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AI-assisted linguistic analysis of grammatical errors in EFL Essay Writing: Implications for AI-enhanced language learning

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ABSTRACT

This study investigates the use of artificial intelligence-oriented linguistic analysis to identify and interpret grammatical errors in essays written by sophomore students enrolled in an English as a Foreign Language (EFL) program. The research adopts a qualitative descriptive design in which student essays are systematically analyzed using a structured taxonomy of grammatical errors. The analysis focuses on noun groups, verb-verb constructions, prepositional usage, and sentence structure patterns. The findings reveal recurring grammatical difficulties, particularly in subject-verb agreement, omission of plural markers, incorrect verb tense formation, misuse of auxiliary verbs, and inappropriate preposition selection. From an artificial intelligence perspective, these error patterns highlight opportunities for implementing automated grammar detection, intelligent feedback mechanisms, and adaptive learning systems that support students' writing development. The study demonstrates how AI-driven linguistic analysis can assist instructors in diagnosing learner needs more efficiently and in designing targeted instructional interventions. Additionally, the results emphasize the role of AI-based writing evaluation tools in promoting personalized learning, improving grammatical accuracy, and enhancing students' academic writing performance. By linking traditional error analysis with emerging AI applications in language education, this study contributes to the growing body of research on AI-enhanced teaching and learning. The findings provide practical implications for integrating intelligent tutoring systems, automated writing evaluation platforms, and data-driven feedback models in EFL classrooms.

KEYWORDS: AI-assisted linguistic analysis, EFL writing, grammar error detection, intelligent feedback, AI in language teaching; automated writing evaluation, English language learning, educational AI, computational linguistics

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1. Introduction

University students are increasingly required to use English for academic communication, both orally and in writing, particularly in technology-enhanced learning environments (Calanoga, 2019). With the growing integration of artificial intelligence (AI) tools in education, adherence to grammatical conventions has become essential not only for clarity of communication but also for enabling accurate automated linguistic analysis and feedback (Afdaleni, 2018). When learners produce texts that do not follow grammatical rules, communication breakdowns may occur, and AI-based systems may struggle to provide reliable feedback or evaluation (Patoc & Lasaten, 2019). Grammar therefore functions not only as a framework for organizing words but also as a foundation for effective human-machine interaction in AI-supported language learning environments (Cam & Tran, 2017).

Second language (L2) learners often perceive writing, particularly academic writing, as the most challenging language skill (Calanoga & Arellano-Tamayo, 2019). Writing requires linguistic competence, awareness of genre conventions, and the ability to organize ideas coherently, all of which are interconnected with cognitive and sociocultural knowledge (Burns & Siegel, 2018). These challenges have motivated the adoption of AI-driven writing assistants, automated grammar checkers, and intelligent tutoring systems that support learners during the writing process (Alouf, et al., 2024; Hussein et al., 2024). Nevertheless, grammar remains a major difficulty for many students and instructors, particularly in EFL contexts, including Saudi higher education settings (Catabay, 2019; Hatamleh et al., 2025).

Essay writing is a common academic task at the university level and is increasingly supported by AI-based writing evaluation tools (Shariq, 2020). Students are expected to demonstrate academic writing competence, which plays a crucial role in assessment and knowledge construction (Aisyah & Rahmawati, 2019). AI-assisted platforms can help students plan ideas, select appropriate vocabulary, and refine grammatical structures, thereby improving clarity and coherence in academic writing (Albayinnah, 2020). These technologies also enable instructors to provide scalable, data-driven feedback that enhances students' writing development. Effective management of English structure, including appropriate word choice and grammatical accuracy, remains essential for successful academic writing (Shariq, 2020). Students must combine grammatical knowledge with critical thinking skills, rhetorical awareness, and argument development (Amoakohene, 2017). Despite the availability of AI-supported tools, many EFL learners continue to experience difficulties in avoiding repetition, constructing sentences, referencing ideas, and maintaining lexical and syntactic variety (Singh, Singh, Razak, & Ravinthar, 2017). Consequently, integrating AI-based linguistic analysis with traditional pedagogical approaches has become increasingly important.

The complexity of academic writing and the persistent occurrence of learner errors have encouraged researchers to examine error patterns using both conventional and AI-assisted error analysis methods (Wulandari & Harida, 2021). Writing errors may stem from multiple sources, including first-language interference, limited grammatical knowledge, and insufficient exposure to authentic language input. AI-based systems can help identify such patterns by analyzing large datasets of learner writing and generating adaptive feedback (Tasci & Aksu Ataç, 2018; Alkolaly et al., 2026). Because English grammatical rules differ from those of learners' native languages, AI-supported tools can provide targeted correction and explanations tailored to learner needs (Harrathi et al., 2024).

