

# Android Application for Writing Skill: Chatbot as a Learning Media at Home for Adult

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DOI: 10.37729/scripta.v10i1.2715

**Abstract.** The purpose of this research is to determine adult in using chatbot for writing skill at home. this research approach was descriptive quantitative method. It aims to provide a description of the difficulties of adults in improving writing skills in Muhammadiyah University of Jakarta. In collecting data, The instrument utilized by the researcher was a questionnaire. A questionnaire was conducted to determine the percentage of adults who were influenced by chatbots to improve their writing skills. Each question has five (5) answer categories to choose from. The questionnaire consists of several statements related to implementation of chatbot media to improve writing skills. For the first statement It was 90% of students agreed that writing is important. For the second statement There were 81% of pupils who said they enjoyed their writing skills. For the third statement is 71% of respondents said they like it. For the fourth statement is 67% of people said that writing is tough. For the fifth statement there were 62% like replies. For the sixth statement there were 67% helpful responses. For the seventh statement there were 62% like answers. For the eighth statement is the pupils gave easy said in 81% of the responses. For the ninth statement The students provided 62% helpful responses. For the tenth statement there were 67% interested responses from the students. The researcher concluded that almost all of the students agreed if their teacher used chatbot media in the process of teaching English.

**Keywords:** English writing, Application, Chatbot

## 1. Introduction

Learning as a communication process is a learning activity in the form of a set of communication process, which includes aspects of; communicators, messages, media, receivers of messages, and feedback. Communication is a crucial aspect of life. Organizations and schools should have efficient communication in order to boost productivity at work [1]–[3]. This is especially true when it comes to education, which serves as a tool for societal well-being. People socialize through speech, and as a result, they engage in desired activities. We use Language as a communication tool [2]–[4]. Language itself has a very important role in human life. With human language, it is easy to learn other sciences. Use of language as a human capital in the pursuit of other knowledge, as well as the development of human potential [5]. One of the most spoken languages in the world is English. As we all know, English is a widely spoken language around the world. The significance of Learning English is a must for all nations as a world society [6]–[8]. English could be very essential for everyone due to the fact within the global of education English has been decided on as one of the subjects that need to be mastered starting from Junior High School, High School, and University. Thinking about this language the global language.

English language today becomes a crucial aspect in this era. Speaking, listening, reading, and writing are the four skills that are commonly measured in second language performance assessments. When we learn English, we must know and understand some of the important things of the language [9].

In the learning system. First, Speaking has an outstanding area in language learning it is a highly necessary skill to strengthen and enhance as a device and facilitator of communication. Second, The ability we master is listening after we speak. It is very important to master this first because before speaking, we listen to the native speaker and then speak according to the way the native speaker

pronounces it. Third, the skill of reading is as important as any other skill. We can gain a lot of information and knowledge by reading [10]. And last, Writing is a skill that creates 'language products' such as letters, poetry, novels and other language products. Writing skills are quite complex skills because when writing English, we need to know grammar and word order. As long as these skills are involved, writing is considered an essential skill and needs to be more practiced. According to this skills, we can say that writing has a massive function in the technique of mastering English. Because in each and every language learning, all people measures the language competencies when they can speak and write nicely with the language [11].

In this millennial era writing is a fundamental skill, Writing skills are more difficult to master than other language skills [12]. Writing is a versatile skill that can be used to discover new ideas, persuade others, document facts, construct fictional worlds, entertain others, document experiences, and examine the meaning of events and situations [13]. Authors need to write their message with the correct structured statement so that readers get a clear message shared. In acquiring knowledge of English, writing is considered the most superior stage studying due to the fact it requires students to apprehend the writing policies such as punctuation and grammar. The writing activity requires writers to think creatively and actively and to incorporate ideas, thoughts, experiences and feelings into their writing wherever possible.

Generally, Writing is an active language skill, people use their writing to express their ideas, much like newspapers are used to inform something in writing. Three types of issues that can arise when learning to write for academic purposes: Attitudinal, cognitive, and social issues plagued English learners in adult education classes when it came to gaining academic writing skills [14]. They couldn't figure out where to begin, how to develop their ideas, or how to end the essay [15]. This is due to the writing process, which requires now not only the mastery of phrase writers. However, the use of punctuation and the preference of words additionally take consideration. The weak point of writing abilities may provoke the first influence of a author unsatisfactory and supply a critical response if the reader sees a mistake in spelling or grammar [16].

