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Readability Analysis of College Student's Written Outputs using Grammarly Premium and Flesch Kincaide Tools

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Abstract. This descriptive study determined the Readability Analysis of College Student's Written Outputs using Grammarly Premium and Flesch Kincaide Tools for the First Semester of Academic Year 2020-2021. This involved the documentary analysis of the essays of the 290 freshmen students enrolled in six courses in Polytechnic University of the Philippines-Ragay, Camarines Sur Branch. It revealed that using the said two programs both revealed that the writing ability of the participants are not within the expected level of a university student, but for Grades 8 to 11 only; thus, it is recommended that Senior High School English teachers should use innovative strategies in teaching writing academic and non-academic texts. The content and language editing strategies to hone the student's writing composition competency can be measured by appropriate college admission tests intended for writing readability assessment only.

1. Introduction

Language defines humanity, and literacy defines civilization, illiteracy, problems, or difficulties in acquiring reading, writing, and speaking skills that have become prevalent in our technological society [1]. Since language serves as the core of communication, understanding it across all levels is vital for communication. Effective language teaching practices, especially in the Philippines, where 21.7 million students from elementary to college levels are expected to possess Filipino and English language [2], [3].

Fostering the college students' writing skills, especially in English as a second language, exhibits pedagogical implications since the Filipino students tend to prefer more to write their ideas than speak it since they are competent bilinguals [4]. However, their writing often replete with grammatical errors, less familiarity with unique words and mechanics of writing formal essays, and their limited vocabulary, making their written outputs such as essays less comprehensive, lack of depth of ideas, and no progression of presentation. In some instances, Filipino ESL learners often encountered difficulty in speaking since their vocabulary and natural set of grammar resulted in incoherency of their thoughts [5]. The said manifestation prevails especially among the College Freshmen students despite the addition of two years of Senior High School subjects in the primary education curriculum in the Philippines [6]. Thus, the content knowledge, elaboration, and vocabulary of the college freshmen students fail to reach within the levels of writing readability, thereby the text production process, the school writing experience, and confidence in writing educational materials further deteriorate the quality of written outputs of students [7], [8]. Therefore, as premised by the findings of [9] that the student who is having the inability to think words with similar meanings and associate them with obscure words should be improved in order for them to overcome the issue of low



vocabulary development through the use of continuous language learning and ESL acquisition through exposures such as writing essays.

Students' writing readability is often associated with various factors like teachers failing to inculcate them to understand their textbooks [10] before, during, and after reading the selections [11]. Moreover, some references are not appropriate to their levels [12]. Also, most females became more committed to doing their assignments and examinations than males as they spend more time studying at home. Thus their writing readability is often better than their counterparts since their linguistic and comprehension abilities are well-practiced [13]

To improve the writing readability levels among students, teachers can include giving writing assignments to improve the student's clarity and effectiveness in writing sentences [14], use multimedia blurb and narrative reading [15], and use Artificial Intelligence Chatbot to improve their grammar skills as well [16]. Likewise, [17] used Gunning Fog, Flesch Reading Ease, Coleman-Liau Index, Smog Index, Flesch-Kincaid Grade Level, and Atesman Reading Ease Formula as standard comparison of the English to local language readability tests. Also, teachers must use positive learning experiences to improve and support students' writing skills, identities, and habits [18]. Thus, understanding the implication of grit among students improves their performance and their dispositional and motivational styles of learning and writing for better academic engagements [19]; and academic performance in other subjects well.

2. Methodology

This study applies the purposive sampling technique as it covers only the total enumeration of Freshmen Students of Polytechnic University of the Philippines, Ragay, Camarines Sur Branch. Documentary analysis of essays of five courses consisted of Bachelor of Elementary Education students (n=45), Bachelor of Secondary Education major in English (n=48), Bachelor of Office Administration student (n=47), Bachelor of Business Administration students majors in Marketing Management (n=55) and Human Resource Development (n=50) and Bachelor of Office Information (n=45) students. This study ranges from 19 to 25 years old, and 95% were graduates of Senior High School. This study was conducted at the start of the First Semester of Academic Year 2020-2021.

