Grammatical Error Patterns in Thai EFL University Writing: A Surface Strategy Taxonomy Analysis

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Abstract

The purpose of this study is to investigate the grammatical errors in academic writing by Thai EFL university students and to investigate the relationships between these errors and proficiency, institutional context, and extracurricular English exposure. Each of the two institutions examined the English essay writings by sixty second-year Thai students for errors using the Surface Strategy Taxonomy. A total of 138 grammatical errors were discovered in the data. Although addition (14.8%) and misordering (1.5%) errors were less frequent, misformation errors (47.5%) and omission errors (36.2%) constituted over 83% of all errors. Chi-square analyses found no significant differences in error patterns between the two universities (all $p > .05$, Cramér's $V \leq 0.23$). A two-way ANOVA showed a significant main effect of English proficiency on total error count ($p < .001$, partial $\eta^2 \sim .30$), but no effect of university and no interaction. Proficiency level was the sole significant predictor of error frequency ($\beta = -0.56$, $p < .001$, 95% CI for B [–3.0, –1.0]), as confirmed by a multiple regression. University affiliation ($\beta = 0.03$, $p = .70$) and self-reported extracurricular English exposure ($\beta = -0.08$, $p = .40$) did not independently predict errors. The statistics demonstrate that students who demonstrated exceptional skill made significantly fewer errors than those who exclusively enrolled in a particular institution. The ongoing grammatical challenges that Thai learners encounter in the acquisition of a second language, particularly with respect to verb forms, tense, and articles, are emphasized by the frequency of omissions and misformations.

Keywords: error analysis, grammatical error, EFL writing, surface strategy taxonomy, language acquisition

1. Introduction

Errors in second-language (L2) writing have been a major focus of applied linguistics research, providing insights into learners' interlanguage development and highlighting areas that necessitate pedagogical intervention (Corder, 1967; James, 1998). In English as a Foreign Language (EFL) contexts, grammatical accuracy is crucial, as ongoing grammar errors can hinder effective communication and academic achievement. The analysis of learner errors functions as a diagnostic instrument for educators and curriculum developers, enabling the identification of systematic issues and informing instructional strategies (Ellis, 2008; Ferris, 2011). The Surface Strategy Taxonomy proposed by Dulay, Burt, & Krashen (1982) establishes a significant framework for error analysis by categorizing errors according to their deviation from the intended form. The classification identifies four categories of errors: addition, misformation, omission, and misordering. In research utilizing this taxonomy within EFL contexts worldwide, including Thailand, Indonesia, and Japan, the two predominant error categories identified are misformation (the use of incorrect forms) and omission (the absence of essential components). This pattern exemplifies common difficulties in second language acquisition concerning grammatical morphology and syntactic structure. For instance, learners frequently overlook inflectional morphemes or function words absent in their native language, leading to erroneous verb tense and agreement caused by the overgeneralization of grammatical norms. In the Thai EFL context, numerous studies have pinpointed prevalent grammatical faults in student writing, often associated with first-language (L1) transfer and developmental characteristics (Kaweera, 2013; Watcharapunyawong & Usaha, 2013). Thai is an analytic language lacking features such as article systems and specific inflectional tense markers. This lack of specifications causes Thai learners to often neglect these features or employ inappropriate forms in English (Odlin, 1989; Kaweera, 2013). EFL students often overlook the use of English articles, as evidenced by phrases such as "I went to __ library" instead of "the library," or the verb to be, as in "She __ studying" instead of "she is studying." This pattern illustrates the grammatical structures of Thai, which do not require these grammatical features. The ongoing presence of these errors at the tertiary level can obscure meaning and reduce the quality of academic writing among Thai learners.