Considering the importance of this, The call for innovation in language teaching, including those related to 21st century skills, digital literacy and technology integration, has changed; this means that online or flexible learning and teaching have become necessary and imperative, no longer A choice, but a fundamental direction that everyone, especially teachers and learners, is taking [17]. Since covid, the world has been paralyzed. This crisis is happening across the globe. The global situation has changed dramatically. Many sectors have gone through a crisis due to the spread of this virus. It is not just the economic sector that has been impacted, but the education sector as well. With schools in 188 countries closing in April 2020, many are finding new ways to continue their education through technologies such as the internet, TV and radio. However, in many low- and middle-income countries, especially among poor households, access to these technologies is limited [18].

Referring to the above-mentioned writing problems, In relation to this. the researcher prefers to use a new method, it will be effective to employ the appropriate media in the process of teaching English writing. One of the learning media that utilizes technology, A chatbot, in other words, is a computer software that replicates human communication using voice instructions, text chat, or both. The most hyped voice technology this year is intelligent virtual assistants. The core concepts are the same whether you call these entities digital assistants, conversational interfaces, or simply chatbots: Get results by talking to machines in conversational and natural language [19]. Chatbot, often known as a chatterbot, is an artificial intelligence (AI) tool that can be integrated and utilized by any popular messaging service [20]–[22].

Recent study conducted about chatbots are popular applications built using artificial intelligence [23]. It is used in humanoid robots, personal assistants, automobile assistants, and other applications to make human job easier. When it comes to instructional purposes, the chatbot is more useful. This chatbot will respond to educational-related queries. In previous research, In this study, 85 percent of students said the chatbot helped them discover their writing issues; 82 percent said it helped them become better reviewers by enhancing peer feedback quality, and 64 percent said it helped them address peer review confusions instruction [24]. With this application, users are expected to be able to easily practice writing English anywhere and anytime. It is hoped that the more often they write English using their devices the more sentences or words they produce so that they can foster their fluency in speaking English.

A chatbot is a type of computer software that mimics human interaction by using voice commands, text conversations, or both. Chatbots are the field of artificial intelligence (AI) research and subsequent inventions and discoveries that eventually lead to computers, machines, and other human-

like intelligent defined by cognitive abilities, learning abilities, adaptability, and decision-making abilities [25]. Feature that can be integrated into and utilized with any significant messaging platform.

Artificial intelligence technological know how is becoming the groundwork for business. The majority of businesses use it to improve customer experiences. The field of education is just now starting to figure out how to successfully integrate AI for both staff and students. Better student experiences can be achieved by utilizing artificial intelligence [26].

Chatbot is a well-known term for the technique of conversation between humans and computers using natural human language. Therefore, the user is not aware that they are talking to the machine. Undoubtedly, the emergence of chatbots in the world of education has helped users in every way. chatbot provide the adults with a new and varied learning environment that meet the adults' learning style [27]. By integrating chatbot in learning activities in everywhere, adults are encouraged to interact and communicate in a enjoy atmosphere. The chatbot also engages adults' questions and statement activities that challenge the mind and teach a writing skills[28]–[30].

Solve adults' difficulties in writing skills. One of the famous chatbot to adults is andy chatbot. The use andy chatbot in improve writing skill can create self-confidences for adults. Based on those considerations, this study is conducted to improve adults' writing skill comprehension by using andy chatbot [31]. Based on what have been discussed above, So the researcher used chatbots in language learning that were independent in the covid 19 emergency. The chatbot used was a chatbot called ANDY, an android-based application that helps users in the language learning process, especially writing skills.

## 2. Method

This research method is a descriptive method, using quantitative methods approach. Quantitative methods are defined as the procedures of gathering, analyzing, interpreting, and writing the results of a study [32]. It aims to provide a description of the difficulties of adults in improving writing skills in Muhammadiyah University of Jakarta. This research will be conducted on students Muhammadiyah University of Jakarta. located on Jl. K.H. Ahmad Dahlan, Cireundeu, Kec. Ciputat Tim, South Tangerang City, Banten 15419. Researchers only use the 8th semester of English Department as the object of research.

Descriptive quantitative technique is a method for describing the condition of a phenomenon that has been completed using a measuring instrument and then processed in line with the function [33]. In other words, descriptive quantitative must organize and evaluate numerical data in order to provide a consistent, concise, and clear representation of a phenomena or event [34].

### Researcher Instruments

As a result, the study offers the following instruments for gathering data: The researcher used a questionnaire as their study tool. The research tool employed by the researcher was a questionnaire. The purpose of the questionnaire is to help the students recognize and understand the using of application chatbot [35]. The pupils were instructed by the researcher to post a brief text on social media. The aim of the test is to assist the students in identifying and comprehending the punctuation errors they have made. The researcher gave the students instructions on how to submit a quick text to social media. A questionnaire served as another research tool for the researcher. The pupils were given a questionnaire to see how well they understood in using application chatbot in writing skill [36].

