of this study are also expected to have a significant impact on several groups as follows:

1. Students

Increase students' knowledge about the use of Grammarly and ProWritingAid application in writing English.

2. Teacher

As an evaluation tool and teacher's guide in the use of Grammarly and ProWritingAid application in teaching English writing skills for MAN Batu students.

3. School

This study can contribute knowledge and useful information for schools in developing technology in the field of education.

4. Researcher

Adding insight for researcher related to the use of Grammarly and ProWritingAid application in writing skills across students writing level in learning English for MAN Batu students. This research also produces useful information that can be used to conduct further research to develop existing knowledge.

5. Application developers

The results of this study can be used as evaluation material for application developers for further development in order to make applications that are more effective and both in terms of benefits and usage.

6. Universitas Islam Negeri Maulana Malik Ibrahim Malang This study can be used as documentation and various purposes as well as used as study material in the library, especially for the English Education Department.

## 1.5 Scope and Limitation of the Study

The scope of this research includes Grammarly and ProWritingAid application as a tool to help to learn writing skills across students writing level for MAN Batu students. While on the other side, this study limits itself not to include the Automated Writing Evaluation (AWE) application other than Grammarly and ProWritingAid, which is used by the researcher in this study.

## **1.6 Definition of Key Terms**

To avoid misunderstanding about the keywords in this study, the researcher describes several terms as follows:

1. Grammarly and ProWritingAid Application

Grammarly and ProWritingAid Application are database-based software that is used to automatically correct writing. This software can assist teachers in correcting students' writing assignments because this software provides various kinds of feedback, including grammatical mistakes, syntax, text complexity, total word count, and vocabulary range, through statistical modelling and algorithms, and then the overall writing value is given. From the various kinds of feedback, the software also provides suggestions to change the writing error to be correct.

2. Writing Skills

Writing skill is one of the skills that must be mastered in English. Writing skill is considered as the most challenging skill to learn compared to other skills. In writing, there are several stages that must be done, starting from drafting, structuring, reviewing, focusing, and generating ideas and evaluation. Writing skill is also a skill related to physical and mental.

3. Students Writing Achievement Level

Achievement can be interpreted as "the accomplishment of something" in simple terms. In the context of education, "something" can be interpreted as articulated learning goals. So it can be said that student writing achievement level in this study refers to the score obtained by students in terms of writing skill, and then the scores arranged into level scale.

#### **CHAPTER II**

#### LITERATURE REVIEW

In this chapter, the researcher explain the information and theories related to the variables and topics in this research. Information and theory are taken based on previous research. Some of the information and theories that presented include the definition of writing, the process of writing, the definition of Automated Writing Evaluation (AWE), as well as previous research on the topic being researched.

#### 2.1 Definition of Writing

Writing ability is one of the four macro-skills in learning English (Mante-Estacio, Nino Valdez, & Pulido, 2018). Writing ability is an essential skill that students must master. According to Aryuntini, Astuti, & Yuliana (2018), writing is an activity to express ideas and thoughts through a series of words to become sentences and paragraphs. Based on this explanation, it can be interpreted that writing is a process to make thoughts or insights that were previously abstract into something concrete with writing. It also provides an opportunity to be able to spread and develop knowledge more efficiently. Raimes (1983) revealed several reasons why mastering writing skills is very important and can also help students learn. The first is that writing can strengthen students' understanding of grammatical structures, idioms, and also the vocabulary that has been taught by the teacher. Second, when writing, students get the opportunity to explore the language, to develop what they have learned before. Third, when students write, they have an attachment to the new language, they will try to express the ideas in their minds as well as possible,

and the constant use of the eyes, hands, and brain is a unique way of strengthening learning.

Harmer (2010) states that there are two purposes of writing that people should know, namely writing-for-writing and also writing-for-learning. The two objectives must be distinguished because they will affect the writing process to be carried out. It will also affect a person's focus and writing orientation. Writing-for-writing is used to develop people's writing skills as a "writer", so when writing, the main focus is only on how somebody can write well with various types of writing. In the writing-for-writing model, somebody is not required to focus on the language used in writing, but only focuses on the overall writing that is made.

In contrast to the writing-for-writing model, the writing-for-learning model requires a person to focus on the language used in writing. As the name implies, writing-for-learning is used to train or strengthen students' language skills. Writing is used as a way to strengthen understanding because writing is used as an aide-memoire or practice tool to help students practice and work with language they have been studying.

### 2.2 Process of Writing

The process of writing has several stages; there are many theories that explain the stages in writing. The first is the theory of the writing process proposed by Jeremy Harmer. Harmer mentioned that the writing process consists of planning, drafting, reviewing, and editing (Harmer, 2010). According to Harmer, the first stage in writing is planning. Planning can be said as the stage where someone prepares what he will write. It can be in the form of what topic will be written and the purpose of the writing later for what, who is the target reader of the article. Planning is an adequately important stage because it will determine the direction of the article so that when the writing process has started, a person will not lose his direction according to the plan he has previously determined. In the second stage, Harmer stated there was a drafting stage. The drafting stage is the stage where the predetermined plan is realized in the form of freewriting first. At this stage, a person has not perfected his writing, but he tries to write down his ideas or thoughts first. Then in the third stage, Harmer mentions the reviewing stage. At this stage, a person rereads the writing that he has made, then he will find some shortcomings from his writing. This stage is a crucial stage to ensure that the writing that has been made is in accordance with the plan that has been determined at the planning stage. Weaknesses found in the reviewing stage will be followed up at the next stage, namely the editing stage. The editing stage is the last stage in the writing process before the producing stage. At this stage, someone corrects some of the shortcomings that have been found in the reviewing stage. After this stage is completed, it can be said that the writing has been perfect in accordance with the plan that was set at the planning stage at the beginning. Harmer stated that several stages in the writing process above are not linear processes, but the process can run randomly according to a writer's needs (Harmer, 2010).

Almost the same as the theory of the writing process proposed by Harmer, Cox (2002) suggests that there are five stages in the writing process, namely, prewriting, drafting, revising, editing, and publishing. In the theory proposed by Cox, the planning stage in Harmer's theory is changed to prewriting. He stated that one part of the prewriting stage is brainstorming. Cox (2002) also states that there are three techniques in brainstorming, namely, make a list, cluster, and quick write.

Based on the two theories in the writing process above, it can be concluded that, in general, the writing process consists of three main processes, namely pre-writing, writing, and also post-writing. Pre-writing is the stage where someone prepares and plans the writing. At this stage, someone has also determined the topic, as well as the target readership of the writing. Then at the writing stage, someone starts to write down the ideas that are in mind to the written media, then at this stage, also someone corrects the writing he has made until the writing has been done according to the plan he has determined at the pre-writing stage. Then at the last stage, namely post-writing, someone prints or publishes the results of his writing so that others can read it.

#### 2.3 Definition of Automated Writing Evaluation (AWE)

Along with the development of technology, it also has a positive impact on the world of education. Learning activities are currently made easier by the existence of various kinds of software, one of which is Automated Writing Evaluation (AWE). Automated Writing Evaluation (AWE) is software that can give automatic feedback to the students' writings (Li et al., 2015), the feedback
is given in terms of grammar, writing structure, text readability, and also plagiarism of writing. Hockly (2019) explains how this software works by comparing a written text to an extensive database of the writing of the same genre, written in answer to a specific prompt or rubric. From this explanation, it can be seen that the AWE software has an extensive database containing writings, where the data is used for comparison with the texts being examined.

The main function of the Automated Writing Evaluation (AWE) is to provide feedback on writing to its users. The old way of checking writing is to rely on feedback from the teacher or feedback obtained from peer work with friends. There are several weaknesses in the feedback given by teachers and friends in pair work or groups. The problem that is often faced is regarding the relatively long examination time because human evaluators need to read the writing from beginning to end until finally finding errors in the writing, but if you use Automated Writing Evaluation (AWE) then the examination process will run instantly because the AWE software already has a database to compare with the text being checked.

Automated Writing Evaluation (AWE) also has weaknesses that cannot be avoided. Systems run by computers will not be able to match the performance of humans. An article has feelings expressed by the author towards the reader. It still cannot be checked by the Automated Writing Evaluation (AWE) software, and human evaluators are considered more capable of correcting this. From this statement, it can be concluded that the use of Automated Writing Evaluation (AWE) software must still be accompanied by feedback provided by the teacher.

## 2.4 Student Writing Achievement

According to Guskey (2012), achievement can be interpreted as "the accomplishment of something" in simple terms. In the context of education, "something" can be interpreted as articulated learning goals. From this explanation, it can be concluded that achievement has a close relationship with learning goals in the context of education. The teacher sets learning goals in the learning design as an indicator of the success of a teaching process. Broadly speaking, learning goals are divided into three types, namely cognitive, affective, and psychomotor. In short, the cognitive goal is a measure that focuses on intellectual matters. Cognitive goals are also the basis for designing a school's academic curriculum (Guskey, 2012). In contrast, affective goals are learning targets related to attitudes. Guskey (2012) argues that affective goals should be taught more intensively in elementary grades, this is because elementary school age is the time when character and nature are formed in humans. The last is psychomotor goals, namely learning targets related to student skills. In this study, the researcher used student writing achievement as one of the variables used. In other words, the researcher specified student achievement only in the realm of writing skills.

## 2.5 Previous study

In the following, the researcher explains several previous studies related to the Automated Writing Evaluation (AWE) for learning writing skills.