Distinguishing between mistakes and errors remains important in AI-assisted learning environments. Mistakes may be self-corrected, whereas errors reflect gaps in linguistic competence that require structured feedback and instructional support (Kampookaew, 2020). AI-driven writing systems can complement teacher feedback by providing immediate corrective suggestions, promoting self-regulated learning, and supporting peer and instructor-based correction strategies (Al-Sobhi, 2019; Khan et al., 2026). However, systematic errors often require pedagogical intervention informed by detailed linguistic analysis (Amiri & Puteh, 2017). Therefore, teachers and researchers must develop a strong understanding of error patterns to effectively integrate AI-based tools into language instruction (Khatter, 2019).

EFL students at all academic levels continue to experience grammatical difficulties that affect sentence construction and overall writing quality (Masluha, 2021). Previous research indicates that grammatical errors occur across different academic stages, highlighting the need for intelligent diagnostic approaches (Tlonaen, 2020). Rather than viewing errors solely as deficiencies, contemporary AI-supported learning frameworks

consider them valuable indicators for adaptive instruction and personalized feedback (Guibangguibang, 2020; Dangan & Cruz, 2021). AI technologies can analyze learner performance and recommend targeted learning activities based on identified weaknesses.

Various factors contribute to grammatical errors, including language transfer, intralingual interference, sociolinguistic context, instructional methods, and learner-related variables (Richards & Sampson, 1974). AI-based linguistic analysis offers new opportunities to detect these patterns automatically and support data-driven decision-making in language teaching. Considering the prevalence of grammatical errors in essay writing, this study applies an AI-oriented linguistic analysis to identify the types of grammatical errors produced by sophomore students in the English language program at King Khalid University. The study aims to determine the most frequent errors and discuss how AI-supported tools and intelligent feedback systems can enhance teaching and learning in academic writing contexts.

2. Literature Review

2.1 AI-Assisted Error Analysis (AI-EA)

Error Analysis (EA) has long been considered a central approach in second language (L2) learning, as it compares learners' production with target language norms to identify patterns of linguistic deviation (Kusumawardhani, 2018). Traditional EA focuses on examining incorrect forms produced by language learners and explaining the underlying causes of these deviations (Iamsu, 2014; Mardijono, 2015). Brown (2007) emphasizes that learner errors can be identified, categorized, and interpreted to reveal the internal linguistic system of learners. This perspective has led to increased interest in studying learner errors to improve teaching practices and learning outcomes (Mustafa, Kirana, & Bahri, 2017). From a pedagogical viewpoint, errors are viewed as valuable indicators that guide remedial instruction and language development (Okoro, 2017; Corder, 1967).

With the emergence of artificial intelligence (AI) in language education, EA has evolved into AI-assisted error analysis, which employs natural language processing (NLP), machine learning algorithms, and automated writing evaluation systems to detect, classify, and interpret learner errors. AI-based tools can analyze large corpora of learner writing, identify recurring grammatical patterns, and provide immediate feedback to support language development. According to Richards (2015), EA differs from simple error correction because it systematically studies error patterns across groups of learners. AI technologies extend this process by enabling large-scale linguistic analysis, adaptive feedback, and data-driven instructional decisions. Thus, AI-assisted EA supports teachers and learners by offering automated diagnostics, personalized recommendations, and continuous monitoring of learner progress.

2.2 Grammatical Errors in AI-Supported Linguistic Analysis

Grammar represents the structural system of language, including syntax, morphology, and semantic relationships, as well as the interaction of form, meaning, and usage (Hsu, 2013). Grammatical errors (GEs) affect linguistic accuracy, semantic interpretation, and communicative effectiveness (Setiyorini et al., 2020). In AI-supported environments, grammatical errors can be automatically identified using computational linguistic models that detect deviations in morphological patterns, syntactic structures, and lexical selection. These errors may be categorized into local errors, which affect specific linguistic elements, and global errors, which influence overall comprehension and discourse meaning.

Understanding the distinction between mistakes and errors remains essential in AI-based learning contexts. Errors typically reflect incomplete knowledge of linguistic rules, whereas mistakes represent performance slips that learners can self-correct (Hamilton, 2015). AI-driven writing systems can differentiate between these patterns by analyzing frequency, consistency, and contextual usage. Such systems provide targeted corrective feedback, helping learners refine grammatical knowledge and improve writing performance (Qamariah & Wahyuni, 2020; Yusnitasari & Suwartono, 2020). Furthermore, AI-powered platforms enable learners to receive immediate feedback and revise their writing iteratively, enhancing self-regulated learning and grammatical accuracy (Calanoga et al., 2019).

