Research Article

The Syntactic Analysis Of The Written Outputs Of The Engineering Students Of Camarines Sur Polytechnic Colleges

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Abstract:

The study investigated the Syntactic Analysis of the Written Outputs of Engineering Students of Camarines Sur Polytechnic Colleges (CSPC) during the Academic Year 2023–2024. A total of 165 engineering student respondents participated in four selected classes. The research utilized a descriptive-evaluative-correlational method and employed tools such as weighted mean, frequency count, Kendall Coefficient of Concordance (W), Chi-square, and Spearman Rank Order Coefficients to determine the most common syntactic errors and assess the student's application of syntax in different types of writing, including academic, technical, legal, creative, marketing, and social media content. Results revealed that word order errors, misplaced modifiers, and ambiguous pronoun references were among the most frequent syntactic issues. Findings further showed that students generally demonstrated an evident level of syntax application, with academic writing receiving the highest rating. Significant agreement in ranking was observed only in subject-verb agreement, run-on sentences, fragment sentences, and double negatives. Based on the findings, policy recommendations were proposed, including targeted grammar instruction, interdisciplinary writing workshops, syntax-focused tools, and enhanced institutional support. The study also suggested areas for further research, such as examining error patterns over time and evaluating the impact of various teaching and feedback methods on students' syntactic proficiency.

Keywords: Syntax, Syntactic Analysis, Engineering Students, Written Outputs, Policy Recommendations.

1. Introduction

Language is a powerful tool, and in English, the order of words—or syntax—plays a crucial role in meaning-making. Even a slight rearrangement of words can alter the message of a sentence entirely. Each language follows unique syntactic rules, and although these can be creatively broken by skilled writers, a strong grasp of syntax is essential for clear, effective, and nuanced communication.

Globally, linguistic proficiency is recognized as a fundamental component of educational and professional success. International benchmarks and communication standards emphasize the role of language in promoting mutual understanding and collaboration. At the national level, the importance of language education is enshrined in Article XIV, Section 1 of the 1987 Philippine Constitution, which states, "The State shall protect and promote the right of all citizens to quality education at all levels and shall take appropriate steps to make such education accessible to all" (Official Gazette, n.d.).

Complementing this, Executive Order No. 210, s. 2003 underscores the government's commitment to reinforcing English as a primary medium of instruction, especially in higher education, to equip students with the language skills necessary for global engagement.

In support of these mandates, Camarines Sur Polytechnic Colleges (CSPC) actively works to enhance students' language proficiency. Despite consistent success in licensure examinations, many students continue to struggle with applying proper English syntax in academic, technical, and professional writing. This highlights a critical gap in linguistic competence that needs to be addressed. Previous research at CSPC has shown that students tend to rely heavily on code-switching, especially tag-switching and intra-sentential switching, to navigate gaps in vocabulary and confidence during English communication (Agna et al., 2022). Another study found that public speaking anxiety also significantly hampers students' oral communication skills, which was effectively addressed through a teacher-designed intervention called *Popsispeak*—demonstrating the potential of targeted, context-based language instruction (Pontillas, 2020).

Motivated by these observations and experiences, the present study investigates the written outputs of engineering students, focusing on their syntactic accuracy and practical application of syntax across various writing contexts. The aim is to identify common syntactic errors, assess students' ability to use correct sentence structures and recommend institutional policies to improve English language instruction.

Specifically, this study aims to identify the most common syntactic errors in the written outputs of engineering students, including issues in subject-verb agreement, run-on and fragment sentences, misplaced modifiers, lack of parallelism, double negatives, pronoun misuse, incorrect verb tenses, ambiguous pronoun references, and word order errors. It also examines the level of agreement

among respondents on the rank order of these errors. Furthermore, the study investigates the extent to which students correctly apply syntax across various writing contexts, such as academic, creative, technical, legal, marketing, and social media outputs, as well as the level of agreement among different respondent groups regarding these applications. Finally, the study seeks to propose policy recommendations based on the findings.

2.1 Research Design

This study employed a descriptive-evaluative-correlational research design. The primary tool for data collection was a survey questionnaire. The descriptive design was used to outline and examine the common syntactic errors made by Engineering students in their written outputs. The evaluative aspect assessed the extent of syntactic application in various types of writing. At the same time, the correlational design sought to identify relationships between students' syntactic errors and their level of writing proficiency. The research combined both quantitative and qualitative methods, where the quantitative aspect focused on gathering numerical data through the survey, and the qualitative component involved interviews to gain deeper insights into students' experiences and challenges in writing. Purposive sampling was used to select the respondents, and extensive library research helped inform the preparation of the assessment tools.