First, research was conducted by Fahmi & Cahyono (2021) regarding the perception of EFL students on the use of Grammarly and teacher feedback in learning writing. The study also examines whether there is a correlation between students' level of English proficiency and their perceptions of Grammarly and teacher feedback. The study involved 26 students of law who were taking an English for Specific Purpose (ESP) writing course. The data in this study were taken using a questionnaire and the students' TOEFL test results. The results of this study indicate that 93% of students think that Grammarly is an easy application to use. 78% of students think that the feedback given by Grammarly is easy to understand, and all students (100%) think that the feedback given by the teacher is easy to understand. From these results, it can be concluded that the ease of use and the easy-to-understand and straightforward user interface of the Grammarly application correlates with students' perceptions of using Grammarly. Another thing that can be seen is that the use of Grammarly and teacher feedback positively impacts students in learning writing.

Second, research conducted by Ghufron (2019) aims to find out about students' perceptions of the implementation of Grammarly and teacher corrective feedback as well as to find out the weaknesses and strengths of Grammarly and teacher corrective feedback in learning writing. The study involved two teachers and 120 students from the English Education Department of IKIP PGRI Bojonegoro, East Java. The study used a case study using a closed-ended questionnaire and interviews in a closed-ended and openended model as a technique for collecting data. Data obtained from a closeended questionnaire involving two teachers and 120 students indicate that 97% agree that the use of Grammarly and teacher corrective feedback can improve writing skills either directly or indirectly. Meanwhile, data obtained from openended interviews showed that students had positive perceptions regarding the use of Grammarly and teacher corrective feedback. Based on data obtained from close-ended interviews, it shows that Grammarly is more effective in correcting writing in terms of diction, grammar, spelling and punctuation. Grammarly is considered less effective in correcting writing in terms of content and organizing, whereas it is more effective if it is used for teacher corrective feedback. From this research, it can be seen that the research results obtained are not much different from the results of the first study described by the researcher above. This second study disclosed that the application of automated writing evaluation (AWE) was more effective for correcting writing in terms of language. At the same time, teacher corrective feedback was more effective for correcting writing in terms of content and writing arrangement.

Third, research was conducted by Ariyanto, Mukminatien, & Tresnadewi (2019). The research aims to determine the perceptions of teachers and students as well as the advantages and disadvantages of implementing the ProWritingAid application and teacher feedback in the classroom. This study focuses on the combination of the ProWritingAid application and teacher feedback so that this study does not identify it separately. The research involved 33 students majoring in informatics engineering who were taking an English for specific purpose writing course. This study uses a survey research model, where questionnaires are given to students and interviews are conducted with teachers as a technique for collecting data. The results of the study revealed that teachers are interested in using these strategies for further learning; this is because teachers feel the benefits are suitable for both teachers and students. Teachers feel that these strategies are able to improve students' writing skills; these strategies help teachers save work time. As with other studies that have been described by the researcher above, the ProWritingAid application is also considered more effective for correcting writing in terms of grammar, while teacher feedback is considered more effective for correcting writing in terms of content.

# CHAPTER III

# **RESEARCH METHOD**

This chapter contains an explanation of the research methods used in this study. This chapter contains research design, the subject of the study, research instruments, data collection, validity and reliability testing, and data analysis.

#### **3.1 Research Design**

This study uses quantitative research methods. According to Emzir (2008), quantitative research is a research approach that primarily uses a postpositivist approach in developing science and uses experiments and surveys that require statistical data as a research strategy. Specifically, this study uses experimental research. According to Gay, Mills, & Airasian (2012), Experimental research is the only research that can test the hypothesis correctly to prove a causal relationship (cause-effect). In experimental research, the researcher manipulates at least one independent variable by controlling for other relevant variables and observes the effect or influence on one or more dependent variables.

In this study, the researcher used a 2 x 2 factorial design. According to Ary, Jacobs, Razavieh, & Ary (2010), a factorial design is one in which the researcher manipulates two or more variables simultaneously in order to study the independent effect of each variable on the dependent variable, as well as the effects caused by interactions among the several variables. The purpose of a factorial design is to determine whether the effects of an independent variable are generalizable across all levels or whether the effects are specific to particular levels (Gay et al., 2012). There are various types of factorial design; these types are based on the number of groups or variables used in factorial design research. In this study, the researcher uses the simplest type of factorial design, which is  $2 \times 2$ . The meaning of type  $2 \times 2$  is that this method uses two variables which are both independent variables. Independent variables in factorial design research are also called factors. In this study, four groups were needed as research samples. The following table illustrates the research model that used by researcher.

There are two kinds of variables in this study, namely independent variable and dependent variable. The first is the Grammarly, ProWritingAid and also student writing level as the independent variable and the writing skills as the dependent variable.

	Grammarly Application (A <sub>1</sub> )	ProWritingAid Application (A <sub>2</sub> )
High Writing Level (B1)	$A_1B_1$	$A_2B_1$
Low Writing Level (B2)	$A_1B_2$	$A_2B_2$

Table 3.1 The Illustration of Factorial Design

Based on the table above, it shows that the research sample in this study consisted of four groups. The four groups are basically two groups that are distinguished from their level, from the two groups then divided into two groups again to be given treatment in each group. The first group was a group that consisted of high English proficiency students, they got treatment in the form of using the Grammarly application. The second group was a group that consisted of low English proficiency students, they got treatment in the form of using the Grammarly application. The third group was a group that consisted of high English proficiency students, they get treatment in the form of using the ProWritingAid application. Moreover, the fourth group was a group that consisted of low English proficiency students, they get treatment in the form of using the ProWritingAid application. This study focuses on looking at the effectiveness of Grammarly and ProWritingAid applications in learning writing skills for MAN Batu students.

No.	Name	Treatment
190.	Ivaille	given
1	А	Grammarly
2	ADS	Grammarly
3	ANM	Grammarly
4	ANS	Grammarly
5	ADWP	Grammarly
6	AKM	Grammarly
7	EBH	Grammarly
8	ESA	Grammarly
9	FNA	Grammarly
10	HMA	Grammarly
11	MPC	Grammarly
12	MRR	Grammarly
13	NA	Grammarly
14	NANO	ProWritingAid
15	RAM	ProWritingAid
16	RAR	ProWritingAid
17	SBK	ProWritingAid
18	SMY	ProWritingAid
19	AYV	ProWritingAid
20	ARA	ProWritingAid

Table 3.2 Students with high writing level

21	DM	ProWritingAid
22	FNA	ProWritingAid
23	JNH	ProWritingAid
24	LOFS	ProWritingAid
25	SAM	ProWritingAid

Table 3.3 Students with low writing level

No.	Name	Treatment
		given
1	AYF	Grammarly
2	AIQA	Grammarly
3	AHU	Grammarly
4	AAS	Grammarly
5	CBS	Grammarly
6	DA	Grammarly
7	FRPA	Grammarly
8	GRS	Grammarly
9	ITWH	Grammarly
10	KRH	Grammarly
11	MAF	Grammarly
12	MHPA	Grammarly
13	NAA	Grammarly
14	NM	Grammarly
15	NARS	Grammarly
16	NW	Grammarly
17	NM	Grammarly
18	ARP	Grammarly
19	ALA	Grammarly
20	AA	ProWritingAid
21	BSPM	ProWritingAid
22	DRD	ProWritingAid
23	FSP	ProWritingAid
24	Ι	ProWritingAid
25	KAR	ProWritingAid
26	KSR	ProWritingAid
27	MAC	ProWritingAid

28	NBA	ProWritingAid
29	MOR	ProWritingAid
30	NAPA	ProWritingAid
31	NZSR	ProWritingAid
32	NHA	ProWritingAid
33	NPAH	ProWritingAid
34	NMS	ProWritingAid
35	NH	ProWritingAid
36	PTRA	ProWritingAid
37	RP	ProWritingAid
38	RMH	ProWritingAid

## 3.2 Subject of the Study

The subject of this study contains the population, sampling technique, and also the sample used by the researcher in this study.

## **3.2.1 Population**

According to Dörnyei (2007), the population is the group of people whom the study is about. Based on this information, the researcher choose students at MAN Batu as the population in this study.

## 3.2.2 Sample

According to Dörnyei (2007), the sample is the group of participants whom the researcher actually examines in an empirical investigation, and the population is the group of people whom the study is about. One of the requirements of the sample selection is to be able to represent the entire population. The method for selecting the sample is called sampling. In this study, the researcher uses stratified random sampling. Gay, Mills, & Airasian (2012) explained that Stratified sampling is a way to guarantee the desired representation of relevant subgroups within the sample. Stratified random sampling is divided into two types, namely proportional stratified sampling and non-proportional stratified sampling. Proportional stratified sampling is the process of selecting a sample in such a way that identified subgroups in the population are represented in the sample in the same proportion in which they exist in the population (Gay et al., 2012). Meanwhile, non-proportional stratified sampling is used when the research requires samples from specific subgroups based on a characteristic or trait. In this study, researcher used nonproportional stratified sampling as a sampling technique. The researcher divided the eleventh-grade students of MAN Batu into subgroups based on students writing achievement, where later students were divided into two groups of high writing level and low writing level. Then from the subgroup, the researcher randomized the students to be further divided into two treatment groups. They were given treatment in the form of using the Grammarly application and the ProWritingAid application.

## 3.3 Research Instrument

Instruments can be regarded as tools used to collect, measure, and analyze data. In this study, the researcher used a writing test as a research instrument. The writing test is given to students when they have received the material in each meeting. The writing test given to students relates to the explanation text material received by eleventh class students in the second semester. To assess the results of the students' writing test, the researcher adapt Brown's writing scoring rubric. The following is the writing scoring rubric used by the researcher.