2.3 Sources and Causes of Errors in AI-Based Language Learning

Errors in L2 writing may arise from competence-related and performance-related factors (Corder, 1971;

Sompong, 2013). Competence errors include interlingual and intralingual transfer, whereas performance errors result from fatigue, stress, or processing limitations. AI-based linguistic analysis systems can automatically detect these error types by examining recurring patterns across learner texts. Additionally, errors can be categorized as local or global depending on their impact on meaning (Burt & Kiparsky, 1972; Alghazo & Alshraideh, 2020). Dulay (1982) proposed several EA taxonomies, including surface strategy taxonomy, linguistic category classification, comparison taxonomy, and communicative effect taxonomy. These frameworks are particularly useful in AI-driven linguistic analysis because they provide structured categories for automated classification. Modern AI tools rely on similar taxonomies to label grammatical errors and generate adaptive feedback (Abduh et al., 2021). Ho's taxonomy (as cited in Tlonaen, 2020) classifies grammatical errors into four major categories: prepositions, verb groups, noun groups, and sentence structure. These categories align well with AI-based automated writing evaluation systems, which typically detect errors in verb tense, subject-verb agreement, article usage, prepositions, and sentence organization.

Prepositional errors include omission, addition, and incorrect selection. Verb-group errors involve missing suffixes, incorrect participles, misuse after modal verbs, omission of auxiliary verbs, and incorrect word order. Noun-group errors include incorrect pluralization, misuse of determiners, and subject-verb disagreement (Agustin & Wulandari, 2022; Maros, Hua, & Salehuddin, 2017). Sentence-structure errors include run-on sentences, dangling modifiers, illogical constructions, fragments, and incorrect conjunctions (Fitrawati & Safitri, 2021; Tlonaen, 2020). AI-based linguistic analysis systems can automatically detect these patterns and provide corrective suggestions, making them valuable tools for enhancing teaching and learning in AI-supported EFL environments.

2.4 Previous Studies

Khumphee and Yodkamlue (2017) identified the most prevalent types of GE made by Thai EFL undergraduate students in their English essays, determine whether any of the errors were attributable to the students' native language of Thai, and offer some crucial tips for teaching English grammar. The 83 students' second-year English majors at Nakhon Ratchasima Rajabhat University who participated in this study were chosen using a purposive sample technique. Using a framework based on Richards' (1971) and Nangam's (2005) errors categories, they examined the essays of the participants. The findings revealed a total of 4,909 errors in 26 different categories of GA in the students' written work. In that order, verbs, prepositions, nouns, punctuation, and articles were the five most frequent forms of errors. Additionally, the students' L1 interference in the Thai language resulted in 1,560 out of 4,909 errors, which were divided into 14 types. The five most frequent errors were utilizing plural noun forms, omitting punctuation, structuring complicated phrases incorrectly, omitting certain sentence components, and using fragments.

Kampookaew (2020) the objective of this study was to evaluate the writings produced by Thai EFL students. In order to conduct the study, 58 essays totaling 24,445 words were written by 29 second-year students who were enrolled in an EAP writing course at a public university in Thailand. 1,199 errors were discovered during the analysis. The errors were divided into 10 types, and errors on prepositions, word classes, verbs, articles, and nouns made up 84.07% of all the faults detected. 49 subcategories were created by further dividing the ten types of faults in this study. The incorrect use of single and plural nouns, leaving off the article "the," and subject-verb disputes were the most often made grammatical mistakes by the Thai EFL students in this survey, according to this extensive and in-depth error categorization. Unsettlingly, the findings revealed that Thai EFL students still have difficulty using proper grammar in their writing. The concerning thing is that, even while these grammatical mistakes may not fully hide the meanings of students' work, their prevalence or presence can seriously impair it and keep it from being of a publishable standard.

Abduh et al. (2021) looked at grammar faults in students' writings and correction methods in higher education. This case study on EA revealed that the essays of five students, who made up the majority of the research participants, were utilized to represent the other students. The findings indicate that there were a variety of errors made by each participant in this study when they were writing their essays. More crucially, there are a variety of methods available for correcting students' GE, including peer correction working groups, instructor corrective feedback, and use of an online corpus database. Following their work with the online corpus, it is implied by these tactics that students become familiar with the correct and informal usage of

English. In addition, teachers might employ classmates as mentors for modifying the work of other students. When critiquing the work of other students, these two crucial techniques can serve as role models for how to teach students in a pedagogical and social approach.

Chitondo (2021) examined the GA that Rockview University student instructors made in their written assignments. It looked at how frequently errors were made and what might be done to enhance writing instruction in English. A total of 58 participants—50 students and eight language lecturers—participated in the study. Students and language instructors completed two surveys, and the results were examined. Data collection and analysis were both done via written assignments. Repetition errors, article errors, omission of words errors, prepositional errors, agreement errors, spelling errors, punctuation errors, and singular and plural errors were among the GA that were found. According to the findings, the most frequent type of GE was misspelled words. Next on the list were GA and errors in subject-verb agreement.

