INTRODUCTION

A number of researchers have suggested that frequency-based word lists can help one to expand their English vocabulary by suggesting which words one should try to learn [1]. The mastery of word frequencies facilitates learners to achieve a higher level of proficiency in English. Word frequency is also known as the lexical-frequency lists (corpus). These corpora are needed by learners in order to comprehend written and spoken English [2]. For these reasons, learners who wish to achieve certain proficiency levels of English should be able to master lexical frequency lists.

There are several reasons why learning lexical frequency (word lists) is important for language learners and teachers. First, it helps educators in vocabulary teaching and it is necessary first to establish what vocabulary means to focus on teaching it [3]. Second, it is to provide a useful academic word pool for non-native English learners who need to read and publish articles in English [4]. Third, it assists learners in enhancing reading power dramatically for a relatively modest learning investment; and finally, it is intended to deliver the main words of English to learners in a shortened time frame [1]. Therefore, learning and mastering lexical frequency lists is inevitably paramount for non-native users of English learning in order to be able to read, speak and write in academic contexts.

A number of researchers have classified three types of lexical lists that learners have to learn in order to gain holistic comprehension of both spoken and written English texts. They are K1, which are basic word lists; for example, chair, table, see; K2, which is an academic word list, includes; for example, words like jeopardise, scrutiny; and K3, which is terminologies, such as linguistics, lexical and phoneme [5-7]. However, for non-native speakers of English, mastery of academic words is a problem. This leads to limited understanding of academic texts and academic discourses written in English.

There has been research, for example, on the number of words in the average vocabulary mastered by Indonesian students. The mastery of vocabulary of the first year of university students is on average of 1,226 words, far below the national threshold of high school completion (4,000-5,000 words) [8]. Therefore, it is believed that students might not be able to read foreign language texts when they are at university. This current research did not focus on the kinds of lexical lists that exist in the curriculum of high schools, but it explored the types of words (lexical items) that were used by students in writing their academic essay in an Indonesian university.

RESEARCH ON LEXICAL FREQUENCY LISTS

Studies on word frequency lists have been conducted in several areas, such as nursing, environmental science, financial sectors and medical science. A study in lexical frequency lists in 252 English nursing research articles worldwide from
on-line resources found that a frequency and range-based nursing academic word list including 676 words, which accounts for approximately 13.64% of the coverage, was produced to provide a useful academic word pool for non-native English learners who need to read and publish nursing articles in English. The findings suggest that it is necessary to generate field-specific academic word lists for EFL nursing students to strengthen their academic reading and writing proficiency [4].

In financial sectors, a study on financial corpus in Hong Kong contained 570 word families. The study found that there were high-frequency academic words across a range of financial disciplines that have provided valuable reference for a vocabulary in pedagogy, and inspired the development of some more specialised academic word lists. The study recommended that to utilise the academic word lists (AWL) effectively in relation to vocabulary teaching that draws on a specialised corpus, it will be necessary to evaluate the presence of the AWL in the corpus [10].

In environmental science, a study was conducted to examine how useful the academic word lists were for environmental science students in China. The results indicated that the AWL is partly useful for environmental science learners, because of the narrow coverage of some word families and the shortage of frequently used environmental academic words. This research recommended that it is necessary to establish a field-specific word list that better reflects specialised features. For example, the academic word lists that relates to environmental academic word lists. Moreover, it is also important to establish criteria and test the validity of environmental academic word lists, so that they are maximally useful for environmental science learners [11].

In medical science, there were two studies of word frequency lists in a medical science data base undertaken in an American university. It was found that a word list of the most frequently used medical academic words in medical science was compiled from a corpus containing 1,093,011 running words from medical on-line resources. The established medical AWL contains 623 word families, which accounts for 12.24% of the total number of words under study. It was recommended that medical academic word lists in this study can become a referential guide for teachers in developing English teaching materials for medical students [12]. A further study based on the medical academic words that was previously established in an American university indicated that various comparative resources of medical AWLs would assist learners to understand and learn academic words for medical science comprehensively [9]. A recent study applying the Lextutor tool as a medium for vocabulary learning was conducted in an Indonesian Islamic university setting. The study concluded that albeit the Lextutor tool can be less effective in helping students’ vocabulary learning, it provided a new medium and space for vocabulary learning [13].