Aspect	Score	Performance Description	Weighting
		The topic is complete and	
	4	clear and the details are	
		relating to the topic.	
		The topic is complete and	
Content (C)	3	clear but the details are almost	
30%		relating to the topic.	3x
- Topic		The topic is complete and	JA
- Details	2	clear but the details are not	
		relating to the topic.	
		The topic is not clear and the	
	1	details are not relating to the	
		topic.	
		The text is complete and	
	4	arranged with proper	
	connectives.		
Organization		The text is almost complete	
(o) 20%	3	The text is almost complete and arranged with almost	
- Opening	5	-	_
statement		proper connectives.	2x
- explanation		The text is not complete and	
- conclusion	2	arranged with few misuse of	
		connectives.	
		The text is not complete and	
	1	arranged with misuse of	
		connectives.	
	4	Very few grammatical error.	
	2	Few grammatical error but not	
Grammar (G) 20%	3	affect on meaning.	
- use present tense	2	Numerous grammatical error.	2x
	1	Frequent grammatical error.	

Tabel 3.4 Writing Scoring Rubric

	4	Effective choice of words and		
	-	word forms.		
		Few misuse of vocabularies,		
	3	word forms, but not change		
Vocabulary (V)		the meaning.	1 5	
15%	2	Limited range confusing	1.5x	
	2	words and word form.		
-		Very poor knowledge of		
	1	words, word forms, and not		
		understandable.		
		It uses correct spelling,		
	4	punctuation, and		
		capitalization.		
Machanica (M)		It has occasional errors of		
Mechanics (M)	3	spelling, punctuation, and		
	15% cap	capitalization.	1.5	
- Spelling —	pellingcupitalization1.5xactuationIt has frequent errors of spelling, punctuation, and capitalization.1.5x	It has frequent errors of	1.5X	
- Capitalization				
-		It is dominated by errors of		
	1	1 spelling, punctuation, and		
		capitalization.		

Score = 
$$\frac{3C + 2O + 2G + 1.5V + 1.5M}{40}$$
 x 100

# 3.4 Data Collection

In this study, researcher conducted test to the students in each group after they received the material in each meeting. According to Gay, Mills, & Airasian (2012) test is a formal, systematic, usually paper-and-pencil procedure for gathering information about people's cognitive and affective characteristics.

Treatment is one of the main characteristics of experimental research, where treatment is intended as a way to manipulate independent variables. In this study, the researcher gave treatment to the four experimental groups. Treatment was given once times in this study because the time to conduct this study was only two meetings. In the first group, which consists of students with the high writing skill level, the researcher gave treatment in the form of using the Grammarly application. In contrast, in the second group, which consists of students with the low writing skill level, the researcher gave treatment in the form of using the Grammarly application. Both groups receive the same treatment with Grammarly application to find out the result in high writing level group and low writing level group. Treatment was also conducted in the third group and the fourth group. The third group consisted of students with high writing level, and the fourth group consisted of students with low writing level. Both groups used the ProWritingAid application as their treatment. The purpose is similar with the first and second groups, to find out the result of ProWritingAid application in high and low writing level groups.

Treatment is given to students on explanation text material. At the time of giving treatment, students received learning materials as usual. When the teacher gives writing assignments to students, students asked to use the Grammarly application for group one and two and ProWritingAid for group three and four to check their text before being collected by the teacher. The use of these applications is intended to be an evaluator for students. When students use these applications to check their text, they will get feedback based on errors or suggestions for the text they have made. The automatic feedback provided by these applications can be used as material for independent learning for students.

## 3.5 Validity and Reliability Testing

Testing is one of the essential stages in collecting data. A good test instrument will affect the truth and accuracy of the data obtained. So that, in the end, it will affect the research results whether they can be generalized or not. Researcher conducted validity and reliability tests to ensure that the test instruments used in this study were valid and reliable.

#### 3.5.1 Validity

Validity refers to the degree to which a test measures what it is supposed to measure and, accordingly, permits appropriate interpretation of scores (Gay et al., 2012). Based on the definition of validity, it can be concluded that a validity test is needed to determine or ensure that the test instrument that applied to research is appropriate to be used as a measuring tool. Therefore, the results of the validity test determine whether an instrument test is highly valid, moderately valid, and generally valid (Gay et al., 2012). In this study, researcher use some types of validity testing, namely content validity, construct validity, and item validity.

a) Content Validity

According to Gay, Mills, & Airasian (2012), Content validity is the degree to which a test measures an intended content area. One way that can be used to carry out content validity is to see whether the content contained in the test is in accordance with the learning materials in the applicable curriculum. In this study, the content test used by the researcher was on the explanation text learning material. Explanation text is taught in the eleventh grade of high school in semesters one and two. The test instrument used in this study was compiled based on the 2013 English curriculum for high school students so that the test instrument used has passed the content validity test. The following are the core competencies and basic competencies of students regarding explanation text material in semesters one and two:

Table 3.5 Core competence and basic competence in 2013 curriculum of English for Senior High School in first semester at eleventh grade

elevenin gruue			
Core competence	<b>Basic competence</b>		
2. Understand, apply, and analyze	3.5 Applying social functions, text		
factual, conceptual,	structure, and linguistic		
procedural, and metacognitive	elements of spoken and written		
knowledge based on their	transactional interaction texts		
curiosity about science,	that involve the act of giving		
technology, art, culture, and	and asking for information		
humanities with insight into	related to circumstances /		
humanity, nationality,	actions / activities / events		
statehood, and civilization	without the need to mention the		
related to the causes of	perpetrators in scientific texts,		
phenomena and events, and	according to the context of		
apply knowledge procedural in	their use. (Pay attention to the		
a specific field of study	linguistic element of the		
according to their talents and	passive voice).		
interests to solve problems.			
3. Processing, reasoning, and	4.5 Compose spoken and written		
presenting in the concrete and	transactional interaction texts		
abstract realms related to the	that involve the act of giving		
development of what they	and asking for information		
learn in school independently,	related to		
acting effectively and	circumstances/actions/activitie		
creatively, and being able to	s/events without the need to		
use methods according to	mention the perpetrators in		
scientific rules.	scientific texts, taking into		

 	int from	tions tout
account soc	tai tuno	cuons, text
structure,	and	linguistic
elements that	at are co	rrect and in
context.		

Table 3.6 Core competence and basic competence in 2013curriculum of English for Senior High School in second semesterat eleventh grade

Core competence	Basic competence
3. Understand, apply, and analyze factual, conceptual, procedural, and metacognitive knowledge based on their curiosity about science, technology, art, culture, and humanities with insight into humanity, nationality, statehood, and civilization related to the causes of phenomena and events, and apply knowledge procedural in a specific field of study according to their talents	3.8Distinguishing social functions, text structures, and linguistic elements of several oral and written explanation texts by giving and asking for information related to natural or social phenomena covered in other subjects in class XI, according to the context in which they are used.
<ul> <li>and interests to solve problems.</li> <li>4 Processing, reasoning, and presenting in the concrete and abstract realms related to the development of what they learn in school independently, acting effectively and creatively, and being able to use methods according to scientific rules.</li> </ul>	4.8 Capturing contextual meaning related to social function, text structure, and linguistic elements of spoken and written explanation texts, related to natural or social phenomena covered in other subjects in class XI.

# b) Construct Validity

Gay, Mills, & Airasian (2012) stated that construct validity is the most important validity test because construct validity asks the fundamental validity question: what is actually measured from this test. So, in other words, construct validity reflects the degree to which a test measures an intended hypothetical construct. From this explanation, it can be concluded that construct validity is related to the basic theory used in an instrument test.

In the test instrument of this research, the researcher conducted research on the use of Grammarly and ProWritingAid on teaching writing skills in the explanation text material. Several aspects contained in the explanation text become the basis for researcher in designing test instruments. Some of these aspects are social function, general structure, and also linguistic features. After the instrument test is prepared based on the aspects of the explanation text, then the instrument test is consulted with experts (judgment experts) (Sugiyono, 2007).

The construct validity test in this study was carried out by validators who came from English Education Department UIN Malang lecture who had a scientific focus on the field of writing. There are 11 questions that are consulted on the validator. There are four suggestions given by the validator to the researcher regarding the test instrument to be used. On April 12, 2022, the validator stated that the test instrument had passed for use in research with minor revisions.

c) Item Validity

According to Yusuf (2014), the validity of the instrument as a whole is closely related to the quality of the validity of each item. So it can be said that if the item has a high level of validity to the total score, then the instrument test used also has high validity. In this study, the researcher used the Pearson Product moment correlation formula to calculate the correlation score for each item on each respondent with the total score for each respondent concerned. Each item of the question is said to be valid if the significance is > 0.05, and if the significance is < 0.05, the item is said to be invalid. Researcher used SPSS 25 for windows to analyze the data. The following is the formula for the Pearson Product moment correlation.

Equation 3.1 Pearson Product Moment Correlation Formula

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

Note:

- r = Pearson r correlation coefficient
- n = Number of sample
- x = Independent variable
- y = Dependent variable

Correlation Interval	Correlation Level
0,80 - 1,000	Very strong
0,60 - 0,799	Strong
0,40 - 0,599	Middle
0,20 - 0,399	Low
0,00 - 0,199	Very low

In this study, all question items showed a significance > 0.05, so it can be said that all items about the instrument in this study were valid to be used. The following is a table containing the validity test results using the SPSS 25 application.