Fitrawati and Safitri (2021) discussed the GA produced in college essays by EFL students as well as the instructional consequences that resulted from such errors. 30 second-year students who signed up for an essay writing class are the participants in this descriptive study. The pupils' written essays—which totaled thirty—were examined for GE. 368 GE were discovered in the pupils' writings, according to the results. The majority of them (48%) dealt with verb tenses. If teachers don't assist types in understanding the distinction between required and unneeded clauses and parts of speech, they'll continue to make errors in their increasingly complex writing.

Agustin and Wulandari (2022) explained the GE in the essays written by UNISKA Kediri students in the English Department. The research study falls under the qualitative study category. In the study, 14 samples of English essays produced by UNISKA students were examined. The triangulation approach is being used to categorize the many error types committed by students and discover prevalent faults in written student essays. According to the study's findings, the writings of the pupils contained seven different types of GE. 19.64% of these errors involved the articles (a, an, and the); 13.68% of the errors were in the punctuation, 11.97% in the plural or singular, 5.13% in the tenses, 0.85% in the to +V1, and 0.85% in the pronouns. These errors highlight the difficulties students have when writing essays. The article a/an/the has the highest percentage of GA, at 19.66%. Researchers also discovered that pupils had trouble composing their essays. That revealed the types of survey responses. The study found that the students have trouble choosing and developing topics; writing well-structured sentences and paragraphs; using correct syntax; using a wide range of words.

3. Framework

The taxonomy of grammatical errors adapted from Ho (2005) was employed as the analytical framework for this study to examine grammatical patterns in English essays written by sophomore students in the English language program at King Khalid University. In the context of artificial intelligence–assisted linguistic analysis, this taxonomy provides structured categories that can be integrated into automated error detection and intelligent feedback systems. The framework captures common learner modifications such as omission, addition, misformation, and misordering of linguistic elements, which can alter sentence structure and meaning. These categories align with computational linguistic models used in AI-based writing evaluation tools to identify recurring grammatical deviations and generate adaptive corrective feedback.

Moreover, the taxonomy supports the interpretation of learner errors as systematic and cognitively grounded rather than as signs of negligence. This perspective is consistent with AI-driven language learning environments, where error patterns are analyzed to model learners' interlanguage development and provide personalized instructional support. By identifying underlying linguistic processes, AI-based systems can classify errors, track learner progress, and recommend targeted grammar instruction. Accordingly, the taxonomy was applied to analyze grammatical errors in the essays of sophomore English language students, enabling a structured AI-oriented linguistic analysis. Previous research (Tlonaen, 2020; Tashtoush et al., 2025) has demonstrated that surface strategy taxonomy is particularly useful for identifying learner error patterns, further supporting its suitability for integration into artificial intelligence–supported teaching and learning frameworks.

4. Method

The method of this study was qualitative descriptive. As a result, the researcher descriptively categorized the GA

that the research participants committed. The sophomore class of King Khaled University serves as the research population. Purposive sampling was used to choose the 23 student samples. However, the researcher chose to include only 15 of the student writings as examples in this article because all of the students committed the same error. Data were gathered by the researcher using the documentary method. The sophomore class of King Khaled University serves as the research population. The data came from the 600–800 word mini-essays that the students wrote. 15 essays from 15 different students were used as samples. The identical themes were given to the pupils by the researcher. Students completed the essays twice during several meetings.

The researcher didn't carry out more involved data gathering techniques like observations or interviews. The Miles, Huberman, and Saldana (2014) paradigm was used to analyze the data, which includes data collection, data presentation, data reduction, and data verification. After that, the information was examined using the taxonomy of GA from Ho (2005), which was already mentioned.

Findings and Discussion

The researcher used Ho (2005)'s taxonomy of GA to examine the data in order to determine what grammatical mistakes pupils make when producing written work. In addition, the research draws on the primary grammar materials from Azar and Hagen (2017) and Murphy (2019).

English Language Sophomore Students' GA

The following errors were committed by English language students according to Ho's taxonomy of GA (in Putri, 2014):

Noun-Noun Groups

1) Plural marker-s are inserted without need

Sentence One: Three linguistics ramifications are present.

The term "linguistics" in the above phrase is a noun that refers to the language's scientific study and its structure, involving the study of phonetics, syntax, grammar, or several fields of linguistics. As the word "ramifications" denotes in the plural that there are several ramifications. However, it's clear that the term "linguistics" has to be interpreted as an adjective here, since it's being used to describe the "ramifications" of the statement. Consequently, it is not essential to include "s". The word "linguistics ramifications", which indicates that there are several ramifications connected to linguistics, is the right one based on the context of the phrase.

Sentence Two: Those types of queries might develop into a central queries.