These studies indicated that research into lexical frequency lists have been conducted in many areas of disciplines, which recommended that lexical frequency lists are significantly important for learners, particularly for non-native English speakers. The main reason is that they help learners in building academic word lists that enable them to engage with academic discourses in English contexts both written and oral contexts. What has been missing in the literature is that only scarce research about lexical frequency lists has been conducted within the Indonesian context, so that there is relatively little information about how lexical frequency lists are written in the Indonesian setting.

**RESEARCH METHOD**

The source of data corpus was taken from academic essays from 13 business English students who were studying the Essay Writing subject. The procedure was that all 13 selected students were given an example of essay writing and exercises during a semester. At the end of the semester, they were given a task to write an essay of approximately two thousand words.

**DATA ANALYSIS**

The data analysis used Web-based Lextutor on-line analysis tool (lextutor.ca). The steps in this analysis are illustrated in Figure 1.

![Figure 1: Data analysis.](image)

The procedure of data analysis was that, firstly, all data sources were collected and combined into one document; secondly, all data were inserted into on-line Lextutor analysis tool, vocabulary profile section; thirdly, the data were stored and submitted; finally, the result popped up in MS Excel or Web document.
FINDINGS

Table 1 described the number of lexical frequency lists of students. It contained the detailed number of vocabulary used by students in their academic essay.

Table 1: Number of lexical frequency of each student.

<table>
<thead>
<tr>
<th>Students</th>
<th>Basic words</th>
<th>Academic words</th>
<th>Terminologies</th>
<th>Total number of words (token)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,511</td>
<td>230</td>
<td>236</td>
<td>1,973</td>
</tr>
<tr>
<td>2</td>
<td>1,926</td>
<td>166</td>
<td>248</td>
<td>2,340</td>
</tr>
<tr>
<td>3</td>
<td>2,086</td>
<td>189</td>
<td>281</td>
<td>2,556</td>
</tr>
<tr>
<td>4</td>
<td>1,442</td>
<td>142</td>
<td>596</td>
<td>2,180</td>
</tr>
<tr>
<td>5</td>
<td>1,451</td>
<td>142</td>
<td>268</td>
<td>1,861</td>
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<td>6</td>
<td>1,442</td>
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<td>7</td>
<td>1,453</td>
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<td>269</td>
<td>1,864</td>
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<td>8</td>
<td>2,146</td>
<td>171</td>
<td>247</td>
<td>2,564</td>
</tr>
<tr>
<td>9</td>
<td>1,457</td>
<td>142</td>
<td>238</td>
<td>1,837</td>
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<tr>
<td>10</td>
<td>796</td>
<td>93</td>
<td>111</td>
<td>1,000</td>
</tr>
<tr>
<td>11</td>
<td>2,477</td>
<td>169</td>
<td>317</td>
<td>2,963</td>
</tr>
<tr>
<td>12</td>
<td>2,005</td>
<td>236</td>
<td>201</td>
<td>2,442</td>
</tr>
<tr>
<td>13</td>
<td>1,357</td>
<td>197</td>
<td>166</td>
<td>1,740</td>
</tr>
<tr>
<td>Sum</td>
<td>2,0327</td>
<td>1,983</td>
<td>5,624</td>
<td>25,934</td>
</tr>
</tbody>
</table>

From Table 1 above, it indicated that for most students the mean of student vocabulary level was 1,563 words, which met the standard of academic essay. The average number of words from all three categories was 1,994 words. This means that the average number of words in the essay was based on the expectation of the course.

CONCLUSIONS

From the findings, it can be concluded that:

- Participants in this research will find it difficult to read and understand academic texts, because they had mostly mastered a low level of vocabulary.
- It is inferred that students were at the intermediate vocabulary level of competence, because they were able to use basic words, terminologies and academic words in their academic essays.
- It is recommended that participants in this study become familiar with the academic words, so that they can be fully engaged with academic texts in English.
- Students who wish to increase their vocabulary levels can start to engage with exercises and word classification in on-line sources: for example: Lextutor.
REFERENCES