An investigation into the lexical density and readability of non-English majored first-year students’ writings at a pedagogical university in Vietnamese context

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Outline

I. Introduction

II. Literature Review

III. Methodology

IV. Conclusion
I. Introduction

• Background: SS study English at the very first semester to serve the purpose of study, research and teaching in the future

• Purpose: integrated English into the curriculum for Mathematic majored students to equip them with English language skills for their teaching Mathematics in English in the future
I. Introduction

• SS’ written works are analyzed and evaluated through two descriptive parameters: lexical density and readability.

• These two indices are not comprehensive assessment of one’s language competence, but can show the quantified notion of text complexity, which can provide a very first and relative look at their productive ability.
I. Introduction

Purpose of the study

Examine: lexical density + readability

=> outlook of non-English majored students’ writing competence (quantitative aspect)
I. Introduction

3. Research questions

- What are the lexical density and readability of non-English majored first-year students’ writings at Hanoi National University of Education

- What can be inferred from those factors?
II. Literature Review

1. Lexical density

- “Lexical density”: the proportion of lexical words (content words) to the total number of words in either spoken or written form of language (Ure, 1971)
- Lexical words the primary carriers of meaning

> non-lexical do not have lexical function, "purely in terms of grammar"
II. Literature Review

- Halliday (1985) referred to the term “items” rather than “words”
- More than a word to represent a sense

Ure (1971) “turn”: lexical word
“out”: non-lexical word

Halliday (1985) “turn out”: lexical item
II. Literature Review

- Johansson, Victoria. 2008. Lexical diversity and lexical density in speech and writing: a developmental perspective
- Šárka Timarová. Corpus linguistic methods in interpreting research: A case study. Charles University, Prague
II. Literature Review

- The formula proposed by Ure (1985)

Lexical density (%) = (Number of lexical words/ Total number of words) x 100
II. Literature Review

2. Readability

- “the level of ease or difficulty with which text material can be understood by a particular reader who is reading that text for a specific purpose” (Pikulski, 2002).

- Readability is different from legibility (how easy letters or characters are distinguished)

- > 100 formulas => Flesch–Kincaid readability tests
II. Literature Review

• This test rates text on a 100-point scale. The higher the score, the easier it is to understand the document.

\[
RB = 206.835 - (1.015 \times \text{ASL}) - (84.6 \times \text{ASW})
\]

- ASL = average sentence length (the number of words divided by the number of sentences)
- ASW = average number of syllables per word (the number of syllables divided by the number of words)
III. METHODOLOGY

1. Participants

- 2 males, 21 females
- first-year non-English majored students, class 63K, Faculty of Mathematics, at a pedagogical university in HN
- studied English in high school and had to take an English exam to get into university
- study English with the purpose of being able to teach Mathematics in English
- Right after entering university, learnt and practiced all four English skills
- Focus: writing paragraphs
III. METHODOLOGY
1. Calculating readability
II. METHODOLOGY
II. METHODOLOGY

![Readability Statistics](image)

<table>
<thead>
<tr>
<th>Counts</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Words</td>
<td>128</td>
</tr>
<tr>
<td>Characters</td>
<td>619</td>
</tr>
<tr>
<td>Paragraphs</td>
<td>1</td>
</tr>
<tr>
<td>Sentences</td>
<td>5</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Averages</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sentences per Paragraph</td>
<td>5.0</td>
</tr>
<tr>
<td>Words per Sentence</td>
<td>25.6</td>
</tr>
<tr>
<td>Characters per Word</td>
<td>4.6</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Readability</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive Sentences</td>
<td>0%</td>
</tr>
<tr>
<td>Flesch Reading Ease</td>
<td>32.8</td>
</tr>
<tr>
<td>Flesch-Kincaid Grade Level</td>
<td>15.0</td>
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</table>
### III. METHODOLOGY

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Description</th>
<th>Educational Attainment</th>
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</thead>
<tbody>
<tr>
<td>0-30</td>
<td>Very difficult</td>
<td>Postgraduate</td>
</tr>
<tr>
<td>30-50</td>
<td>Difficult</td>
<td>Undergraduate</td>
</tr>
<tr>
<td>50-60</td>
<td>Fairly difficult</td>
<td>Grade 10-12</td>
</tr>
<tr>
<td>60-70</td>
<td>Standard</td>
<td>Grade 8-9</td>
</tr>
<tr>
<td>70-80</td>
<td>Fairly easy</td>
<td>Grade 7</td>
</tr>
<tr>
<td>80-90</td>
<td>Easy</td>
<td>Grade 6</td>
</tr>
<tr>
<td>90-100</td>
<td>Very easy</td>
<td>Grade 5</td>
</tr>
</tbody>
</table>