	Correlations												
		Item	Item	Item	Item	Item	Item	Item	Item	Item	Item	Item	Skor_
		1	2	3	4	5	6	7	8	9	10	11	Total
ltem1	Pearson Correlation	1	083	.065	.070	.106	.037	013	.247	.007	027	.193	.343**
	Sig. (2-tailed)		.520	.612	.588	.408	.773	.920	.051	.957	.836	.130	.006
	N	63	63	63	63	63	63	63	63	63	63	63	63
ltem2	Pearson Correlation	- .083	1	.193	.189	.360 <sup>*</sup> *	.008	.147	091	.188	.096	001	.396**
	Sig. (2-tailed)	.520		.130	.138	.004	.952	.249	.477	.141	.454	.993	.001
	Ν	63	63	63	63	63	63	63	63	63	63	63	63
ltem3	Pearson Correlation	.065	.193	1	.150	.226	.317*	.240	.161	.132	.144	.282*	.600**
	Sig. (2-tailed)	.612	.130		.242	.075	.011	.059	.208	.301	.259	.025	.000
	N	63	63	63	63	63	63	63	63	63	63	63	63
ltem4	Pearson Correlation	.070	.189	.150	1	.060	.203	.319*	.172	.199	.074	009	.473**
	Sig. (2-tailed)	.588	.138	.242		.640	.111	.011	.178	.118	.563	.947	.000
	N	63	63	63	63	63	63	63	63	63	63	63	63
ltem5	Pearson Correlation	.106	.360 <sup>*</sup> *	.226	.060	1	.119	.116	.149	.178	.201	.078	.517**
	Sig. (2-tailed)	.408	.004	.075	.640		.352	.366	.245	.162	.114	.545	.000
	N	63	63	63	63	63	63	63	63	63	63	63	63
ltem6	Pearson Correlation	.037	.008	.317*	.203	.119	1	.216	.233	.347 <sup>*</sup>	111	.246	.526**
	Sig. (2-tailed)	.773	.952	.011	.111	.352		.090	.066	.005	.386	.052	.000
	N	63	63	63	63	63	63	63	63	63	63	63	63

Table 3.8 Item validity test result

ltem7	Pearson	-	.147	.240	.319*	.116	.216	1	.084	.130	.088	.093	.452**
nonn	Correlation	.013	.147	.240	.010	.110	.210	•	.004	.100	.000	.000	102
	Sig. (2-tailed)	.920	.249	.059	.011	.366	.090		.511	.309	.490	.469	.000
	N	63	63	63	63	63	63	63	63	63	63	63	63
Item8	Pearson	.247	091	.161	.172	.149	.233	.084	1	.193	134	.118	.434**
	Correlation												
	Sig. (2-tailed)	.051	.477	.208	.178	.245	.066	.511		.130	.293	.356	.000
	Ν	63	63	63	63	63	63	63	63	63	63	63	63
Item9	Pearson	.007	.188	.132	.199	.178	.347*	.130	.193	1	.177	.019	.519**
	Correlation						*						
	Sig. (2-tailed)	.957	.141	.301	.118	.162	.005	.309	.130		.165	.881	.000
	Ν	63	63	63	63	63	63	63	63	63	63	63	63
ltem10	Pearson	-	.096	.144	.074	.201	111	.088	134	.177	1	.069	.309*
	Correlation	.027											
	Sig. (2-tailed)	.836	.454	.259	.563	.114	.386	.490	.293	.165		.589	.014
	Ν	63	63	63	63	63	63	63	63	63	63	63	63
ltem11	Pearson	.193	001	.282*	009	.078	.246	.093	.118	.019	.069	1	.419**
	Correlation												
	Sig. (2-tailed)	.130	.993	.025	.947	.545	.052	.469	.356	.881	.589		.001
	Ν	63	63	63	63	63	63	63	63	63	63	63	63
Skor_	Pearson	.343*	.396*	.600*	.473 <sup>*</sup>	.517*	.526*	.452 <sup>*</sup>	.434*	.519 <sup>*</sup>	.309*	.419*	1
Total	Correlation	*	*	*	*	*	*	*	*	*		*	
	Sig. (2-tailed)	.006	.001	.000	.000	.000	.000	.000	.000	.000	.014	.001	
	Ν	63	63	63	63	63	63	63	63	63	63	63	63
**. Corre	**. Correlation is significant at the 0.01 level (2-tailed).												
*. Correlation is significant at the 0.05 level (2-tailed).													

# 3.5.2 Reliability

Ary, Jacobs, Razavieh, & Ary (2010) explained that the reliability of a measuring instrument is the degree of consistency with which it measures whatever it is measuring. The essence of testing the reliability of the instrument test is to measure the consistency of a test instrument (Huck, 2012). Taherdoost (2016) also said that reliability is also concerned with repeatability. From some of the explanations above, it can be concluded that the core of measuring reliability is to find out the consistency and how stable an instrument test is. The test instrument is said to be reliable if the test instrument can be used many times in various situations by producing the same score.

There are various types of reliability tests that can be implemented to test the reliability of the instrument test. In this study, researcher used the type of internal consistency. According to Gay, Mills, & Airasian (2012), Internal consistency reliability is the extent to which items in a single test are consistent among themselves and with the test as a whole. Internal consistency approaches need only one test. So, the researcher conducted a test into a group, and then the result from the test analyzed using Cronbach's Alpha. Cronbach's Alpha estimate internal consistency reliability by determining how all items on a test relate to all other test items and to the total test (Gay et al., 2012). Cronbach's Alpha is used when the instrument test use polytomous model, it means that the item test have more than two possible scores, for example Likert-type items which has 1 to 5 measure scale and partial credit items. Here is the formula for Cronbach's Alpha

Equation 3.2 Cronbach's Alpha formula

$$C\alpha = \frac{k}{(k-1)} \left\{ 1 - \frac{\sum \sigma b^2}{\sigma t^2} \right\}$$

Note:

- $C\alpha = Instrument reliability$
- K = Number of instrument items
- $\sum \sigma^2$  = Number of items variance
- $\sigma^2$  = Total of variance

Equation 3.3 Formula of Variance

$$\sigma^2 = \frac{\sum x^2 \frac{(\sum X)^2}{N}}{N}$$

Note:

- $\sigma^2 = \text{Varians}$
- $\sum x^2 =$ Sum square of total score
- $(\sum X)^2$  = Sum square from sum of total score
- N = Number of respondent

After the data was calculated using the Cronbach's Alpha formula, in this study, the researcher used the SPSS 25 for windows application to conduct data analysis. Furthermore, the results of the data analysis are compared with the Cronbach's Alpha table to find out how reliable each item is. The following is a table of Cronbach's Alpha Interpretation established by Ruiz (2004).

Internal Consistency
Very high
High
Moderate
Low
Very low

Table 3.9 Cronbach's Alpha Interpretation

A reliability test can be done if all items have been declared valid. In this study, all items have been tested for validity and declared valid (Table 3.6) so that the reliability test can be carried out. The following are the reliability test results using the SPSS 25 application.

Table 3.10 Reliability test result

Reliability Statistics					
Cronbach's					
Alpha	N of Items				
.614	11				

In the table above, the value shown is 0.614. In table 3.7, the interpretation of Cronbach's Alpha value has been shown the value 0.61-0.80 indicates high reliability, so it can be said that the test instrument in this study has passed the reliability test.

## 3.6 Data Analysis

Data analysis is the next step taken after collecting data from the field. Data analysis uses a set of mathematical procedures called statistics (Dörnyei, 2007). The definition of statistics is a set of procedures for describing, synthesizing, analyzing, and interpreting quantitative data (Gay et al., 2012). In this study, the researcher collected data from each test conducted on the four experimental groups, after which the researcher analyzed the data statistically using the SPSS (Statistical Product and Service Solutions) 25 software. The purpose of data analysis in this study is to determine the significant difference between the group using the Grammarly application and the group using the ProWritingAid application across students writing level so that in the end, it can be conclude which of the two applications is the most effective to use in writing skills for MAN Batu students.

### **3.6.1** The Normality Test

A normality test is a test carried out to see the normality of the distribution of the data that has been obtained. Dörnyei (2007) explains that what is meant by normal distribution is that some of the values are low, some high, and the bulk of the values are centered around the middle, that is, around the mean. In this study, the researcher applied the Kolmogorov-Smirnov test using the IBM SPSS 25 software to achieve the normality test. The result of the Kolmogorov-Smirnov test is that if the significance is below 0.05, then there is a significant difference, or in other words, the data is not normally distributed. However, if the results show a significance above 0.05, then there is no significant difference, or in other words, the data is normally distributed.

Equation 3.2 Kolmogorov Smirnov Test Formula

 $D = Maximum [F_o(X) - F_r(X)]$ 

Note:

- D = Value of test statistic
- F<sub>o</sub>(X) = Observed cumulative frequency distribution of a random sample of n observations.
- $F_r(X)$  = The theoretical frequency distribution.

## 3.6.2 The Homogeneity Test

According to Nuryadi, Astuti, Sri Utami, & Budiantara (2017), the homogeneity test is a statistical test intended to show that two or more groups of sample data come from populations with the same variance. The homogeneity test is one of the requirements to do the ANOVA test. Various methods can be used to perform the homogeneity test, including the Harley test, Cochran test, Levene test, and Bartlett test. In this study, researcher used the Bartlett test as a tool to test the homogeneity. The Bartlett test was chosen because, in this study, the variance tested was more than two groups of data. The procedure carried out to carry out the Bartlett test, according to Nuryadi, Astuti, Sri Utami, & Budiantara (2017), is as follows:

- 1. Calculating the degrees of freedom (dk) for each group
- 2. Calculating the variance (s) of each group
- 3. Calculating the magnitude of the log S2 for each group

- 4. Calculate the amount of dk. Log S2 for each group
- 5. Calculate the pooled variance value of all groups with the following formula:

Equation 3.3 Pooled Variance Formula

$$S_{gab}^2 = \frac{(\sum dk S_i^2)}{\sum dk}$$

6. Calculate the value of B (Barlett value) with the following formula:

Equation 3.4 Bartlett Formula

$$B = \Sigma \, dk \, (log S_{gab}^2)$$

7. Calculate the value of  $x^2$  with the following formula:

Equation 3.4  $x^2$  Value Formula

$$x^{2} = (In10) \left[ B - (\Sigma \, dk \, logS_{i}^{2}) \right]$$

Note:

- $S_i^2$  = Variance each data group
- $dk_1 = n-1 = Degree of freedom (df) each group$
- B = Bartlett value (see equation 3.4)
- 8. After the calculated Chi-Square value is obtained, then the Chi-

Square value is compared with the Chi-Square table.