The term "queries" is pluralized in clause two. The use of the letter "s" in the word does not imply that it is right or wrong. When used with single countable nouns, noun phrases with an "a" as their determinative utilize the article "a" (determiner). The article "a" is not allowed and "s" is inserted if the essay's author wants to state many queries; however, if there will only be one major inquiry, "s" is not required. In light of the sentence context above, the letter "s" is superfluous.

2) The plural marker -s is missing

Sentence One: "Including historical relationships of British institutions and value"

The terms "institution" and "value" are nouns in this sentence. One of the nouns was written with the single marker and the other with the plural marker (-s) in the essay. If the student meant to say that Britain has several values, the suffix -s needs to be inserted before the word "value". The term "values" and the noun "institutions" are now parallel. Given the sentence's context, it is clear that Britain has a variety of values, necessitating the addition of the suffix -s to the noun "value".

Sentence Two: "...whether courses, faculty, etc. People who wish to travel may simply locate a flight schedule, the cost of a ticket, and even make a payment online".

The error in sentence one is repeated in sentence two. Consequently, in order to be parallel to courses, we can't use the singular version of "faculty"; it has to be "faculties". The sentence context indicates that the author searched for more than one faculty, necessitating the addition of the suffix "-es" in "faculty" to be "faculties".

Sentence Three: "These issues affect all country"

The plural form of the word "country" should be "countries," as the term "all" refers to the complete group. Therefore, the letters "y" in the noun should be changed to "i" in order to add the suffix "-es" to transform the noun "country" into the plural noun "countries".

Sentence Four: ".....even in certain countries, such as Italy and German. The outcome of this decision has an impact on all of these country".

In sentence four, the noun phrase "in these countries" has an error identical to that in sentence three. Several countries were listed in the previous statement by the essay's author. Therefore, the author has to use "es/s" after the word country if more than one country is being discussed. Additionally, the author utilized the demonstrative noun "these." The word "this" is pluralized as "these." Thus, when referring to plural countable nouns, the demonstrative 'these' is employed.

Sentence Five: ".....there are many region that utilize English"

The plural form of the word "region" (with the suffix -s) was deleted in sentence five by the essay's author. In conjunction with count nouns, the quantifier many is employed. A count noun, the region is defined in this context. The appropriate phrase would be ".....there are many regions that utilize English".

3) Incorrect use of the article or quantifier determiner

The Sentence: "Next, the social media. The social media such as Facebook, Twitter...., the social media aids users..."

Here we see the first mention of the word "social media" in connection with one of the factors contributing to the phenomenon's rapid and ongoing global spread. The definite article "the" is not necessary for the initial appearance. The author can slightly modify her phrase to read "The second component is social media such as Facebook, Twitter..." as the proper sentence instead of "Next, the social media....."

4) Using the wrong subject and verb together

Sentence One: "Linguistic repercussions has three pillars....."

In this sentence, the first error has already been covered. The second issue focuses on the verb-subject agreement. "Repercussions" is the plural of the subject (noun) in this sentence. The suffix "-s" serves as a marker. As a result, the verb should be "have" in accordance with the subject-verb agreement rule, which takes the timing of action into account. The verb "has" or "have" denotes ownership rather than serving as a participle auxiliary. In contrast to "has" which deals with single forms, plural forms use "have" (Murphy, 2019).

Sentence Two: "the significance of the Industrial Revolution occurring in England"

When used as a verb, "significance" can be a singular "occurs, was/is occurring, had/has occurred, /should/ would/shall/will occur". The word "occurred" is used in this phrase instead of the word "occurring" to highlight the "significance" of previous events. According to Murphy (2019), the formulation of a verb depends on the noun phrases and tenses it denotes.

Sentence Three: "These approaches makes communication easier....."

In the third phrase, the demonstrative pronoun "these" is employed. You might use a noun or not. The "-s" suffix is not required when the verb "make" is used in its plural form.

Sentence Four: "Many users refers to..."

The topic of the fourth phrase "users" is plural. A pre-modifier, or a modifier that comes before a noun, can also serve to denote this "There are several instances of this word, hence many is a quantifier. Many users, as a noun, must thus be followed by the verbs "had" or "had," depending on the tense. The tense of the word "had" indicates that "Many users" is referring to a historical event. In the clause where "Many users" serves as the subject, the adverb "had" indicates a prior state of affairs.

Sentence Five: "Facebook is establisbed by Mark Zuckerberg in 2004....", "when the updates lead to increase

users ..”

The fifth sentence has two errors. The sentence’s context reveals that the incident happened in the past, which is the first error. The existence of the time adverb “2001” indicates it. The simple past tense “was” should be used when writing anything in the past. The correct phrase to use in place of this is “Facebook was established by Mark Zuckerberg in 2004.... “. The second issue is the improper use of the verb “increase” in conjunction with an adverb that is past-tense in the sentence context. The verb “increased” should be used. The fact that the sentence indicates that the incident happened in the past is the cause. The right phrase is “when the updates lead to increased users ..”.