2.2 Participants

The participants of the study were 165 Engineering students from Camarines Sur Polytechnic Colleges (CSPC), specifically those enrolled in the Entrepreneurial Mind subject during the First Semester of the Academic Year 2023-2024. The respondents were selected using a total enumeration method, where all students enrolled in the subject were included in the study. These students were involved in both the survey and brief interviews to explore their experiences with writing and syntactic challenges.

2.3 Data Gathering Tools

The primary instrument for data collection was a researcher-made questionnaire designed to assess the Syntactic Analysis of the Written Outputs of Engineering students. The questionnaire was divided into two sections. Part I focused on identifying the common syntactic errors in students' written work, including errors such as subject-verb agreement, run-on sentences, and misplaced modifiers, among others. Part II assessed the level of application of syntax across various writing types, including academic writing, technical writing, and social media content.

The questionnaire underwent a rigorous validation process through consultations with the researcher's thesis adviser and the Dean of the School of Graduate Studies. The instrument also went through stages of review, feedback from experts, and a dry run before final distribution. In addition to the survey, the study used interviews to gather qualitative data, and Class Presidents assisted in distributing and collecting the questionnaires.

2.4 Ethical Considerations

Ethical guidelines were adhered to throughout the research process. First, the researcher sought permission from the College President to conduct the study, ensuring institutional approval for data collection. Additionally, the researcher followed all ethical protocols when dealing with participants. Informed consent was obtained from each participant, clearly outlining the purpose of the study, the voluntary nature of participation, and the confidentiality of responses.

Participants were informed that their identities and responses would remain anonymous, and they were given the option to withdraw from the study at any time without penalty. The researcher emphasized the confidentiality and integrity of the data and assured the participants that their answers would be used solely for academic purposes. The study respected the participants' autonomy and ensured that ethical standards of transparency and respect for privacy were maintained.

3. Results and Discussions

3.1 Extent of Common Syntactic Errors Made by the Respondents

The findings revealed that syntactic errors were evident in the engineering students' written outputs, from highest to lowest were: Word Order Errors (3.19), Misplaced Modifiers (3.12), Ambiguous Pronoun References (3.10), Run-on Sentences (3.07), Incorrect Verb Tenses (3.04), Misuse of Pronouns (3.02), Fragment Sentences (3.01), Double Negatives (2.93), Subject-Verb Agreement Errors (2.91) and Lack of Parallelism (2.88). Thus, the extent of common syntactic errors among the engineering students of Camarines Sur Polytechnic Colleges is "Evident" across various categories, with a notable emphasis on Word Order Errors and Misplaced Modifiers. Therefore, targeted instructional strategies focusing on these areas are recommended to enhance students' writing clarity and effectiveness. As a result, addressing these common syntactic errors can lead to improved written communication skills, which are crucial for academic success and professional development.

This is supported by the study of Johnson and Lee (2021), which investigated engineering students' syntactic competence in academic writing and found that errors in word order and modifier placement were the most prevalent, aligning closely with the current study's findings. Their research revealed that students frequently struggle with sentence structure, particularly in technical

writing, and often fail to use complex grammatical structures correctly. The study suggested that a more focused approach to teaching syntax in engineering programs could help alleviate these issues and improve students' writing skills.

Furthermore, this is supported by the study conducted by Singh (2022), which explored the syntactic errors in technical reports written by engineering students. Singh's research highlighted the significant challenges students face with sentence fragments, subject-verb agreement, and improper modifier use, particularly when writing complex technical content. The study concluded that the lack of systematic language instruction in engineering curricula contributes to these errors. Singh recommended that engineering programs should incorporate explicit language training to address these syntactic difficulties and improve students' writing proficiency in technical contexts.

3.2 Test of the Significant Agreement on the rank orders of the common Syntactic Errors

On the Test of the Significant Agreement on the rank orders of the common Syntactic Errors, the computed Coefficient of Concordance W and its corresponding X2 value, resulted to: Subject-Verb Agreement Errors, 0.441 and 15.886 ($p < 0.005$); Run-on Sentences, 0.673 and 24.218 ($p < 0.001$); Fragment Sentences, 0.327 and 11.782 ($p < 0.01$); Misplaced Modifiers, 0.169 and 6.109 ($p > 0.05$); Lack of Parallelism, 0.099 and 3.573 ($p > 0.05$); Double Negatives, 0.348 and 12.546 ($p < 0.01$); Misuse of Pronouns, 0.091 and 3.286 ($p > 0.05$); Incorrect Verb Tenses, 0.129 and 4.650 ($p > 0.05$); Ambiguous Pronoun References, 0.195 and 7.000 ($p > 0.05$); Word Order Errors, 0.175 and 6.300 ($p > 0.05$). Thus, the null hypothesis was accepted except on subject-verb agreement, Run-on Sentences, Fragment Sentences, and Double Negatives.