Homogeneous criteria are determined if the Chi-Square count < Chi-Square table.

## 3.6.3 Hypothesis Test

Gay, Mills, & Airasian (2012) explained that hypothesis testing is a process of decision making in which researcher evaluate the results of a study against their original expectations. Sugiyono (2007) also explained that in research, the hypothesis is defined as a temporary answer to the formulation of the research problem. In this study, a hypothesis was put forward regarding the effectiveness of the use of the Grammarly application and the ProWritingAid application on writing skills across students writing level of MAN Batu students. The hypothesis test is carried out to determine whether the hypothesis is rejected or not. Researcher used the analysis of variants (ANOVA) on the IBM SPSS software as a formula for conducting a hypothesis test. The hypothesis in this study is as follows:

1. The testing of the first hypothesis

The statistical hypothesis can be described as follow:

 $H_0=\mu A_1=\mu A_2$ 

 $H_a = \mu A_1 \neq \mu A_2$ 

a) Null Hypothesis (H<sub>0</sub>)

"There is no differences on the students writing skills who were taught by using Grammarly application and by ProWritingAid application across students writing level" b) Alternative Hypothesis (H<sub>a</sub>)

"There are differences on the students writing skills who were taught by using Grammarly application and by ProWritingAid application across students writing level"

2. The testing of the second hypothesis

The second hypothesis test whether there is an interaction between the use of Grammarly and ProWritingAid application with students writing level in writing skills. The statistical hypothesis described as follow:

 $H_0 = Interaction A * B = 0$ 

 $H_a = Interaction A * B \neq 0$ 

a) Null Hypothesis (H<sub>0</sub>)

"There is no interaction between the use of Grammarly and ProWritingAid application with students writing level in writing skills"

b) Alternative Hypothesis (H<sub>a</sub>)

"There is an interaction between the use of Grammarly and ProWritingAid application with students writing level in writing skills"

3. The testing of the third hypothesis

The researcher used the t test as the formula in the third hypothesis testing. This hypothesis tested the higher effect between the use of Grammarly application and ProWritingAid application implemented in the group with high writing level students. The statistical hypothesis described as follow:

 $H_0 = \mu A_1 B_1 \ge \mu A_2 B_1$ 

 $H_a=\mu A_1B_1<\mu A_2B_1$ 

a) Null Hypothesis (H<sub>0</sub>)

"The students with high writing level who were taught by using Grammarly application is greater than or equal to the students with high writing level who were taught by using ProWritingAid application"

b) Alternative Hypothesis (H<sub>a</sub>)

"The students with high writing level who were taught by using Grammarly application is lower than the students with high writing level who were taught by using ProWritingAid application"

4. The testing of the fourth hypothesis

The researcher used the t test as the formula in the fourth hypothesis testing. This hypothesis tested the higher effect between the use of Grammarly application and ProWritingAid application implemented in the group with low writing level students. The statistical hypothesis described as follow:

 $H_0\!=\mu A_1B_2\!\leq\,\mu A_2B_2$ 

 $H_a = \mu A_1 B_2 > \mu A_2 B_2$ 

a) Null Hypothesis (H<sub>0</sub>)

"The students with low writing level who were taught by using Grammarly application is lower than or equal to the students with low writing level who were taught by using ProWritingAid application"

b) Alternative Hypothesis (H<sub>a</sub>)

"The students with low writing level who were taught by using Grammarly application is greater than the students with low writing level who were taught by using ProWritingAid application."

## **CHAPTER IV**

## **RESEARCH FINDINGS**

This section contains research findings and discussion. This chapter describe the data that has been obtained from the research process, the results of normality and homogeneity tests, data analysis, and the results of hypothesis testing.

## 4.1 Research Findings

In this first subchapter, the researcher describe the data found from the research process in the form of numerical data. The data was obtained from students' assignments score on the explanation text material in eleventh Religion class and eleventh Language class. Eleventh Religion class consists of 35 students, while eleventh Language class consists of 28 students. The researcher divided the students from the two classes into four groups based on their writing achievement and the applications they would use. The grouping of students based on writing achievement is based on the students' writing scores before this research took place. The following is the division of levels based on students' writing achievement.

Students' Level	Students' Scores
High Writing Level	100-75
Low Writing Level	74-0

Table 4.1 Division of groups based on students'writing achievement

In this study, the research subjects were divided into four groups. The first is a group with high writing skills, this first group use the Grammarly application as a tool to check writing. Then the second group is a group with low writing skills, this second group use the Grammarly application as a tool to check writing. The third and fourth groups are groups that use the ProWritingAid application as a tool to check writing skills, while group three is a group consisting of students with high writing skills, while group four consists of students with low writing skills.

The results of the assignments from the four groups analyzed and compared to know whether the use of the AWE application is effective in helping students in writing skills across students' writing level and knowing the most effective application to use in writing English. The table below shows the students' writing scores on the explanation text material using the Grammarly and ProWritingAid applications.

### **4.1.1 Grammarly Application Data**

No.	Name	Score
1	А	95
2	ADS	88
3	ANM	95
4	ANS	78
5	ADWP	83
6	AKM	78
7	EBH	83
8	ESA	75
9	FNA	88
10	HMA	78
11	MPC	78

Table 4.2 Students' score using Grammarly in high writing level group

12	MRR	88
13	NA	88

The data above shows the scores of students in group one, namely students with high writing skills, they were given treatment in the form of using the Grammarly application. The number of students in group one is 13 people. From these data, it can be seen that students get scores between 75-95. A detailed analysis of student scores is described in the following table.

Column1					
Mean	83,8				
Standard Error	1,869444432				
Median	82,5				
Mode	87,5				
Standard Deviation	6,740377757				
Sample Variance	45,43269231				
Kurtosis	-0,969077014				
Skewness	0,402297959				
Range	20				
Minimum	75				
Maximum	95				
Sum	1090				
Count	13				

Table 4.3 Descriptive analysis of students' score in first group

The table above shows that the lowest score of students is 75, and the highest score of students is 95. The average value of students is also

quite high, namely 83.8.

No.	Name	Score
1	AYF	88
2	AIQA	83
3	AHU	95
4	AAS	75
5	CBS	88
6	DA	78
7	FRPA	88
8	GRS	88
9	ITWH	83
10	KRH	88
11	MAF	95
12	MHPA	78
13	NAA	88
14	NM	88
15	NARS	78
16	NW	95
17	NM	83
18	ARP	91
19	ALA	81

Table 4.4 Students' score using Grammarly in low writing level group

The data above shows the scores of students in group two, namely the group that contains students with low English writing skills. Like the treatment used in group one, students used the Grammarly application to check their English writing assignments. The number of students in group two is 19 people. Detailed descriptions of student scores in group two are presented in the following table.

Column1					
Mean	85 <i>,</i> 5				
Standard Error	1,409151213				
Median	87,5				
Mode	87,5				
Standard Deviation	6,142347733				
Sample Variance	37,72843567				
Kurtosis	-0,811293739				
Skewness	-0,023248879				
Range	20				
Minimum	75				
Maximum	95				
Sum	1625				
Count	19				

Table 4.5 Descriptive analysis of students' score in second group

In the table above, it is known that the average student score is 85.5. The highest score of students in group two was 95, while the lowest score was 75. If the scores from groups one and two were compared, there was a difference average score in both groups. It concludes that students' abilities also influence student work even though both groups use the same application.

# 4.1.2 ProWritingAid Application Data

	group					
No.	Name	Score				
1	NANO	81				
2	RAM	95				
3	RAR	95				
4	SBK	88				
5	SMY	91				

Table 4.6 Students' score using ProWritingAid in high writing level
6	AYV	81
7	ARA	91
8	DM	91
9	FNA	95
10	JNH	91
11	LOFS	91
12	SAM	88

The data in the table above is the student scores in groups of three. The third group consisted of students with high writing skills. The third group received treatment in the form of using the ProWritingAid application as a tool for doing writing assignments. The number of students in group three is 12 people. Detailed descriptions of student scores in group three are presented in the following table.

Table 4.7 Descriptive analysis of students' score in third group

Column1	Column1						
Mean	89,9						
Standard Error	1,368383991						
Median	91,125						
Mode	95						
Standard Deviation	4,740221194						
Sample Variance	22,46969697						
Kurtosis	0,337770411						
Skewness	-0,993762503						
Range	14						
Minimum	81						
Maximum	95						
Sum	1079						
Count	12						

From the description of the table above, it can be seen that the average score of students in group three is 89.9. The highest score of students is 95, and the lowest score of students is 81. When compared with students in group one, they both have high writing skills, but they using the Grammarly application, there is a significant difference in the average scores. In group one, the average score of students was 83.8, whereas the average score was 6.1 lower than the average score of group three. From this explanation, it can be concluded that using the ProWritingAid application for students with high writing skills is more effective than students using the Grammarly application.