The objective of this study is to identify the profile of student-written outputs as to Number of Words, Sentence per Paragraph, Words Per Sentence, Characters per word, and Passive Sentences and identify its common writing issues using (1) Flesch Kincaide Tools (sentence per paragraph, words per paragraph, characters per word, passive sentences, Flesch Reading Ease and Flesch-Kincaide Grade Level) and (2) Grammarly premium (writing score, readability score, reading time, speaking time, correctness). For the documentary analysis of the written outputs of the students, the researchers gave them an essay at the start of their opening of classes wherein they were asked to write a five-hundred words essay to answer the topic "What motivates you to take your course and how the university can help you achieve your goals in life?" Results of readability of written texts were interpreted using the following scale:

Table 1. Flesch-Kincaid Grade (Readability) test level

Scale	Descriptive Rating
90-100	An average of 11-year-old students can understand it
60-70	A 13-15-year-old student can easily understand it
0-30	University students can understand it

In using the Flesch Reading Ease result of the essays of the 290 college freshmen students involved in this study, the text's level of readability is determined by computing the words filled in correctly and dividing it by the number of words detected in the test, then multiplying it to 100%. Reflected in Table 1 that the scores of between 40% - 60% indicate that students might need guidance in reading. Scores above 60% indicate that the essay is easy to read, while scores below 40% indicate that it is too difficult to read and understand[17].

Table 2. Grammarly Premium Readability Scores

Scale	Descriptive Rating
81-90	It can be easily understood by 6 th Grade
71-80	It can be easily understood by 7 th Grade
61-70	It can be easily understood by 8 th Grade
51-60	It can be easily understood by 9 th Grade
41-50	It can be easily understood by 10 th Grade
31-40	An 11 th Grade can easily understand it
0-30	A person with a college education can easily understand it.

The Readability Scores in Grammarly Premium follow the same concept as the Flesch Kincaide tools. However, the program specified the particular grade level or age of an individual who can understand written outputs. However, it can also be associated with the vocabulary and capability to write long passages wherein the level of their readability scores determined the level of their writing as to what grade level their writing should correspond to. Thus, this study will explore whether the participants' writing level falls within 0 to 30, both in Grammarly and in Flesch Kincaide. The researchers used descriptive statistics to analyze their written outputs errors, including means of the Flesch Kincaide Reading Ease and Flesch Kincaide Grade Level and the Grammarly Score and Reading Ease. To avoid bias and preserve the sections' integrity, the researcher coded the sections into letters A to F.

3. Result and Discussion

Table 3 presents the Profile of the Student's Written Outputs.

Table 3. The Profile of Student's Written Outputs

Course	Number of Words	Sentence per Paragraph	Words Per Sentence	Characters per word	Passive Sentences
A Mean	520.00	6.56	20.51	4.28	0.00
B Mean	260.39	5.64	24.19	4.96	1.61
C Mean	444.76	5.22	23.91	34.58	1.18
D Mean	450.62	5.13	21.56	28.86	0.81
E Mean	463.62	5.13	23.45	28.88	0.95
F Mean	239.86	6.68	26.96	4.86	1.29

As presented in Table 3, the majority of the courses were able to complete their essays within less than 500 words except for Course A, and with 5 to 6 average number of a sentence per paragraph, with 20 to 27 words per sentence and with 4 to 29 characters per word, and with 0 to 2 passive sentences. Therefore, it can be deduced that their writing skills are varied; hence, their written outputs might reflect issues that need to be closely studied so that pedagogical and instructional adjustments can be made to eliminate the problems and improve their writing skills. With this, the researcher can safely attest that there is a need to conduct elaborate and innovative teaching academic writing strategies among first-year college students, especially in integrating written outputs as part of assessment tasks. As supported by the study of [7], students can improve their academic writing using their prior knowledge on a particular topic, more practice, and exposure to writing essays. Thus, teachers must elaborate on the use of high engagement in the writing process to improve their writing skills.