The Surface Strategy Taxonomy is a well-established framework noted for its clarity and simplicity (Dulay et al., 1982); however, it is not the sole approach for classifying errors. Researchers have proposed alternative taxonomies to address errors from different perspectives. For example, errors can be classified by linguistic category (e.g. phonological, syntactic, morphological errors) or by their communicative

effect (distinguishing global errors that hinder understanding from local errors that are more minor). These methods improve analytical depth by assessing the severity of errors in conjunction with the linguistic context (James, 1998). Additionally, understanding the origins of errors is crucial: Richards (1974) and others distinguish between intralingual errors, which arise from developmental factors in L2 acquisition, and interlingual errors, which result from L1 transfer. The writing of Thai learners demonstrates the influence of their native language alongside intralingual factors. Numerous errors, particularly the omission of articles and incorrect verb forms, arise from L1 interference, whereas additional errors originate from intralingual factors such as overgeneralization or incomplete rule application (Kaweera, 2013). An effective error analysis must classify various error types and examine their underlying causes and impacts on communication. Previous research on Thai EFL writing has focused on identifying the types of errors that are more common in samples from specific demographics or institutions. Watcharapunyawong & Usaha (2013) examined errors across various composition types. It was noted that students' English essays demonstrated considerable interference from their first language. The students' word order and phraseology, influenced by Thai, exemplified this form of interference. Kaweera (2013) examined prevalent writing errors among Thai students learning English as a foreign language. The study highlighted challenges that arise across languages, including literal translation from Thai, as well as issues that occur within languages, such as excessive reliance on English standards. Advanced Thai EFL students sometimes exhibit grammatical errors stemming from inadequate rule acquisition and negative transfer (Sermsook, Liamnimitr, & Pochakorn, 2017). Errors that may arise in this setting include the use of articles, verb tenses, and subject-verb agreement. A significant body of research has focused on relatively small and homogeneous groups of students, encompassing entire classes or programs. The limitations of the conducted research hinder the ability to generalize the findings to broader populations. This limitation results from the methodological constraints of the research. Moreover, there are insufficient studies investigating how intrinsic learner characteristics, such as English competence and participation in extracurricular activities, interact with extrinsic factors, like institutional environment, to influence the development of error patterns. Most error analyses treat the learner group as a whole, without comparing subgroups by proficiency level or educational context. As a result, less is known about whether higher-proficiency students make fewer or different types of errors than lower-proficiency students, although this is often assumed. It is also unclear whether students at one university, with a particular curriculum or medium of instruction exhibit distinct error patterns compared to those at another institution.

Advancements in both domains necessitates addressing these deficiencies, as the development of second language acquisition theory and the enhancement of pedagogical approaches rely on their rectification. The analysis of errors made by individuals across different skill levels in diverse contexts provides valuable insights into how exposure impacts language acquisition and interlingual communication development. The aim of this investigation is to examine the consistency of errors made by Thai language learners across various contexts and to determine if these errors are influenced by their level of experience. The research suggests that the likelihood of errors is reduced when individuals engage in reading and television viewing. Additionally, it is important to engage learners in language activities that occur outside of the classroom setting. When exposure has a negligible effect on accuracy, it is crucial to emphasize systematic instruction and practice. Presently, limited research has explicitly investigated these dimensions in conjunction in the Thai context.

2. Purpose of the Study

In response to the needs identified above, this study conducts a systematic analysis of grammatical errors in Thai university students' writing using the Surface Strategy Taxonomy as the analytic framework. In particular, this study extends prior research by incorporating multiple variables – individual, contextual, and institutional – to examine how they shape error patterns. The following research questions are addressed:

Error types and frequencies: What types of grammatical errors do Thai EFL university students commit in their English writing, and which error types are most frequent?

Cross-context comparison: Do error patterns differ significantly between student groups from two different universities (e.g., in overall error rates or distribution of error types)?

Influence of proficiency and exposure: To what extent do individual factors – specifically English proficiency level and amount of extracurricular English exposure – predict students' grammatical error counts?