No.	Name	Score
1	AA	75
2	BSPM	74
3	DRD	81
4	FSP	75
5	Ι	75
6	KAR	70
7	KSR	81
8	MAC	70
9	NBA	74
10	MOR	74
11	NAPA	78
12	NZSR	75
13	NHA	81
14	NPAH	81
15	NMS	81
16	NH	79
17	PTRA	78

Table 4.8 Students' score using ProWritingAid in low writing level group

18	RP	75
19	RMH	81

The table above shows the students' scores in groups of four. Group four is a group that contains students with low writing skills. The fourth group received treatment in the form of using the ProWritingAid application. The number of students in group four is 19 people. The table below contains a descriptive analysis of the scores of students in group four.

Column1	
Mean	76,7
Standard Error	0,871969094
Median	75
Mode	81,25
Standard Deviation	3,800825164
Sample Variance	14,44627193
Kurtosis	-1,009326697
Skewness	-0,154361356
Range	11,25
Minimum	70
Maximum	81
Sum	1458
Count	19

Table 4.9 Descriptive analysis of students' score in fourth group

Based on the results of the descriptive analysis in the table above, it is known that the average score of students in group four is 76.7. The highest score of students is 81, while the lowest score of students is 70. Compared with the average score of students in group two, where both groups have low writing skills, the average score of group two is 8.8 higher than the average score of students in group four. The difference in the average score is significant. From this explanation, it can be concluded that the use of the Grammarly application is more effective for groups of students with low writing skills.

### 4.2 Analysis of the data

### 4.2.1 Normality Test

In this study, the researcher used the Kolmogorov-Smirnov as a formula to calculate the normality of the data. The use of the Kolmogorov-Smirnov was based on a sample size of more than 50. The interpretation of Kolmogorov-Smirnov is as follows:

- a) p > 0.05 = Data is normally distributed
- b) p < 0.05 = Data is not normally distributed

Data is normally distributed if the Kolmogorov-Smirnov significance value is greater than 0.05 (p > 0.05), and data is not normally distributed if the Kolmogorov-Smirnov significance value is lower than 0.05 (p < 0.05).

One-Sample Ko	olmogorov-S	mirnov Test
		Unstandardized
		Residual
N		63
Normal Parameters <sup>a,b</sup>	Mean	.000000

Table 4.10 Normality test result

	Std. Deviation	6.58402734
Most Extreme Differences	Absolute	.084
	Positive	.083
	Negative	084
Test Statistic		.084
Asymp. Sig. (2-tailed)		.200 <sup>c,d</sup>
a. Test distribution is Norma	l.	
b. Calculated from data.		
c. Lilliefors Significance Corr		
d. This is a lower bound of the	ne true significance	

Based on the results of the normality test using the SPSS 25 application above, it is known that the Kolmogorov-Smirnov significance value is 0.200, the value is greater than 0.05 (0.200 > 0.05), so it can be said that the research data is normally distributed.

### **4.2.2 Homogeneity test**

The next test that must be carried out is the homogeneity test to show that two or more groups of sample data come from populations with the same variance. The researcher used the Bartlett test as a formula to perform the homogeneity test in this study. The use of the Bartlett-test as a test tool is based on the existence of four sample groups in this study. The interpretation of the Bartlett test value is as follows:

- a) p > 0.05 = Samples are homogeneous
- b) p < 0.05 = Samples are not homogeneous

Samples are homogeneous if the significance value of the Bartlett test is greater than 0.05 (p > 0.05), but if the significance value of the Bartlett test is less than 0.05 (p < 0.05), then samples are not

homogeneous. Another way to determine is by looking at the Chisquare count, where if the Chi-square count is smaller than the Chisquare table, then samples are homogeneous. On the other hand, if the Chi-Square count is greater than the Chi-square table, samples are not homogeneous. The following are the results of the homogeneity test using the SPSS 25 application.

Test Results							
Box's N	/	6.132					
F	Approx.	1.986					
	df1	3					
	df2	5621.806					
	Sig.	.114					
Tests null hypothesis of equal							
population covariance matrices.							

Table 4.11 Homogeneity test result

Based on the table of Bartlett test results above, it is known that the significance value is 0.114 (0.114 > 0.05), meaning that the samples in this study are homogeneous. Another way is to compare the Chisquare, it is known that the Chi-square table from the number of samples 62 (v = n-1) is 81.3810, the calculated Chi-square value is known to be 6.132, then the Chi-square count is smaller than the Chisquare table (6.132 < 81.3810), the meaning that the samples in this study are homogeneous.

### 4.2.3 Hypothesis Test

There are four hypotheses to be tested in this study, here are the four hypothesis tests:

### a. First Hypothesis

The first hypothesis was tested using the one way ANOVA formula, the statistical hypothesis can be described as follow:

 $H_0=\mu A_1=\mu A_2$ 

 $H_a=\mu A_1\neq \mu A_2$ 

a) Null Hypothesis (H<sub>0</sub>)

"There is no differences on the students writing skills who were taught by using Grammarly application and by ProWritingAid application across students writing level"

b) Alternative Hypothesis (H<sub>a</sub>)

"There are differences on the students writing skills who were taught by using Grammarly application and by ProWritingAid application across students writing level"

H<sub>0</sub> is accepted and H<sub>a</sub> is rejected if the significance value is greater than 0.05 ( $\alpha = 5\%$ ). While H<sub>0</sub> is rejected and H<sub>a</sub> is accepted if the significance value is less than or equal to 0.05 ( $\alpha = 5\%$ ). The following are the results of the first hypothesis test using the SPSS 25 application.

ANOVA										
Nilai siswa										
Sum of Mean F										
Squares df Square Sig										
Between	1461.529	3	487.176	17.026	.000					
Groups										
Within	1688.185	59	28.613							
Groups										
Total	3149.714	62								

Table 4.12 One-way ANOVA test result

From the table above, it is known that the significance value is 0.000, then the significance value is less than 0.05 (0.000 < 0.05). With a significance result less than 0.05, H<sub>0</sub> is rejected, and H<sub>a</sub> is accepted, meaning there are differences on the students writing skills who were taught by using the Grammarly application and by ProWritingAid application across students writing level.

### b. Second Hypothesis

In testing the second hypothesis, the researcher used a twoway ANOVA to determine whether there was an interaction between the two factors, namely the application and the level of students' writing ability on students' writing scores. The statistical hypothesis is described as follows:

 $H_0 = Interaction A * B = 0$ 

 $H_a$  = Interaction A \* B  $\neq 0$ 

a) Null Hypothesis (H<sub>0</sub>)

"There is no interaction between the use of Grammarly and ProWritingAid application with students writing level in writing skills"

b) Alternative Hypothesis (H<sub>a</sub>)

"There is an interaction between the use of Grammarly and ProWritingAid application with students writing level in writing skills"

 $H_0$  is accepted and  $H_a$  is rejected if the significance value is greater than 0.05 ( $\alpha = 5\%$ ). While  $H_0$  is rejected and  $H_a$  is accepted if the significance value is less than or equal to 0.05 ( $\alpha = 5\%$ ). The following are the results of the first hypothesis test using the SPSS 25 application.

	Tests of Between-Subjects Effects									
Dependent Varial	Dependent Variable: Nilai									
	Type III Sum Mean									
Source	of Squares	df	Square	F	Sig.					
Corrected Model	1461.529 <sup>a</sup>	3	487.176	17.026	.000					
Intercept	426818.045	1	426818.045	14916.769	.000					
Aplikasi	46.207	1	46.207	1.615	.209					
Level	496.795	1	496.795	17.362	.000					
Aplikasi * Level	814.705	1	814.705	28.473	.000					
Error	1688.185	59	28.613							
Total	442652.000	63								
Corrected Total	3149.714	62								
a. R Squared =	464 (Adjusted R	Squared	l = .437)							

Table 4.13 Two-way ANOVA test result

The table above shows that the significance value of the interaction between application\*level is 0.000. This value is smaller than 0.05 ( $\alpha = 5\%$ ). Based on this explanation, H<sub>0</sub> is rejected and H<sub>a</sub> is accepted. The meaning is that there is an interaction between the use of Grammarly and ProWritingAid application with students writing level in writing skills. The following is a graph showing the interaction between the use of Grammarly and ProWritingAid application with students writing level in writing skills.

Chart 4.1 Interaction graph between the use of Grammarly and ProWritingAid application and students writing level in writing skills



The blue line in the graph above shows a group of students with a high level of writing skill, and the red line shows a group of students with a low level of writing skill. In the graph above, it is known that the two lines are not arranged concurrently. The blue line is between 90 and 84, while the red line is between 87 and 75. The two lines represent a significant difference between the two groups of student levels.

Furthermore, in terms of application usage, on the blue line, there is a difference in the average score of students when using the Grammarly and ProWritingAid applications, the difference is significant. Same with the blue line, on the red line, there is a significant difference in the group of students who use the Grammarly and ProWritingAid applications. From the explanation above, it can be seen that there is an influence or interaction between the use of Grammarly and ProWritingAid application with students writing level in writing skills.

