CHAPTER I
INTRODUCTION

1.1 Background of the Problem

Scientific articles are scientifically written articles that contain research report. This is in line with the opinion of Jatmiko et al. (2015, p. 22-23), a scientific article is a report writing that contains ideas from a person or group of people through research process and the content can be verified for later national or international publications. In writing a scientific article, people have to go through a research process that starts from the observation, research, until the evaluation, and then the result is written in the form of a written report. The writing must be based on the method of scientific writing and the format of the writing must be adapted from the institution where the writer will publish the writing. If it is well written, it will be judged and verified by the right people. After these stages, the article can be published both nationally and internationally.

Scientific journals will be published by certain institutions, where researchers and writers can submit their work. This journal is published periodically and is very useful for monitoring the latest scientific developments. It also contains various types of research, ranging from quantitative and qualitative research. The research was written into article then packaged and grouped into suitable themes and bound into a scientific journal. It can be used as a reference for other similar scientific activities (Jatmiko et al., 2015, p.23). It can be used as a reference for academic writing as well as thesis writing, also for other formal

writing. That is why it requires strict supervision in its publication. Editor and reviewers are used, thus the validity and quality are maintained. This scientific article is usually an assignment for university students.

Related to their assignments, writing scientific articles for university students is an obligation. University students will be assigned to certain subjects to write scientific articles. They will be asked to write scientific articles to be published in a journal in their field. Publishing is useful to ensure the quality of their own writing and also to improve and maintain the quality of the place where they study. The publication of scientific articles is proof that they as students are able to write scientific articles and prove the quality of their tertiary institution that is able to produce students who are capable of writing as well. If they want to write, they will need to read a lot of scientific articles, hence the writer does not have less knowledge related to topic in their writing. Writing scientific articles requires accuracy because of the quality required, especially for English department students, both English education and English literature.

Students who come from the English department certainly have to make scientific articles in English. The process of making scientific articles is begun with the choosing of the topic, making the conception, finding the related theory, and writing it. However, in this process, they will find some difficulties, especially in the search for theory and writing the article itself. Weisman (as cited in Setiani, 2019, p. 29) states that amongs the four domains of language, writing can be the most challenging. That is because the students have to understand the whole scientific article and have to write it accurately. They have difficulties in

understanding scientific articles because they still have limited knowledge of the vocabulary used in the scientific articles.

Vocabulary used in scientific articles use scientific language and terms. The scientific language is less familiar to students. Thus in writing, they tend to use a lot of words that are not appropriate. The sentences they made eventually became too long and difficult to understand. Supposedly, scientific articles that have been published in journals have rich information about a research. Therefore, it is assumed that scientific articles not only have a lot of information but also are written effectively and not convoluted. The lack of vocabulary mastery and convoluted sentence arrangement can be seen from lexical density and grammatical intricacy.

Based on the previous related research conducted by Syarif (2018, p.20-21), the lexical density and grammatical intricacy of the twenty-one research document proposal introduction section were found that lexical density of English graduate students in academic writing class is less dense and its grammatical intricacy is high. The average result of lexical density is 43.89 and the average result of grammatical intricacy is 2.25. Therefore, those English graduate students still have limited knowledge about language use in academic writing. Whereas in the previous research conducted by Hanafiah and Yusuf (2016, p. 44-45), they said that in the linguistic abstract thesis written by undergraduate students were found that the abstract has a high lexical density index and uses simple language that can be seen from the low grammatical intricacy index. The average result of grammatical intricacy is 1.84 and the average result of lexical density is 57%. Thus from these findings can be useful for students who want to write abstracts.

From those previous researches above, it can be concluded that lexical density can be used as indicators of the density of information in text, and grammatical intricacy is indicator of the effectiveness of clauses used in writing.

Lexical density and grammatical intricacy distinguish between written and spoken language. Written language has a higher lexical item ratio to the total number of words and has less grammatical intricacy, while spoken language has lower lexical density and more grammatical intricacy (Halliday, 1990, p.61-62). The higher the lexical density ratio of a text, the more information contained there. Lexical density can be summed up as a measure of the density of information in a text or sentence. That is because lexical items are words that contain meaning or information. Thus, the higher the lexical density of a text, the more information in it can be taken by the reader. While lexical density is dealing with word, grammatical intricacy is dealing with clause.

Grammatical intricacy in the text relates to the number of clauses per sentence, and can be calculated by displaying the number of clauses as a proportion of the total number of sentences in the texts (Eggins, 2004, p.97). While the higher the grammatical intricacy ratio, the more difficult the text is understood because of the many clauses that exist in a text. Sentences that contain many clauses will make the readers difficult to understand the contents of the text. While spoken language such as interviews or dialogues will have a high grammatical intricacy ratio. If it is in practice speaking directly, it does not make the listener find it difficult to grasp its meaning due to the context of the accompanying situation. However, if it is made in the form of text, it will make it difficult for readers to grasp its meaning because of the absence of the context of

the situation in the sentences in the text. After knowing what lexical density and grammatical intricacy are, it can be seen how important these two things are to students.