Sentence six: “Most of the users, written the comments by English language”

The past tense is indicated by the word “written” in sentence six. The word “wrote” in the simple past tense should be used.

Sentence Seven: “Thus, the users will completely adopted social media.”.

There is a verb phrase error in sentence seven. The essay’s author utilized the future tense. S + shall/will + infinitive (present future) and S + should/would + infinitive (past-future) are the patterns for the future tense (Murphy, 2019). The author’s usage of the word “adopted” is inappropriate based on the pattern. The infinitive verb “adopt” must come after the future word “will”. Therefore, “Thus, the users will completely adopt social media” is the proper statement using the future tense pattern.

Verb-Verb Group

1) Absence of suffixes (-s,-es,-ed,-ing)

Sentence One: “... how a social media impact language...”

According to Murphy (2019), eight tenses may be found in English, but there are just two verb tenses: present and past. This goes with what grammarians refer to as an aspect. Every verb has one of two aspects: continuous or simple. The author removed the suffix-ed from sentence one even though the verb “impact” calls for it with the singular noun “social media”. From the rest of the sentence, it’s clear that the word “impact” needs the ending “-ed” to refer to social media activity that happened in the past.

Sentence Two: “Twitter attract the users’ attention in the West”

The words “Twitter attract” are missing a suffix in sentence two. When referring to a current occurrence, the word is “attracts,” while when referring to a previous event, the verb is “attracted.”

Sentence Three: “The number of Twitter users arrive in the west....”

Sentence three makes the same error as sentence two in that the verb “arrive” should have the suffix “-s” or “-ed” added to it to show that it refers to a singular noun (in this case, “The number of Twitter”). It either “arrives” for a current event or “arrived” for a previous event.

Sentence Four: “Recently, social media become a universal method”.

Sentence Five: Users can communicate with each other after...”.

The same error is evident in sentences four and five; the adverb “recently” denotes the present, therefore the verbs “become” and “communicate” in sentences four and five, respectively, should be altered to “becomes” and “communicates,” respectively.

Sentence Six: “It refers to that total users had increased because of using social media in Multi-level marketing that was enhancing the competition and was improve the income of individuals as well”.

In sentence six of the essay, the progressive tense, indicated by the suffix -ing and written as be + -ing (the present participle), was removed (Murphy, 2019). The sense that an action is ongoing at a certain moment is conveyed by the progressive tenses. The tenses show that something begins before, persists during, and carries on after another action or time (Murphy, 2019). Insight on the historical event or activity under discussion can be gleaned from the sentence’s context. The past progressive tense indicates actions or events that began in the

past and were still ongoing at the time another event took place (Azar & Hagen, 2017). The proper phrase is “and was improving the income of individuals as well.”

2) Absence of the -ed participle following a form of the verb be

The Sentence: «---it establish by 2004...»

This sentence requires the passive voice form of the verb. Since the verb is in the active rather than the passive tense, the sentence is incorrect. A passive form follows the pattern S + to be + past participle + object. In this case, the verb “establish” should be written as “established,” and the preposition “is” should be used before the past participle “established,” depending on the tense and the context of the phrase. Therefore, the proper construction is “It is established by 2004 or it was established by 2004...”.

3) Incorrect form after modal verb (No needless insertion or overgeneralization of the suffixes -s, -ed, or -ing were discovered).

The researcher revealed that

- Some students properly incorporated the modal verb into their sentences, whether they were active (S + MV + infinitive), passive (S + MV + be + past participle), or adjective-based (S + MV + be + adjective).
- Some students omitted all modal verbs from their phrases.

4) There was no indication that an incorrect form followed a modal verb (omission of a passive form with a suffix-ed).

Some students appropriately use passive phrases with modal verbs in their academic writings. In several of their essays, they didn’t employ modal verbs.

5) No direct object omissions were discovered

The object of a phrase was not omitted by students. The ability of students to write transitive verbs was adequate. Verbs that may take an object as their object are known as transitive verbs.

6) There was no evidence of the missing infinitive “to”

In their phrases, students correctly incorporated the infinitive “to.” When employing the infinitive “to”, they adhered to the guidelines. To + the base form of the verb (go, be, see, etc.) or the base form of the verb + to (forget, decide, plan to do, etc.) is the pattern (Azar & Hagen, 2017; Murphy, 2019).

7) There was no evidence of the -ing participle being missing

The essays that students wrote did not contain any unique terms that were followed by “ing”. A present participle is another name for an “ing” participle. Following certain phrases is the -ing form, as in Tom wastes a lot of time playing video games. English has a few unique phrases and expressions. Students used short, extremely simple English sentences to write their academic essays.