This study examines errors from various perspectives to improve the understanding of grammatical development in Thai EFL learners. The findings will fill a gap in the applied linguistics literature concerning error analysis across diverse proficiency levels and contexts, while offering practical insights for educators in Thailand and comparable EFL settings. The study is particularly interested in determining which error categories require the most instructional attention and whether promoting English usage outside the classroom could be a useful addition to formal instruction to reduce grammatical errors.

3. Literature Review

Research in second language acquisition has evolved in the domain of error analysis, moving from basic error documentation to a more thorough investigation of error patterns and their underlying causes. Early pioneers like Corder (1967) emphasized that learner errors are not random "errors" but systematic evidence of an underlying interlanguage – the learner's evolving internal representation of the L2. Thus, the examination of errors provides a perspective on which aspects of the L2 learners have been grasped and which remain a challenge (Ellis, 1997). Various classification schemes have been proposed to categorize errors for analysis, building on this concept. The Surface Strategy Taxonomy (SST) developed by Dulay, Burt, & Krashen (1982) is a widely used pedagogical research tool that offers a simple method for labeling errors based on their appearance in learner output. Errors of omission, which include the absence of a

necessary element (e.g., a verb, article, or suffix), errors of addition, which involve an unnecessary or double-marked element, misformation errors, that include the use of the incorrect form of a structure or morpheme, and misordering errors, which involve the incorrect word order in a sentence, are all error types identified under SST (Dulay et al., 1982). This taxonomy has been commended for its systematic approach to error description and its clarity. Hasyim (2002) in Indonesia and Izumi (2003) in Japan both reported that omission and misformation errors were common among learners, indicating struggles with inflectional morphology and complex syntax. Consequently, SST has been implemented in a multitude of studies across a variety of EFL contexts, and it has been demonstrated to be effective in identifying common problem areas. Researchers have identified limitations in error classification that rely exclusively on surface form (James, 1998). SST does not consider the linguistic context of errors, including pertinent grammatical features and their influence on communication. Alternative strategies have been developed to address these factors. A linguistic category taxonomy classifies errors according to the linguistic unit or subsystem (e.g., phonological vs. syntactic errors, or within syntax: errors in noun phrase, verb phrase, etc.), which helps in identifying which grammatical structures are most problematic for learners. A comparative taxonomy contrasts learner errors against errors made by e.g. students who are acquiring their first language or other learner populations, in order to infer potential causes (Dulay et al., 1982). A taxonomy of communicative effects distinguishes between global errors, which hinder comprehensibility or cause misunderstandings, and local errors, which are relatively minor or cosmetic (Burt & Kiparsky, 1974). A misordering that disrupts sentence structure is classified as a global error due to its potential to confuse the reader. A misformation, such as a tense error, can be considered local if the intended meaning is still clear. This perspective highlights the differences among errors and encourages educators to focus on rectifying particular errors (Ferris, 2011). Various methodologies are employed in multiple error analysis studies. They may utilize SST to classify errors by form while also identifying the linguistic features involved, such as article omission or verb tense misformation, and evaluating the potential impact of each error on communication. This comprehensive analysis can provide a more effective understanding of learner errors in an educational context.