### Technique Collecting the Data

In collecting data, The instrument utilized by the researcher was a questionnaire. A questionnaire was conducted to determine the percentage of adults who were influenced by chatbots to improve their writing skills. Each question has five (5) answer categories to choose from. The researcher employed questionnaires to collect data. Each questionnaire item has 5 answers, which are denoted [37]:

- 1 : Strongly disagree
- 2 : Disagree
- 3 : Neutral
- 4 : Agree
- 5 : Strongly agree

This is a step by step procedure for data collection by researcher. First, Correspondents will be given a questionnaire with 12 question items to complete. The purpose is to determine how many participants agreed the chatbot media has aided them. Second, the responses were collated and converted to a percentage of how many people strongly agree, agree, neutral, disagree, and strongly disagree. And last, The result of which was put into percentage.

## Data Analysis Technique

### 1. Validity

The data analysis technique is the method carried out in processing data into information, so that the data in research be easy to reach. In testing the validity of this study using the Product Moment Correlation, here's the formulas :

$$r = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{(N \sum X^2 - (\sum X)^2)(N \sum Y^2 - (\sum Y)^2)}}$$

Description :

|            |   |
|------------|---|
| r          | = Correlation coefficient or r count                          |
| n          | = Number of trial samples                                     |
| $\sum x$   | = Total sample score x  |
| $\sum y$   | = Total sample score y  |
| $\sum xy$  | = The number of questions with a score of x with a score of y |
| $\sum x^2$ | = sum of squares of all scores x                              |
| $\sum y^2$ | = sum of squares of all scores y                              |

### 2. Realibility

The reliability test of this study used the Cronbach Alpha formula:

$$r_{11} = \left( \frac{k}{k-1} \right) \left( \frac{\sum \sigma^2 b^2}{\sigma^2 t} \right)$$

Description :

|                     |                                      |
|---------------------|--------------------------------------|
| r                   | = Instrument reliability coefficient |
| k                   | = Number of items in the instrument  |
| $\sum \sigma^2 b^2$ | = Number of item variants            |
| $\sigma^2 t$        | = varians total                      |

Because the research instrument is in the form of a questionnaire, the reliability of the instrument is tested using the formula Alpha Cronbach. If alpha > 0.90 then the reliability is perfect. If alpha between 0.70 - 0.90 then high reliability. If alpha 0.50 – 0.70 then moderate reliability. If alpha < 0.50 then low reliability. If alpha is low, chances are one or some items are not reliable.

### 3. Normality test

A normality test is used to determine whether data in a study is normal or abnormal. Researcher using Kolmogorov-Smirnov:

$$D = F_o/n - (F_k/n - F((Z_i)))$$

Information :

|                    |  |
|--------------------|--|
| D                  | = Count coefficient Kolmogorov-Smirnov |
| F <sub>o</sub>     | = Frequency                            |
| N                  | = Number of respondents                |
| F(Z <sub>i</sub> ) | = Great opportunity of every value     |

Researchers used SPSS assistance. With the following steps:

- a. Hipotesis
  - Ho : The population is normally distributed
  - Ha : The population is not normally distributed
- b. Testing Criteria
  - If the probability value  $> 0.05$  then Ho is accepted
  - If the probability value  $< 0.05$  then Ho is rejected

#### 4. Linearity test

The linearity test determines whether or not two variables have a linear relationship. If the data is not linear, a basic linear regression calculation cannot be used. This linearity test is computed using SPSS software.

- a. Linearity test decision making basis
  - 1) If the Sig. Deviation from Linearity value  $> 0.05$ , it is determined that the independent and dependent variables have a linear relationship.
  - 2) If the Sig. Deviation from Linearity  $< 0.05$ , it is considered that no linear relationship exists between the independent and dependent variables.

#### 5. Simple Linear Regression Analysis

Simple linear regression analysis studies whether two or more variables have an influence/relationship or not, measure the strength of their influence, and make predictions based on the strength of the influence/relationship.

The simple regression tester in this study uses SPSS to determine the influence between variables, measure the strength of the influence and make predictions of the influence between variables, then the simple regression formula is used as follows:

$$Y = a + b X$$

Information:

Y = predicted value

a = constant or if the value of X = 0

b = regression coefficient

X = value of independent variable

Next, see the regression result hypothesis if;

- a) Test the hypothesis with a significance value of 0.05:
  - 1) If the value of sig  $< 0.05$  means that there is an influence or Ho is rejected and Ha is accepted.
  - 2) If the value of sig  $> 0.05$  means that there is no effect or Ho is accepted and Ho is rejected.