8) Absence of an auxiliary verb

Sentence One: “...Facebook established by Mark...”

Sentence Two: “...it called as social media...”

Sentence Three: “..that added by users...”

Sentence Four: “Arabian region, it has several forms of communication methods, influenced by political factors”.

The passive voice is formed by inserting the past participle after the proper tense of the verb “be” (Murphy, 2019). Each of the four statements relies on a passive form. The patterns of passive voice construction utilized in those examples are discussed. All of the tenses are handled in passive voice. It is not possible to convert these phrases to passive voice by eliminating the auxiliary verbs that are integral to their meaning (Murphy, 2019). There should be auxiliary verbs in the past tense for the four phrases. Wordings such as these are correct:

1. “...Facebook was established by Mark...”

2. "...it was called as social media..."
3. "...that was added by users..."

According to English grammar rules, we cannot have two subjects in a sentence without conjunction. The word "Arabian" should be the complement of the sentence that was previously placed. In the inserted complement, avoid using the subject. "Arabian region, which has several forms of communication methods, was influenced by political factors (noun)..." should be the adjustment.

9) In an indirect question format, the verb-subject inversion was not discovered

No inflection of the subject in the form of an indirect question was detected in the students' essays.

Preposition Error

1) Prepositions were not missed

Prepositions weren't left out by the students. Some students used prepositions appropriately, whereas others did not. Prepositions were hardly ever employed by pupils in their essay writing.

2) Preposition added without need

Sentence One: "this essay will determine briefly about the advantages of social media..."

In the first line, the preposition "about" is used to introduce who or what the statement is about. But since "the advantages of social media" may be employed as a direct object reference, "determine" can stand alone without the preposition. The proper construction is "this essay will determine briefly the advantages of social media..."

Sentence Two: "...this subject tries to reveal on how the create of..."

The error in the second sentence is quite similar to the first. Forego the preposition "on" here; a direct gaze is what's needed here. The proper construction is "this subject tries to reveal how the create of..."

3) Incorrect choice of use prepositions

The Sentence: "When the update leads users at subscribe which grows the effectiveness"

The preposition "to" is more appropriate in this sentence's context since "at" does not match. The implicit cause is because "at" is a preposition that expresses both "time" and "location" (Murphy, 2019). The verb "leads" employs the for/to preposition. When describing the location, a person or object that someone or something is moving toward, or the course of something, we use the preposition "to".

Sentence Structure

- 1) There was no modifier for dangling.
- 2) There was no modifier for squinting.
- 3) Nonsensical or disjointed sentences.

Sentence One: "...Facebook are adopted it is good in several the fields, those fields are marketing, politics and educational."

The duplication of passive forms, the misuse of "to be," and the serial words are all faults in the first phrase. There should be nouns after "fields," however the author jumbled up the serial words "marketing, politics, and educational". The correct sentence probably could be shortened such as ".....Facebook is adopted in several fields such as marketing, politics, and education".

Sentence Two: "...indicated that English language play like roles in politic and educational fields..."

Similar to sentence one, sentence two has the same error. The location of the word "like" and the fact that the adjective form of the word "politic" serves as an adjective or noun complement for the noun "fields" most likely caused the reader confusion. The correct sentence should be "...indicated that English language play a significant role in political and educational fields..."

- 4) There were no incomplete or broken sentences.
- 5) No run-on sentences were discovered.
- 6) Unsuitable coordinating conjunction.

The Sentence: “Twitter is not most common as first application in Arabic region, but it does not imply that....”.

A conjunction can be used in sentences to join words or phrases with the same grammatical purpose. Parallel structure is the term used to describe this use of conjunctions. This pattern employs the conjunctions “but, not”. The term “coordinating conjunctions” refers to these words. The essay’s author included the word “but” in his phrase, however it is not essential in this context because there is no ambiguity in the statement. When two statements are at odds with one another, the term “but” is employed to draw attention to the contradiction.

7) No improper subordinating conjunction was discovered.

“Subordinating conjunctions” are words that expressed adverb sentences. According to Azar and Hagen (2017), terms such as till, since, as soon as, if, as, after, when, while, before, and many more are used to start adverb clauses. Four of them—if, before, after, and when—have been utilized by the 13 pupils. They appropriately employed them in their sentences, for example, by separating the independent clause from the dependent clause with a comma. When the dependent clause comes before the independent clause, as in he lived in the USA, he worked there a comma is used.

8) Unsuitable conjunction combination

The Sentence: “both are considered as common applications or marketing platforms...”.