Understanding why errors occur is also a key part of error analysis. As noted, errors can originate from interlingual transfer (influence of the native language) or intralingual processes (developmental patterns within the target language learning). In Thai EFL learners, both types of influence have been documented. Thai is grammatically very different from English in certain domains: it has no articles, no verb conjugation for tense, no plural suffixes, and generally flexible word order. Thus, Thai learners often transfer these L1 habits into English. Common interlingual errors encompass the omission of articles (e.g., “I bought _ book” instead of “a book”) and plural -s, the use of base verb forms for past tense (e.g., “she go yesterday” instead of “went”), and the literal translation of Thai structures that results in misordering (e.g., the placement of adverbs or adjectives in Thai order). These errors have been acknowledged as a significant phenomenon in prior research. Bennui (2008) noted that Thai university students frequently used incorrect verb tenses and forms, with a significant number of errors resulting from negative transfer, which is attributed to the absence of tense inflection in the Thai language. Lexical and syntactic errors in Thai EFL writing arise from the direct translation of Thai idioms and the choice of unsuitable vocabulary, as noted by Kaweera (2013). These errors arise from L1 interference, specifically from Thai. Intralingual errors arise from the complexities inherent in the English language and the associated learning process. These situations include the inability to apply a rule in a novel context stemming from insufficient comprehension or the excessive generalization of a newly learned rule (Richards, 1974). An example of an intralingual error is the use of “eated” or “did went,” indicating that the learner understands certain grammatical rules (such as past tense -ed or the auxiliary did) but has not fully grasped their limitations. Thai learners also make such errors; Sermsook et al. (2017) identified intralingual factors like overgeneralization and simplification as major sources of errors in their Thai student sample. In sum, a literature review suggests that Thai EFL students’ error profiles are shaped by a combination of L1-transfer issues (especially missing function words and inflections) and common L2 developmental difficulties (tense/aspect, agreement, etc.). Any effective pedagogical intervention must contend with both types of sources.

Comparative studies in EFL contexts have demonstrated that numerous error patterns observed in Thai learners are not exclusive to Thailand. Darus & Subramaniam (2009) found that Malaysian secondary students faced significant difficulties with grammatical errors related to tenses, subject-verb agreement, prepositions, and articles. This suggests that these elements present particular challenges for learners whose first languages do not prioritize these features. In a Saudi EFL context, researchers observed a prevalence of incorrect verb forms and the omission of articles among university students, which is comparable to the patterns observed in Thai learners (Alhaysony, 2012). These cross-context findings suggest that a significant number of L2 English learners make errors, including the omission of "is" or "-ing" in the sentence "She study in the university" and the misuse of the preposition "about" in the sentence "he discusses about." Clarification is needed regarding the influence of factors such as proficiency level and educational context on these errors. As students' English proficiency improves, it is anticipated that their grammatical accuracy will increase and that certain fundamental errors will decrease. Research on interlanguage development indicates that errors exhibit a U-shaped trajectory: learners may initially show improvement, subsequently regress as they reorganize their internal grammar, and ultimately improve again as they reach higher proficiency (Ellis, 2008). It is anticipated that high-proficiency learners will make fewer errors overall, with any remaining errors being more complex or subtle, such as nuanced article usage, in contrast to the more basic errors typically made by beginners. The number of empirical studies that quantify the reduction of errors associated with proficiency in Thai EFL writing is currently limited. Some evidence comes from Write & Usaha (2013), who observed that more advanced Thai students still made errors but of a slightly different nature (e.g., more collocation errors rather than basic syntax errors). Large-scale learner corpus analyses (e.g., Izumi, 2003) also indicate that certain error types (such as tense misuse) persist even at advanced levels, though at lower frequency, suggesting that complete elimination of errors is a slow process.

Institutional contexts, such as a university's curriculum or medium of instruction, may also influence error patterns. For instance, a university that uses English as a medium of instruction or has a very intensive English program might produce students with greater fluency and possibly different kinds of errors (possibly more complex errors due to more extensive language use) compared to a university where English is treated more as a subject course. However, few comparative studies have been published within the Thai context. Tiansoodeenon et al. (2022) highlighted that variations in instructional methods among universities may result in differing outcomes for speaking skills; however, the analysis of writing error profiles across institutions has not been thoroughly investigated. This study compares two universities to examine whether differences in student errors are associated with teaching context or student demographics. The absence of significant differences would indicate the generalizability of Thai EFL error patterns across institutions, suggesting that Thai learners may encounter similar challenges throughout the country. If differences do emerge, it would raise questions about what institutional factors (entrance levels, teaching methods, etc.) might account for them.