## c. Third Hypothesis

The third hypothesis test was conducted to determine which application between Grammarly and ProWritingAid was most effectively used in groups of students with a high level of writing skill. In testing the third hypothesis, the researcher used the t-test formula to compare the scores of students using the Grammarly and ProWritingAid applications in the group with a high level of writing skill. The statistical hypothesis is described as follows:

 $H_0\!=\mu A_1B_1\!\geq \mu A_2B_1$ 

 $H_a = \mu A_1 B_1 < \mu A_2 B_1$ 

a) Null Hypothesis (H<sub>0</sub>)

"The students with high writing level who were taught by using Grammarly application is greater than or equal to the students with high writing level who were taught by using ProWritingAid application"

b) Alternative Hypothesis (H<sub>a</sub>)

"The students with high writing level who were taught by using Grammarly application is lower than the students with high writing level who were taught by using ProWritingAid application"

H<sub>0</sub> is accepted and H<sub>a</sub> is rejected if the significance value is greater than 0.05 ( $\alpha = 5\%$ ). While H<sub>0</sub> is rejected and H<sub>a</sub> is accepted if the significance value is less than or equal to 0.05 ( $\alpha = 5\%$ ). The following are the results of the first hypothesis test using the SPSS 25 application.

			Iı	ndepen	dent S	amples <sup>-</sup>	Test				
		Leve	ne's								
		Test	for								
	Equality of										
		Variar	nces			t-test	for Equality	of Means			
					df				95% Con	fidence	
				Interval				of the			
				Sig. (2- Mean Std. Error Differen			ence				
		F	Sig.	t		tailed)	Difference	Difference	Lower	Upper	
Nilai	Equal	2.845	.105	-2.400	23	.025	-5.603	2.334	-10.431	774	
	variances										
	assumed										
	Equal			-2.433	21.713	.024	-5.603	2.303	-10.382	823	
	variances										
	not										
	assumed										

Table 4.14 t-test for third hypothesis result

In the table above, it is known that the significance value is 0.025, the significance value is lower than 0.05 (0.025 > 0.05), so H<sub>0</sub> is rejected and H<sub>a</sub> is accepted, meaning that the students with high writing level who were taught by using Grammarly application is lower than the students with high writing level who were taught by using ProWritingAid application.

### d. Fourth Hypothesis

The fourth hypothesis test was carried out using a t-test as the test formula. In testing the fourth hypothesis, the researcher wanted to find out the most effective application between Grammarly and ProWritingAid to be applied to students with low writing level. The statistical hypothesis is described as follows:

$$H_0\!=\mu A_1B_2\!\leq\,\mu A_2B_2$$

$$H_a = \mu A_1 B_2 > \mu A_2 B_2$$

a) Null Hypothesis (H<sub>0</sub>)

"The students with low writing level who were taught by using Grammarly application is lower than or equal to the students with low writing level who were taught by using ProWritingAid application"

b) Alternative Hypothesis (H<sub>a</sub>)

"The students with low writing level who were taught by using Grammarly application is greater than the students with low writing level who were taught by using ProWritingAid application."

 $H_0$  is accepted and  $H_a$  is rejected if the significance value is greater than 0.05 ( $\alpha = 5\%$ ). While  $H_0$  is rejected and  $H_a$  is accepted if the significance value is less than or equal to 0.05 ( $\alpha = 5\%$ ). The following are the results of the first hypothesis test using the SPSS 25 application.

			I	ndepei	ndent S	amples	Test			
		Levene	e's Test							
		for Equ	ality of							
Variances						t-tes	st for Equality	y of Means		
									95% Co	onfidence
								Interv	al of the	
						Sig. (2-	Mean	Std. Error	Diffe	erence
		F	Sig.	t	df	tailed)	Difference	Difference	Lower	Upper
Nilai	Equal	4.921	.033	5.594	36	.000	9.105	1.628	5.804	12.407
	variances									
	assumed									
	Equal			5.594	29.763	.000	9.105	1.628	5.780	12.431
	variances									
	not									
	assumed									

Table 4.15 t-test for fourth hypothesis result

Based on the table above, it is known that the significance value is 0.000, where the value is smaller than 0.05 (0.000 < 0.05), resulting in the decision H<sub>0</sub> is rejected and H<sub>a</sub> is accepted, meaning the students with low writing level who were taught by using Grammarly application is greater than the students with low writing level who were taught by using ProWritingAid application.

### 4.3 Discussion

Many researcher have investigated the effectiveness of using automated writing evaluation (AWE) tools on students' writing skills. On average, the researcher found that the use of the AWE tool was more effective than the conventional method of giving feedback from teachers. Apart from several shortcomings found by previous researcher in the field, the use of the AWE tool can be used as a breakthrough and innovation in supporting student learning activities independently. There are many kinds of AWE tools, each with its advantages and disadvantages. In this study, researcher used the Grammarly and ProWritingAid applications as media to help students write English. There are two research objects in this study. The first is to examine the effectiveness of Grammarly and ProWritingAid application toward writing skills across students writing level of MAN Batu students. The second research object is to examine what are from both Grammarly and ProWritingAid that the most effective for teaching writing skills across students writing level of MAN Batu students.



Chart 4.2 The average score of students using Grammarly

The diagram above shows the average scores of students who use the Grammarly application in groups of students with high and low writing skill. From the diagram, it can be seen that both groups got a fairly high average score. In the group with high writing skill level, the average score of students was 83.8, while in the group of students with low writing skill level, the average score was 85.5. The high scores of students using Grammarly in both groups could be due to the effectiveness of the Grammarly application. Like the research conducted by (Fahmi & Cahyono, 2021), which studied 26 law students who were taking the English for Specific Purpose (ESP) writing course. The study wanted to know the effectiveness of using the Grammarly application when compared to the conventional method of giving feedback from teachers. The results of the study revealed that 93% of students agree that Grammarly is an easy application to use, and 78% of them think that the feedback provided by Grammarly is easy to understand. The ease of use of the Grammarly application has an impact on its users. The simple and uncomplicated user interface makes it easy for users to use the Grammarly application effectively. The feedback provided by Grammarly is easy to understand, with a neat arrangement of suggestions and the use of simple language so that it is easy to understand even for users with low English skills.

Another similar study was conducted by (Ghufron, 2019b), where in this study to find out students' perceptions of the use of Grammarly and conventional feedback from teachers. The result is that 97% of 120 students majoring in English education at IKIP PGMI Bojonegoro agree that the application of Grammarly and conventional feedback from teachers can help improve writing skills both directly and indirectly. The study also found that the Grammarly application was more effective in correcting writing in terms of language, such as diction, grammar, spelling, and punctuation. Based on that research, the researcher conducting this study used the Grammarly and ProWritingAid applications as a tool to examine writing in the linguistic aspect. For aspects of sentence composition and writing content, corrections were still made by the teacher. Checking the writing with the Grammarly application before being corrected by the teacher was proven to minimize errors in the linguistic aspect of students' writing.



Chart 4.3 The average score of students using ProWritingAid

The diagram above shows the average score of students who use the ProWritingAid application from groups of students with high and low writing skills. The diagram shows that the average score of students in the high writing skill group is 89.9, while the average score in the low writing skill group is 76.7. The difference in the average score of students is significant. It concludes that students' skill in writing also affects the effectiveness of using the ProWritingAid application on students.

The significant difference in average scores obtained by students between the group with high writing level and the group with low writing level conclude that the use of Grammarly is most effectively used to assist students in writing English in the group with low writing level. In the other side, the use of ProWritingAid applications is most effectively used to assist students in writing English in the group with high writing level.



Chart 4.3 The average score of students in four groups

The diagram above shows a comparison of the average scores of students from the four groups. From the diagram, it is known that the group of students who used the Grammarly application in high writing level group got a lower average score when compared to the group of students who used the ProWritingAid application, the difference between the two applications is significant. For students with low writing level, the group of students who used the Grammarly application got a higher average score when compared to the group of students who used the ProWritingAid application, the difference in average scores is significant. The result represents that the effectiveness of using the Grammarly and ProWritingAid applications is influenced by the student's writing skills.

Based on the explanation above, it can be conclude that from the two applications, namely Grammarly and ProWritingAid, the Grammarly application is most effective for writing English in groups of students with low writing level. In other side, ProWritingAid application is most effective for writing English in groups of students with high writing level.

### **CHAPTER V**

### **CONCLUSION AND SUGGESTION**

In this chapter, the researcher provide conclusions and suggestions based on the research findings on the field and the discussion that has been described in the previous chapter.

### 5.1 Conclusion

Based on the research results above, the researcher concludes that the use of Grammarly and ProWritingAid applications across students writing level is effective in English writing skills. This study also reveal that the Grammarly application is most effective for groups of students with low English writing level, while ProWritingAid application is most effective for groups of students with high English writing level. This study also find that the effectiveness of using Grammarly and ProWritingAid applications influence by students writing skill levels. This study strengthens the theory in previous research which states that the application of Grammarly and ProWritingAid are effective in improving students' writing skills.

The researcher concludes the above based on the statistical analysis results as follows: 1). The results of the two-way ANOVA analysis showed a significance of 0.000, where the value was smaller than 0.05 at the 5% significance level. With these results, H0 is rejected and Ha is accepted, meaning there is an interaction between the use of Grammarly and ProWritingAid application with students writing level in writing skills 2). The T-test results in the groups of students with a high level of English writing skill

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showed a significance value of 0.025, where the value was lower than 0.05. This score resulted in the decision that  $H_0$  was rejected and  $H_a$  was accepted, meaning the students with high writing level who were taught by using Grammarly application is lower than the students with high writing level who were taught by using ProWritingAid application. 3). The result of the T-test in the groups of students with low levels of English writing skill get a significance value of 0.000, where the value was smaller than 0.05, resulting in a decision  $H_0$  was rejected and  $H_a$  was accepted, meaning the students with low writing level who were taught by using Grammarly application is greater than the students with low writing level who were taught by using Grammarly application is greater than the students with low writing level who were taught by using ProWritingAid application.