*Table 1. Original Flesch reading ease description of style Educational Attainment Level (US) (Courtis & Hassan, 2002, p. 406) (Vinh To, Sifan, & Thomas, 201)*
III. METHODOLOGY

2. Calculating lexical density
### III. METHODOLOGY

Lexical density (%) = \( \frac{\text{Number of lexical words}}{\text{Total number of words}} \times 100 \)
IV. FINDINGS AND DISCUSSIONS

1. Findings

<table>
<thead>
<tr>
<th>STT</th>
<th>Student</th>
<th>Total words</th>
<th>Readability</th>
<th>Lexical density (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No.1</td>
<td>157</td>
<td>59.2</td>
<td>52.9</td>
</tr>
<tr>
<td>2</td>
<td>No.2</td>
<td>92</td>
<td>57.5</td>
<td>59.8</td>
</tr>
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<td>3</td>
<td>No.3</td>
<td>98</td>
<td>58.5</td>
<td>56.7</td>
</tr>
<tr>
<td>4</td>
<td>No.4</td>
<td>135</td>
<td>51.11</td>
<td>57.8</td>
</tr>
<tr>
<td>5</td>
<td>No.5</td>
<td>115</td>
<td>68.2</td>
<td>66.1</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
<td>....</td>
<td>....</td>
</tr>
<tr>
<td>19</td>
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<td>170</td>
<td>60.7</td>
<td>57.3</td>
</tr>
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<td>20</td>
<td>No.20</td>
<td>81</td>
<td>51.4</td>
<td>58.5</td>
</tr>
<tr>
<td>21</td>
<td>No.21</td>
<td>90</td>
<td>66.5</td>
<td>66.7</td>
</tr>
<tr>
<td>22</td>
<td>No.22</td>
<td>144</td>
<td>67.7</td>
<td>59.03</td>
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<td>23</td>
<td>No.23</td>
<td>192</td>
<td>51</td>
<td>66.84</td>
</tr>
<tr>
<td>24</td>
<td>No.24</td>
<td>167</td>
<td>63.8</td>
<td>53.89</td>
</tr>
<tr>
<td>25</td>
<td>No.25</td>
<td>101</td>
<td>52.7</td>
<td>63.11</td>
</tr>
</tbody>
</table>

Table 2: Total words, readability scores and lexical density of each student
IV. FINDINGS AND DISCUSSIONS

The totals of words: 81-192 words, 3 works: under 100 words.

Readability scores: 51 to 79,1

The largest number of words (192 words) - lowest score of readability (51).

5/25 works (20%): readability sore 70-80 => Fairly easy
10/25 works (40%): readability sore 60-70 => Standard
5/25 works (40%): readability sore 50-60 => Fairly hard
IV. FINDINGS AND DISCUSSIONS

2. Discussion

<table>
<thead>
<tr>
<th>Groups</th>
<th>Readability</th>
<th>Lexical density</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>51-59,2</td>
<td>52,9-66,84</td>
</tr>
<tr>
<td>2</td>
<td>60,7-68,2</td>
<td>56-66,7</td>
</tr>
<tr>
<td>3</td>
<td>70,7-79,1</td>
<td>53,6-68,5</td>
</tr>
</tbody>
</table>

Table 3. Lexical density range of each student group divided according to readability scores
IV. FINDINGS AND DISCUSSIONS

• the readability score and the lexical density are not really in a corresponding relationship
• Lexical density can be varied in each range of readability score
• total number of words, it does not means an article can get higher lexical density and readability scores
V. CONCLUSION

1. Conclusion
• Calculated lexical density and readability of the subject’s written tasks with the help of some available computing programs
  ⇒ Most of the students only reach an average level.
  ⇒ Students need more training to enhance writing competence as well as using vocabulary.
V. CONCLUSION

2. Limitation and recommendation for further study

A, Limitation

- Lexical density and readability: only about quantity
- Incorrectly spelled words and grammar mistakes are not concerned
- Time, participants, and materials
V. CONCLUSION

B. Recommendation for further study
- two parameters of written tasks and spoken tasks
- Compare with other groups of participants
- Increase in size of the study
References

References