Table 4. The Flesch-Kincaid Grade Level Result of the Essay of the Students

Course	Flesch Kincaide Reading Ease	Flesch Kincaide Grade Level
A Mean	66.75	9.07
B Mean	45.63	12.89
C Mean	49.93	12.12
D Mean	54.36	10.88
E Mean	50.31	11.95
F Mean	46.34	13.96

The readability of the participants' written text using the Flesch-Kincaid Grade Level was automatically determined using the Spelling and Review options command of Microsoft Office Word. The results were categorized into scores between 90% - 100% indicate that an average 11-year-old student can easily understand the essay. Student scores within 60-70% indicate that 13-15-year-old students can easily understand the essay, while a university student can best understand scores within 0-30%. The results in Table 4 revealed that from among the 290 students enrolled in 6 courses in the university branch where the researchers are teaching, the Reading Ease of the student's essays was within 45 to 67%, which means their writing ability not expected of a university student since they could write and submit an essay that is within the understanding of 13-15-year-old students only. Thus this means that they were able to craft and submit an essay with a writing level within Grades 9 to 11 only and not for college level. With this, the students' attitudes towards English should be improved to communicate easily using the second language required in their academic subjects and exchange ideas proficiently [21] as expected of a college student and soon to be a member of the industry.

Table 5. The Flesch-Kincaid Grade Level Result of the Essay of the Students

Course	Grammarly Score	Readability Score	Reading Time	Speaking Time	Correctness
A Mean	43.86	69.86	2.20	4.60	38.62
B Mean	50.04	47.25	29.21	8.83	22.50
C Mean	37.71	54.12	1.74	56.53	4.34
D Mean	41.90	56.19	6.78	32.63	22.78
E Mean	41.62	61.52	1.99	27.82	18.35
F Mean	46.64	45.79	33.18	8.21	22.10

Table 5 presents the result of the readability analysis and other aspects of grammar checking of written outputs that can be tested using the Grammarly Premium owned by the researchers. The 290 college freshmen students wrote the essays of the Polytechnic University of the Philippines-Ragay. Camarines Sur Branch was individually run by the researchers and analyzed each progress writing report performed by the said online grammar checker application. Table 5 shows that among the freshmen students from six different courses involved in this study differs significantly. As revealed by their average mean, their Grammarly scores range from 37 to 50, which was below the standard writing scores of the said grammar checker, their readability scores range from 45 to 70, which means their writing levels are within 8th to 11th Grades only and not for college students level. Hence, it implies that despite the addition of 2 years in Senior High School in the Basic Education Curriculum in the Philippines, students writing skills are not comparable and not within the grades level they are enrolled in. for instance, the writing levels of the students are within the levels of Junior to Senior High Schools and not for the College level where they are currently enrolled into. Their written texts are so incoherent and are expected if a bit unclear clarity level. A little bit bland in terms of engaging, and their delivery is having severe issues. With such a result, fluency, vocabulary, and grammar are imperative to develop student's writing skills. Therefore, language teachers in the Philippines, especially those teaching English and other subjects taught under English medium, should carefully consider the integration of essays in their assessment performance and advocate the use of various

teaching strategies to improve the vocabulary and grammar enrichment process among the learners before they reach the university level.

4. Conclusion

Based on the study's findings, the majority of the students' written outputs did not reach the writing readability levels of the individuals within the college level. Thus, this study showed areas for improvement in instruction in English subjects and other subjects taught using English as the medium of instruction. With Flesch Kincaide Reading Ease tools that can be instantly integrated with the Microsoft Office Word and Ubuntu programs, students can understand the level of their writing readability and their vocabulary and grammar competence. Likewise, suppose teachers can avail of Grammarly premium application. In that case, other aspects of student's writing errors can be analyzed as to the correctness of punctuation, tones, clarity, engagement, and delivery of words. It is also urged that drill activities, reading, and writing tasks should also be integrated into the language assessment, not just the identification types of test, so that the vocabulary and coherence of students' thoughts among elementary to senior high school levels can be improved. This study's implication to pedagogical practices such as (1) analyze the Philippines's performance in the Programme for International Student Assessment wherein the country performed poorly (340) in reading that is associated to the performance in Mathematics and Science that scored 353 and 357 and were among the lowest ranks in the participating countries, and (2) integration of various innovative teaching strategies as alternative ways to improve the learning of English as the Second Language to improve student's vocabulary, speaking and writing skills, coherence of thoughts, clarity of written performance and grammar that will eventually bring positive impacts for student's readiness in higher grade level and future employment.

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