In summary, while there is significant agreement among evaluators regarding the prevalence of Subject-Verb Agreement, Run-on Sentences, Fragment Sentences, and Double Negatives, other areas show less consensus. This indicates that while some syntactic errors are clearly recognized and consistently ranked, others may require further attention in terms of instructional focus or evaluative clarity. These findings suggest potential areas for targeted instructional interventions aimed at improving consistency in student writing and enhancing the evaluators' alignment in assessing these errors. This implication aligns with the findings of Brown and Smith (2021), who discovered that syntactic consistency was a major challenge in evaluating student writing, especially in relation to subject-verb agreement and sentence fragments. Their study found that while evaluators generally agreed on the severity of certain errors, there was more variability in assessing errors like word order and pronoun misuse, suggesting a need for more precise evaluation frameworks.

Additionally, this is supported by Nguyen and Patel (2022), who emphasized the role of structured intervention strategies in addressing common syntactic errors. Their research highlighted the positive impact of targeted grammar instruction on reducing subject-verb agreement and run-on sentence errors. Nguyen and Patel found that focused pedagogical approaches could help align evaluators' perceptions and improve students' writing accuracy, particularly in technical and academic writing contexts.

3.3 Extent of the Level of Application of Syntax of the Respondents in their Written Outputs

The extent of the application of syntax for engineering students in their written outputs across various types of writing was generally rated as evident. Arranged in descending order were: Academic Writing, 3.35; Technical Writing, 3.22; Legal Documents, 3.09; Social Media & Online Content, 3.06; Creative Writing, 3.05; and Marketing & Advertising, 2.97. Therefore, it can be observed that the level of syntax application in the respondents' written outputs is Evident (E), with an average mean of 3.12. The findings from this study emphasize the importance of syntax application across various forms of writing. As students continue to develop their writing skills, it becomes imperative for educational institutions to recognize the role of syntax in all writing contexts and to address any gaps in instruction that may hinder students' ability to apply these principles consistently. Future research could explore how targeted interventions in these lower-scoring areas improve overall syntactical proficiency and contribute positively to students' writing competence.

It can be observed that the level of syntax application in the respondents' written outputs is Evident (E), with an average mean of 3.12. This suggests that students across various programs have a moderate level of proficiency in applying syntax, which significantly enhances the clarity and effectiveness of their writing. However, there is still room for improvement, particularly in contexts like Creative Writing and Marketing & Advertising, where the application of syntax may be more challenging due to the less rigid structures of these genres. This implication is supported by studies of O'Neill and Russell (2019), who highlighted the importance of clear and structured syntax in academic success, and Sahu et al. (2020), who emphasized the role of consistent syntactical application across different forms of writing. As students continue to engage with various writing tasks, ongoing practice and instruction in syntax application will be crucial to their overall writing development.

3.4 Test of Significant Agreement on the Extent of the Level of Application of Syntax of the Respondents in their Written Outputs

On the Test of Significant Agreement on the Extent of the Level of Application of Syntax of the Engineering Students of CSPC in their Written Outputs, the computed Coefficient of Concordance W and its corresponding X² resulted to: Academic Writing, 0.161 and 5.782 ($p > 0.05$); Creative Writing, 0.249 and 8.973 ($p > 0.05$); Technical Writing, 0.206 and 7.418 ($p > 0.05$); Legal Documents,

0.084 and 3.041 (p > 0.05); Marketing & Advertising, 0.253 and 9.095 (p > 0.05); and Social Media & Online Content, 0.2447 and 8.809 (p > 0.05). Thus, the null hypothesis was accepted.

This indicates that there is no statistically significant agreement among evaluators on the extent of syntax application in these writing contexts. Consequently, the researcher concludes that while there is some level of concordance, it is not significant. This suggests that students' application of syntax may vary across different writing types, highlighting the need for further instructional focus to improve consistency in syntax application.

This relates to the research by Eriksson and Sjöberg (2016), which revealed significant variability in how writing was evaluated across different genres, highlighting a lack of significant agreement among evaluators. The findings, which show no statistically significant agreement on syntax application across various writing contexts, align with Eriksson and Sjöberg's observation of inconsistent writing quality assessments depending on genre. Both studies underscore the need for more clearly defined evaluation criteria and targeted instructional strategies to enhance consistency and improve overall writing proficiency. This suggests that to address the observed variability, developing precise guidelines and better training for evaluators is crucial.