The importance of lexical density and grammatical intricacy analysis for students is so that they can understand their own writing. This is also a guarantee that what they write actually uses written language in terms of lexical density and grammatical intricacy. Which the writing uses more lexical words than grammatical words and uses fewer clauses in one sentence than in spoken language. In order to help students regarding their needs in writing scientific articles, the researcher also used scientific articles for the analysis of lexical density and grammatical intricacy.

Scientific articles are analyzed as ways of adding insight into how to analyze and to know what the results of lexical density and grammatical intricacy analysis look like in these articles. Another reason is giving students an example of how to analyze lexical density and grammatical intricacy in scientific texts that using scientific vocabulary, formal writing style, and has a long texts. This is also because other researches have not used text as complex as the one in scientific articles. Thus, the researcher reviewed the following scientific articles.

In this research each scientific article in the Journal of English Education Volume 4, Number 1, 2019, published by the USN Scientific Journal, Indonesia will be analyzed. The part analyzed is every part of the articles, there are: title, abstract, introduction, discussion and conclusion. For the exception are tables, diagrams, and references. That is because what will be analyzed here is lexical density and grammatical intricacy in the text, hence only the text is analyzed. By

doing this analysis, it is expected to answer the question whether it is true that scientific articles have a high lexical density and low grammatical intricacy based on their form as written language. The journals analyzed here are also selected for several reasons.

This journal was chosen because it is a journal that has been indexed Sinta Science and Technology Index with score S5. It means the journal is already verified but there is still lack of citing. This journal also has been indexed in several institutions, namely: Google Scholar, PKP Index, Indonesian Publication Index, Indonesian Scientific Journal Database, Cite Factor Academic Scientific Journals, Member of Crossref, Directory of Research Journal Indexing, OCLC World Cat, Copernicus International Index, and Neliti.

This journal has also been examined and edited by the authorities. The authorities who examined the content of this journal were chief editors; editors from various universities in Indonesia, as many as sixteen people; there were also reviewers who came from Indonesian universities and in foreign universities such as from Malaysia, India, Turkey, Iran, Lebanon, the United States and Albania, they are twenty one people in total. From those reasons, it can be seen that this journal is a qualified journal. This journal has high lexical density and low grammatical intricacy that indicate written language.

Based on what has been described above, researcher is interested in describing how are the percentage of lexical density and the ratio of grammatical intricacy on scientific articles in Journal of English Education Volume 4, Number 1, 2019, published by USN Scientific Journal, Indonesia. After calculating the percentage of lexical density and the ratio of grammatical intricacy, the researcher

described whether the articles are considered into spoken language or written language. Considering the things above, the researcher wants to conduct a research entitled "An Analysis of Lexical Density and Grammatical Intricacy on Scientific Articles in Journal of English Education Volume 4, Number 1, 2019, published by USN Scientific Journal, Indonesia".

1.2 Focus of the Problems

In accordance with the background of the problem above, focus of the problems are:

1. How high the percentage of lexical density on scientific articles in Journal of English Education Volume 4, Number 1, 2019, published by USN Scientific Journal, Indonesia.

2. How high the ratio of grammatical intricacy on scientific articles in Journal of English Education Volume 4, Number 1, 2019, published by USN Scientific Journal, Indonesia.

3. The scientific articles in Journal of English Education Volume 4, Number 1, 2019, published by USN Scientific Journal, Indonesia can be classified into spoken or written language.

1.3 Formulation of the Problems

In accordance with the focus of the problems above, the formulation of the problems are:

1. "How high is the percentage of lexical density on scientific articles in Journal of English Education Volume 4, Number 1, 2019, published by USN Scientific Journal, Indonesia?"

2. "How high is the ratio of grammatical intricacy on scientific articles in Journal of English Education Volume 4, Number 1, 2019, published by USN Scientific Journal, Indonesia?"

3. "Are the scientific articles in Journal of English Education Volume 4, Number 1, 2019, published by USN Scientific Journal, Indonesia can be classified into spoken or written language?"

1.4 Objectives of the Research

In accordance with the formulation of the problems above, the objectives of the research are to investigate:

1. How high the percentage of lexical density on scientific articles in Journal of English Education Volume 4, Number 1, 2019, published by USN Scientific Journal, Indonesia.

2. How high the ratio of grammatical intricacy on scientific articles in Journal of English Education Volume 4, Number 1, 2019, published by USN Scientific Journal, Indonesia.

3. The scientific articles in Journal of English Education Volume 4, Number 1, 2019, published by USN Scientific Journal, Indonesia can be classified into spoken or written language.

1.5 Usages of the Research

In order to extend the benefit of this research, the uses of this research are.

a. Theoretically

This research is affords to give more information about lexical density and grammatical intricacy which are can be used as a resources of references for English Department students and lecturer to analyze these topics.

b. Practically

The result of this research is hoped to be useful for the next researchers who wish to conduct a research on the similar research, for this research is providing insight in analysis of lexical density and grammatical intricacy.