#### 6. Determining coefficient of determination

To find out how big the variable x with variable y, please note the value of coefficient of determination, used the formula as follows;

$$KD = r^2 \times 100\%$$

Note :

KD = Coefficient of Determination

$r^2$  = Coefficient of correlation between variable X with variable Y.

#### 3. Findings

The research was conducted at Muhammadiyah University of Jakarta in 2021/2022 academic year. Researcher only use the 8th semester of English Department as the object of research. This research is based on quantitative research. Research data obtained from two variables x and y.

This research was conducted by distributing questionnaires to students English Department in the 8th semester at Muhammadiyah University of Jakarta.

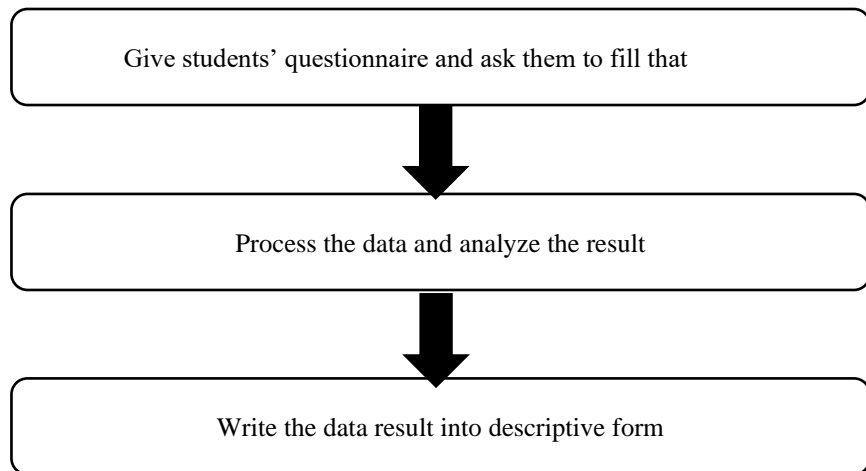


Figure 1

To support the data about the student's responses, The step is to give a questionnaire to students to be analyzed by student responses about the application of chatbot media.

Table 1. Student Respondens

| <b>NO</b> | <b>NAME</b> |
|-----------|-------------|
| 1         | VH          |
| 2         | SN          |
| 3         | RS          |
| 4         | CN          |
| 5         | ST          |
| 6         | MW          |
| 7         | AN          |
| 8         | AP          |
| 9         | NA          |
| 10        | IU          |
| 11        | ZF          |
| 12        | MS          |
| 13        | AD          |
| 14        | PH          |
| 15        | TH          |
| 16        | AS          |
| 17        | RN          |
| 18        | DH          |
| 19        | AH          |
| 20        | SV          |
| 21        | SD          |

The questionnaire consists of several statements related to implementation of chatbot media to improve writing skills. The students responded to the questionnaire by selecting one of the options;

Based on the results of the first question, there were 14 students who answered (strongly agree) that writing skills are very important, 5 students said (agree), 1 students stated (neutral) and 1 student stated disagree. Following the results of the second question, 8 students responded (strongly agree), 9 students said (agree), 3 students said (neutral), and 1 student said (disagree). For the result of the third 10 students said (strongly agree), 5 said (agree), 5 said (neutral), and 1 said (disagree) based on the results of the third question. Based on the results of the fourth question, 5 students answered (strongly agree), 9 students said (agree), 6 students said (neutral), and 1 student said (disagree) that writing was not difficult. According to the results of the fifth question, 9 students responded (strongly agree), 4 said (agree), 7 said (neutral), and 1 said (disagree) with the application of chatbot media in studying writing.

According to the results of the sixth question, 8 students answered (strongly agree), 6 said (agree), 6 said (neutral), and 1 said (disagree) on the use of chatbot media to improve writing skills. According to the results of the seventh question, 7 students answered (strongly agree), 6 students said (agree), 7 students said (neutral), and 1 student said (disagree) on using chatbot media. Based on the results of the eight questions, 8 students said (strongly agree), 9 said (agree), 4 said (neutral), and 0 said (disagree) with chatbot media. According to the results of the ninth question, 9 students stated (strongly agree), 4 students said (agree), 6 students said (neutral), and 2 students said (disagree) that it does not help with find ideas in writing. According to the results of the tenth question, there were 6 students said (strongly agree), 8 students said (agree), 6 students said (neutral) and 1 students said (disagree) said not interested with chatbot media. According to the results of the eleventh question, 7 students stated (strongly agree), 3 students said (agree), 9 students said (neutral), and 2 students said (disagree) not motivated with chatbot media. According to the results of the twelfth question, 9 students responded (strongly agree), 8 said (agree), 4 said (neutral), and 0 said they did not agree if their teacher used chatbot media in the teaching learning process.