Additionally, Williams (2020) conducted a thesis that explored the relationship between syntax application and writing types in engineering students' academic and technical outputs. Williams' study also showed that evaluators did not reach significant agreement on how students applied syntax across different writing tasks, similar to the present study's results. Williams concluded that the lack of clear instructional frameworks for syntax application in various genres contributed to this variability, recommending more structured and genre-specific language instruction to improve students' syntactic accuracy and consistency.

3.5 Proposed Policy Recommendations

The proposed recommendations were crafted to enhance the writing proficiency of engineering students at Camarines Sur Polytechnic Colleges (CSPC). These were grounded on the findings of the study, particularly highlighting the recurring syntactic issues observed in students' written outputs. These recommendations aim to address the evident gaps in syntax mastery and promote collaborative efforts across departments. The following measures are therefore recommended: a) Implement targeted syntax instruction and consistent practice sessions by writing professors to address common syntactic errors among engineering students, b) Design a focused curriculum by English instructors and curriculum developers that emphasizes key areas such as subject-verb agreement, run-on sentences, double negatives, and ambiguous pronoun references, c) Encourage instructors across various disciplines to promote the consistent application of syntax rules in all forms of student writing, thus reinforcing writing proficiency in both academic and technical contexts, d) Foster interdisciplinary collaboration among faculty to underscore the importance of syntactic accuracy as a fundamental component of effective communication, and e) Institutionalize the proposed policy recommendations to ensure structured and sustained implementation that will improve students' written communication skills across the college.

4. Conclusion

Syntactic Analysis of the Written Outputs of the Engineering Students of Camarines Sur Polytechnic Colleges during the Academic Year 2023–2024 revealed valuable insights into the students' grasp of English syntactic structures. The study found that, overall, the respondents demonstrated an evident application of syntax, particularly in formal academic writing tasks. This suggests that the students possess a functional understanding of sentence structure and grammatical conventions when working within clearly defined formats. However, despite this general competency, persistent and recurring errors, notably in word order, misplaced modifiers, and ambiguous pronoun references, were frequently observed. These types of errors compromise the clarity, coherence, and professional tone of written communication, making it difficult for readers to grasp the intended message fully.

A critical factor influencing these outcomes is the academic orientation and nature of the engineering program. Engineering students are typically immersed in highly technical and numerical coursework, which prioritizes logical reasoning, mathematical computations, and problem-solving over the development of writing and linguistic expression. As a result, these students encounter fewer opportunities to practice structured writing, especially in genres that require more expressive or rhetorical language skills. This lack of exposure is reflected in their performance, particularly in writing types that demand creativity, persuasion, and nuanced syntax, such as creative writing, marketing content, and social media outputs, where more fluid, stylistically complex sentences often replace rigid syntactic structures. In this context, the findings suggest that the student's struggles are not due to a complete lack of grammatical knowledge but rather too limited application and reinforcement of those skills in their academic routine.

In terms of statistical analysis, the study revealed significant agreement among evaluators when identifying certain common syntactic errors, specifically subject-verb agreement, run-on sentences, fragment sentences, and double negatives. This consistency highlights the prevalence and recognizability of these particular issues in the students' writing. Conversely, for other error categories, such as misplaced modifiers and ambiguous pronouns, evaluator agreement was less robust, indicating a possible lack of shared understanding or clarity in evaluative criteria. Furthermore, the application of syntax across various writing types also showed no statistically significant agreement, suggesting that students apply syntactic rules unevenly depending on the writing context and that assessors may interpret these applications differently.

These insights underscore the urgent need for institutional and instructional interventions. The study recommends the incorporation of targeted grammar and syntax instruction into the curriculum, along with interdisciplinary writing activities that expose students to a variety of writing styles and syntactic demands. Writing tasks should also be integrated even within technical subjects, helping bridge the gap between content knowledge and language skills. Additionally, access to grammar-checking tools, peer review systems, and syntax-focused modules could help students refine their written outputs. Ensuring that faculty members receive training in syntax instruction and standardized evaluation methods will also contribute to a more unified and effective teaching and assessment approach.

Ultimately, the findings of this study highlight a broader challenge faced by many students in technical fields: the imbalance between technical training and language development. Addressing this gap is crucial—not only for academic success but also for professional preparedness. By embedding structured, meaningful writing opportunities within the engineering curriculum, institutions can help students develop both their analytical and linguistic competencies, ensuring they are well-equipped to communicate clearly, accurately, and persuasively in diverse professional environments.

4.1 Short Acknowledgment

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