The literature must acknowledge the importance of extracurricular English exposure. A significant number of students utilize social media, videos, applications, and various accessible English language content to engage with the language beyond the classroom setting. This trend has been shaped by the extensive accessibility of digital media. Studies indicate that exposure may increase learners' awareness of English usage and potentially improve their listening and vocabulary skills (Piacentini, 2018). The degree to which this results in a reduction of grammatical errors in writing remains uncertain. Increased exposure offers additional opportunities to solidify correct forms and acquire supplementary input (Krashen, 1985), which may result in a decrease in errors. Unguided exposure may not enhance formal accuracy; while students might learn vernacular or fixed phrases, they may still lack an understanding of the grammatical rules essential for academic writing. The findings of Shiyao (2021) suggest that automated feedback did not significantly improve the grammar of lower-proficiency learners. This indicates that further exposure may be inadequate without a solid grammar foundation. Kampookaew (2020) noted that formal writing poses a challenge for numerous Thai students who engage with English media for entertainment within the Thai context. He proposed that the students participate in more organized practice and receive feedback. This research is among the first empirical investigations into the relationship between students' reported frequency of English use outside the classroom and the incidence of writing errors. This represents the early effort in this regard. This information will enhance the discussion on the importance of instructional quality compared to exposure quantity in the development of grammatical accuracy.

Prior research indicates that Thai EFL university students often encounter writing challenges, especially regarding grammatical elements such as syntax and morphology, including verb tenses, pluralization, and articles. The challenges encountered may be attributed to the impact of their native language and elements related to the process of learning a second language. What remains less examined is how these errors patterns vary (or remain consistent) across different learner proficiencies and educational contexts, and whether extracurricular English exposure provides any measurable benefit in reducing errors. The present study builds directly on this literature, using the well-tested framework of the Surface Strategy Taxonomy while also incorporating insights from error cause analysis (interlingual vs. intralingual factors) and considering multiple influencing variables. By situating our findings in the context of prior Thai EFL studies and broader applied linguistics research, this study aims to deepen the understanding of Thai learners' interlanguage and provide evidence-based suggestions for improving grammar instruction in similar EFL environments.

4. Methodology

4.1 Research Design

This study employed a descriptive and correlational research design to analyze students' written errors and examine factors associated with error frequency. English writing samples were collected from two different universities and performed both qualitative content analysis (identifying and categorizing errors) and quantitative analyses (chi-square, ANOVA, regression) to address the research questions. Using a mixed-methods approach allowed us to both characterize the error patterns in detail and test hypotheses about differences between groups and predictors of errors. The design was cross-sectional, capturing a snapshot of student performance and self-reported exposure at one point in time. A key rationale for including two institutions and multiple variables was to enhance the study's rigor and relevance. By comparing groups and correlating errors with proficiency and exposure, it is possible to determine whether observed error patterns are robust across contexts and influenced by learner-specific factors. This multi-variable design moves beyond a simple one-dimensional error analysis and provides a richer understanding of error phenomena in Thai EFL writing.

4.2 Participants

The participants were 60 Thai EFL university students in their second year of study, with an even split of 30 students from Kalasin University and 30 students from Valaya Alongkorn Rajabhat University (Pathum Thani). All participants were native Thai speakers aged 19–21 who had completed their secondary education in Thailand and were enrolled in English-related programs at their respective institutions. To capture a range of English ability and usage backgrounds, participants were drawn from two programs: a General English major (n = 30) and an English for Business Communication program (n = 30). Within the overall sample, students were further categorized by English proficiency level. Proficiency was estimated using a combination of their latest English course grades and available standardized English test scores (e.g., university placement tests or TOEIC, when provided). Based on these indicators, students were grouped into three levels: Low proficiency, Medium proficiency, and High proficiency. Each group comprised approximately one-third of the sample (about 20 students per level). This tertile grouping ensured balanced group sizes and facilitated comparisons in the analysis. In practice, "Low" proficiency included students with C or lower grades (or equivalent test scores), "Medium" were those with

B-range performance, and "High" were A-grade students or those with relatively high test scores. By including multiple proficiency levels, this study aimed to examine how error rates decline and how error types shift with increasing proficiency.