According to the data, the researcher obtained the questionnaire result and the percentage of the diagram. The students responded positively to the use of chatbot media in their writing skills. They thought the chatbot assisted them in writing. Because they had a problem with their vocabulary when they wanted to write something, but when they learned using chatbot media, it allowed them to make writing skills easier even though they did not have the vocabulary. As a result, they could write it in their own language. Chatbot media piqued the pupils' interest and inspired them to learn to write. Chatbot media offers an advantage for students because it can be used anywhere, and their reactions via this medium were overwhelmingly positive.

#### **4. Discussion**

The researcher tries to explain the conclusions that have been processed by the researcher through the data that the researcher has processed from various statistical tests. The results of the study are the cause of the theory that supports the research that has been done previously. The following is a presentation from the researcher:

##### **Validity and Realibility**

The results of the validity of the questionnaire were given to 21 respondents with a total of 15 statements, of which 12 statements were said to be valid, so that 12 statements were used by researchers in the study. The results of the reliability test of variables (X) and (Y) are based on statistical calculations of Cronbach's Alpha 0.939.

##### **The normality test**

The normality test using the Kolmogorov Smirnov formula yielded a value of  $0.200 > 0.05$ , indicating that the data was normally distributed.

##### **Linearity test**

Deviation value from linearity Sig. obtained based on the data table is 0.431 so that it exceeds 0.05. it is possible to conclude that there is a linear relationship between the variables (x) and (y).

##### **Simple Linear Regression Analysis**

The simple linear regression test results rose by 0.327 at a constant of 6331. Sig value. The coefficients table yielded a value of  $0.001 < 0.05$ , implying that the X variable has an effect on the Y variable.

##### **Coefficient of Determination**

According to the calculation, the independent variable (X) has a 50.9% effect on the dependent variable (Y). From the data, the researcher purposed the hypothesis as follows; positive hypothesis (H1), there is a significant influence in using chatbot in writing skills; negative hypothesis (H0), there is no significant influence of using chatbot in Writing skills.

To prove the hypothesis, the researcher used the result gained by the students to be calculated by the validity test, reliability test and prerequisite test follow assumption as bellow; if the coefficient computation yields a result greater than table, the alternative hypothesis (H1) is adopted and hypothesis H0 is rejected. Furthermore, the results of the questionnaire's validity were supplied to 21 respondents with a total of 15 statements, of which 12 were said to be valid, so that 12 statements were employed by researchers in the study. The reliability test findings for variables (X) and (Y) are then based on statistical calculations of Cronbach's Alpha 0.939. The normality test using the Kolmogorov Smirnov formula yielded a value of  $0.200 > 0.05$ , indicating that the data was normally distributed. The deviation

from linearity Sig. calculated from the data table is 0.431, which surpasses 0.05. As a result, it is possible to conclude that there is a linear relationship between the variables (x) and (y). Meanwhile, the basic linear regression test results increased by 0.327 at a constant of 6331. Sig value. The coefficients table yielded a value of  $0.001 < 0.05$ , implying that the X variable has an effect on the Y variable. According to the calculation, the independent variable (X) has a 50.9% effect on the dependent variable (Y).

From the data analysis described above it could be confirmed that H0 was rejected while H1 was accepted. This also means that the chatbot media has an influence on student writing skills.

## 5. Conclusion

Based on the findings of the preceding chapter's research and discussion of the influence of chatbot media on the learning process of writing skills for students in the English department at the University of Muhammadiyah Jakarta in semester 8, it is possible to draw the following conclusions; there was an influence of chatbot media on the writing learning process for students in the English department at Muhammadiyah University, Jakarta's 8th semester. This is demonstrated by the value of sig. The coefficients table yielded a value of  $0.0001 < 0.05$ . So there is an effect of using chatbot media on the writing learning process; the magnitude of the influence of the use of chatbot media on the learning process of writing in students English departement in the 8th semester at the University of Muhammadiyah Jakarta is 50.9%. This is evidenced by the value of the coefficient of determination ( $r^2$ ), which is 0.509.

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