### 5.2 Suggestion

Based on the results of this study, the researcher provides suggestions for several parties who are directly or indirectly involved in this research.

1. Students

Students can use the Grammarly and ProWritingAid applications to check their English writing assignments. The researcher suggests exploring several other automated writing evaluation (AWE) tools so that students can find the right application to help in writing English.

2. Teacher

Researcher provide suggestions for teachers to apply the use of Grammarly and ProWritingAid applications in class because they have been proven to impact students' writing skills positively. On the other hand, using the Grammarly and ProWritingAid applications will make it easier for teachers to check student writing, thus saving time.

3. School

Researcher provide advice to schools so that the use of technology in education is increasingly massive. One of them is the use of automated writing evaluation (AWE) tools for all students so that learning can be more effective and efficient.

4. Researcher

The researcher advises other researcher to examine the factors that influence the effectiveness of using Grammarly and ProWritingAid applications more deeply. The researcher also suggests researching the ProWritingAid application because few studies have discussed the ProWritingAid application.

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# APPENDICES

# Appendix I Research Permittion Letter

Nomor	: 712/Un.03.1/TL.00.1/03/2022	g.ac.ld. email : fitk@uin_malang.ac.ld 23 Maret 2022			
Sifat Lampiran Hal	: Penting : - : Izin Penelitian				
	Kepada Yth. Kepala MAN Batu di Batu				
	Assalamu'alaikum Wr. Wb.				
	Dengan hormat, dalam rangka menyelesaikan tugas akhir berupa penyusunan skripsi mahasiswa Fakultas Ilmu Tarbiyah dan Keguruan (FITK) Universitas Islam Negeri Maulana Malik Ibrahim Malang, kami mohon dengan hormat agar mahasiswa berikut:				
	Nama NIM Jurusan Semester - Tahun Akademik Judul Skripsi Lama Penelitian	<ul> <li>Muhammad Ismail Wahyuda</li> <li>18180029</li> <li>Tadris Bahasa Inggris (TBI)</li> <li>Genap - 2021/2022</li> <li>The Effectiveness of Grammarly and ProWritingAid Application Toward Teaching Writing Skills Across Student's Writing Achievement to Islamic State Senior High School Batu Students</li> <li>Maret 2022 sampai dengan Mei 2022 (3</li> </ul>			
	bulan) diberi izin untuk melakukan penelitian di lembaga/instansi yang menjadi wewenang Bapak/lbu.				
	Demikian, atas perkenan dan kerjasama Bapak/Ibu yang baik disampaikan terimakasih.				
	Wassalamu'alaikum Wr. Wb.				
	Brite Muhammad Walid, MA				
embusan : Yth. Ket	ua Program Studi TBI				

### Appendix II Instrument Validation Letter



### Appendix III Instrument Validation

### Validation Sheet

### **English Writing Test**

"The Effectiveness of Grammarly and Prowritingaid Application toward Teaching Writing Skill across Student's Writing Achievement to Islamic State Senior High School Batu Students"

Validator	:	Maslihatul Bisriyah, M. TESOL
NIP	:	19890928 201903 2 016
Expertise	:	English Writing
Instance	:	UIN Maulana Malik Ibrahim Malang
Validation Date (dd/mm/yyyy)	:	April 12th, 2022

#### A. Introduction

This validation sheet is used to get an assessment from the validator (Mr/Ms) on the research instrument that I use. Every feedback and suggestion are essential for increasing the quality of the instrument. Thank you so much for your willingness to become a validator in my study.

### B. Guidance

- In this part, please give a score on each item with sign (✓) in the following columns below:
  - 1 = Very poor
  - 2 = Poor
  - 3 = Average
  - 4 = Good
  - 5 = Excellent
- 2. Please give your feedback and suggestion in the columns.

# C. Validation Sheet

No.	tt	Score				
110.	Aspect	1	2	3	4	5
1.	The suitability of instrument indicators with indicators of achievement of basic competencies					3×
	<b>Basic Competence Indicators:</b> 4.8 Menangkap makna secara kontekstual terkait fungsi sosial, struktur teks, dan unsur kebahasaan teks explanation lisan dan tulis, terkait gejala alam atau sosial yang tercakup dalam mata pelajaran lain di kelas X1.				~	
	<b>Instrument Indicators:</b> Students are able to write explannation text according to the theme, general structure, and language feature.					
2.	The suitability between the instrument indicators and Instructions					
	<b>Instrument Indicators:</b> Students are able to write explannation text according to the theme, general structure, and language feature.				~	
	Instructions: (see the instructions table)					
3.	Research instrument use good and correct language and punctuation				1	
4.	The questions that are made do not cause double interpretation or misunderstanding.					~
5.	The research instrument is communicative and easy to understand				1	
6.	Research instruments can help researchers find out students' abilities in writing skills					-

Suggestion:

1. Better use "instructions" instead of "questions".

2. For the first criteria, make it one instructions, become:

"Write an explanation text about natural or non-natural phenomena which contain the cause and effect of a phenomenon that occurs."

- 3. For general structure criteria, change the number of instructions start from 1 (it becomes 5 instructions).
- 4. For language feature criteria, change the number of instructions start from 1.
- 5. CONCLUSION

1.5

Based on the validation sheet above, it can be concluded that the instruments that have been made is:

Please cross out (abcd) the answer that doesn't match the conclusion you gave.

1. The instrument can be used without revision

2. The instrument can be used with slight revision

- 3. The instrument can be used with many revisions
- 4. The instrument cannot be used

Malang, April 12, 2022 Validator Maslihatul Bisriyah, M. TESOL NIP. 19890928 201903 2 016

Appendix IV Documentation









# Appendix V Thesis consultation Logbook



### BUKTI KONSULTASI DAN BIMBINGAN PROPOSAL SKRIPSI

Tanggal	Bab/Materi Konsultasi	Saran/Rekomendasi/Catatan	Paraf
07 Desember 2021	Penjelasan ringl mengenai renca penelitian		A
14 Desember 2021	Aplikasi ya digunakan dal penelitian		Ħ
06 Januari 2022	Konsultasi propo skripsi	<ul> <li>al &gt; Mempelajari kembali teknik sampling yang digunakan</li> <li>&gt; Mencari buku karya Zoltan Dornyei</li> </ul>	A
12 Januari 2022	Konsultasi propo skripsi	<ul> <li>al &gt; Merubah metode penelitian dengan factorial design</li> <li>&gt; Mempelajari metode factorial design</li> </ul>	A
19 Januari 2022	Konsultasi propo skripsi	al > Diskusi mengenai factorial design yang akan dipakai	11-
02 Februari 2022	Konsultasi propo skripsi	<ul> <li>al &gt; Membuat instrument test</li> <li>&gt; Membuat simulasi perhitungan data</li> <li>&gt; Merubah variable TOEFL score dengan English writing achievement</li> </ul>	Ħ

10	Konsultasi proposal	<ul> <li>Mencari pembuktian rumus yang dipakai</li></ul>	
Februari	skripsi	dalam penelitian	
2022		<ul> <li>Membuat simulasi perhitungan data dengan excel</li> </ul>	

Malang, 23 Februari 2022 Dosen Pembimbing.

Augur

Dr. Alam Aji Putera, M.Pd NIP. 19890421201802011153



UNIVERSITAS ISLAM NEGERI MAULANA MALIK IBRAHIM MALANG FAKULTAS ILMU TARBIYAH DAN KEGURUAN JalanGajayanaNomor 50 Telepon (0341) 552398 Website :<u>www.fitk.uin-malang.ac.id</u>Faksimile (0341) 552398

### BUKTI KONSULTASI DAN BIMBINGAN SKRIPSI

Tanggal	Bab/MateriKonsultasi	Saran/Rekomendasi/Catatan	Paraf
19 Maret 2022	Konsultasihasil seminar proposal	<ul> <li>Metode tetap memakai kuantitatif</li> <li>Tidak merubah research question</li> </ul>	the
20 April 2022	Diskusi waktu pengambilan data, dan jurnal penelitian	<ul> <li>Revisi jurnal penelitian</li> </ul>	the
19 Mei 2022	Menyerahkan naskah skripsi dan jurnal penelitian	<ul> <li>Revisi naskah pada bagian tabel</li> <li>Menghilangkan kata improve dalam skripsi</li> </ul>	The
02 Juni 2022	ACC Skripsi		m

Malang, 02 Juni 2022 Dosen Pembimbing.

Dr. Alam Aji Putera, M.Pd NIP. 19890421201802011153

# Appendix V Curriculum Vitae

## **CURRICULUM VITAE**

Nama Lengkap	: Muhammad Ismail Wahyuda
Tempat, tanggal lahir	: Manado, 09 November 1999
Jenis Kelamin	: Laki-laki
Agama	: Islam
Fakultas, Jurusan	: FITK, Tadris Bahasa Inggris
Perguruan Tinggi	: UIN Maulana Malik Ibrahim Malang
Alamat Rumah	: Perum Bumi Biting Indah A4- 15, Kutorenon, Sukodono,
No. HP/Telepon	Lumajang : 085854950089
Alamat E-mail	: ismailwahyuda22@gmail.com
Nama Wali	: Yayok Wahyudi



Riwayat Pendidikan

- 1. 2004 2006 TK Dharma Wanita Kalibendo
- 2. 2006 2012 MI Nurul Islam Kota Lumajang
- 3. 2012 2015 MTsN Lumajang
- 4. 2015 2018 SMA Al-Munawwariyyah
- 5. 2018 Sekarang UIN Maulana Malik Ibrahim Malang

Malang, June 2, 2022 Mahasiswa,

Muhammad Ismail Wahyuda NIM. 18180029