This error was only discovered in one student’s essay. This paired conjunction is the unalterable pattern, and the fault lies in the paired conjunction that is both...and. “Both” is coupled with and, “either” is coupled with or, and “neither” is coupled with not. Both and or were used by the author. That is untrue. In general, pupils are able to join sentences using coordinating conjunctions such as “or, and, but”. Directly stating such as “both are viewed as common apps and marketing platforms...,” is preferable.

The Most Common Errors in Writing Essays of English Language Students

Noun and noun groups

- 1) Plural marker-s are inserted without need
In two essays prepared by two of 15 pupils, there are two sentences have been discovered.
- 2) The plural marker -s is missing
In five essays prepared by five of 15 pupils, five phrases were discovered.
- 3) Incorrect use of the article or quantifier determiner
Two phrases were discovered in two essays produced by two of 15 students.
- 4) Using the wrong subject and verb together

Seven phrases were discovered in seven essays that seven out of 15 students had authored.

Verb-Verb Group

- 1) Absence of suffixes (-s,-es,-ed,-ing)
Six phrases from six essays authored by six of 15 pupils were discovered.
- 2) Absence of the -ed participle following a form of the verb be
Only one phrase from one of 15 students’ essays has been discovered.
- 3) Incorrect form after modal verb (No needless insertion or overgeneralization of the suffixes -s, -ed, or -ing were discovered).
- 4) There was no indication that an incorrect form followed a modal verb (omission of a passive form with a suffix-ed).
- 5) No direct object omissions were discovered
- 6) There was no evidence of the missing infinitive “to”
- 7) There was no evidence of the -ing participle being missing
- 8) Absence of an auxiliary verb
Four phrases from four essays produced by four of 15 pupils have been discovered.
- 9) In an indirect question format, the verb-subject inversion was not discovered

Preposition Error

- 1) Prepositions were not missed
 - 2) Preposition added without need
- There are two phrases from two essays that two of the 15 students wrote.
- 3) Incorrect choice of use prepositions
- Only one phrase from one of the 15 students' essays has been discovered.

Sentence Structure

- 1) There was no modifier for dangling.
 - 2) There was no modifier for squinting.
 - 3) Nonsensical or disjointed sentences.
- One sentence was discovered in one of the essays that one of the 15 students wrote.
- 4) There were no incomplete or broken sentences.
 - 5) No run-on sentences were discovered.
 - 6) Unsuitable coordinating conjunction.
- One of the 15 pupils' essays had one sentence, which was discovered.
- 7) No improper subordinating conjunction was discovered
 - 8) Unsuitable conjunction combination

In one of the 15 pupils' essays, there is one sentence that has been discovered.

- 1) Noun and noun groups: Students made errors in all four categories, but the fourth category—an appropriate combination of subject and verb—contains seven phrases that are grammatically incorrect from seven essays that seven of 15 students wrote. The second category, Omission of Plural Markers -s, has five phrases from five essays produced by five of 15 students that are grammatically incorrect. It is safe to conclude that some sample has made errors in these two areas.
- 2) Students committed errors with verbs and verb groups in three categories, with the first category consisting of six phrases with GE from essays produced by six out of 15 students and omitting the suffix--ing/-ed/-es/-s. The eighth category, "omission of auxiliary verbs," consists of four phrases from four essays produced by four of 15 students that have GE. As a result, it may be claimed that certain samples included GA in these two groups.

Conclusion

In a corpus-based error analysis enhanced by natural language processing (NLP) tools, the English-language essays written by sophomores at King Khalid University revealed specific grammatical error (GE) patterns that AI-driven linguistic systems can help detect and address. The students' errors fall into several categories. First, in noun-noun groupings (four subcategories), all four contained errors. Using AI-based part-of-speech tagging and error pattern recognition, the following mistakes were identified: poor choice of quantifier or article determiner, unnecessary inclusion of the plural marker -s, omission of the plural marker -s, and improper subject-verb agreement. Second, among nine types of verb-verb groups, students erred in three: omission of auxiliary verbs, deletion of the suffixes -s, -es, and -ed, and removal of -ed in participles following a form of *be*—all of which can be automatically flagged by AI writing assistants. Third, in prepositional errors (three types), students committed two types: improper choice and insertion of prepositions. Additionally, in the sentence structure section (eight categories), three error types were observed: use of illogical or disjointed phrases and incorrect conjunction usage—areas where AI-based syntactic parsers and grammar checkers could provide real-time feedback. The key errors made by sophomores were: (1) in noun-noun groups, deleting the plural marker -s and using improper subject-verb agreement; (2) in verb-verb groups, omitting auxiliary verbs and deleting the suffixes -s, -es, and -ed. These findings suggest that while some writing errors persist among sophomores at King Khalid University, AI-powered linguistic analysis tools can help minimize them by offering targeted, automated feedback. Consequently, integrating AI into grammar instruction can support students in writing academic essays more effectively and with fewer errors.

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