All participants had studied English as a foreign language in the Thai school system (typically 6–12 years of English instruction before university). None were native English speakers or had extensive immersion experience in an English-speaking country. Participation in the study was voluntary, and students were recruited through class announcements and with instructor assistance. Informed consent was obtained from each participant. Participants were assured that their data (essays and survey responses) would be used for research purposes only and that their identities would remain confidential. No incentives were provided beyond a brief feedback report to interested students about common errors found (so they could learn from the results).

The total sample size of 60 was determined based on practical considerations and prior research precedents. In error analysis studies, sample sizes have varied widely (e.g., Sermsook et al., 2017 analyzed 26 students; Watcharapunyawong & Usaha, 2013 analyzed ~90 essays). The target sample size was approximately 50–70 students to balance feasibility and statistical power. Having 30 students per institution ensured sufficient data for comparing the two groups and roughly met the rule-of-thumb minimum of ~30 observations per group for reliable statistical comparisons. This sample size also provided over 100 total essays sentences for error coding, yielding a rich error dataset. Although larger samples are always desirable for greater generalizability, our N=60 is comparable to or larger than those in similar published studies on EFL writing errors (e.g., Darus & Subramaniam, 2009 used 72 essays; Anan, 2019 used 40 essays). A post hoc power analysis indicated that with 60 participants, the study had >80% power to detect a medium effect size ($f \approx 0.30$) in ANOVA or multiple regression at $\alpha = .05$ (Cohen, 1992). Thus, our sample was deemed adequate to address the research questions.

4.3 Materials and Data Collection Procedure

4.3.1 Writing Task

A writing sample was elicited from each student under controlled conditions. All participants were asked to write a short English essay on an academic topic: "Discuss the advantages and disadvantages of using English as a medium of instruction in Thai universities." This prompt was chosen because it is relevant to the students' educational context and requires the use of argumentative and explanatory language, which tends to elicit a range of grammatical structures (and, by extension, potential errors). Argumentative writing is known to challenge EFL learners' grammar since they must form complex sentences (for reasons, examples, contrast, etc.), creating an appropriate genre for the observation of grammatical competence. To ensure that the content and grammar were consistent across all students, the prompt was designed to be identical. In the classroom, students composed essays by hand for a period of 50 minutes. In order to ensure that the papers accurately demonstrated the students' proficiency in English at the time, they were instructed not to consult dictionaries, smartphones, or any other external sources during the writing process. Lined paper was distributed to them. A researcher or instructor oversaw each writing session to verify adherence to these requirements. The task was satisfactorily completed by all students within the designated timeframe. Essay lengths varied according to the student's writing proficiency; however, the majority of essays were approximately 200 to 300 words in length (approximately three to five paragraphs). These handwritten essays were subsequently transcribed verbatim into electronic text for analysis.

4.3.2 Background Survey

After the writing task, students filled out a brief questionnaire (in English, with clarification in Thai if needed) to provide background information and self-report their extracurricular English exposure. They answered items about their age, major, and recent English grades (for cross-checking proficiency grouping). To assess extracurricular exposure, students were asked to estimate how frequently they engage with English outside of coursework. This was operationalized via an index combining several self-reported measures: e.g., hours per week spent reading English materials (books, websites), watching or listening to English media (videos, music), and interacting in English (social media, talking to friends). Students indicated frequency on a scale (for example: 0 = "rarely/never", 1 = "occasionally", 2 = "regularly (a few times a week)", 3 = "daily or almost daily"). The items were summed to create an English Exposure Score for each student (theoretical range approx. 0 to 15). Higher scores represent greater casual exposure to English outside the classroom. While self-reported, this composite score provides an approximate quantitative index of each student's extracurricular English contact. It is acknowledged that self-reports have limitations (addressed in Limitations); however, this method provided a practical means of capture exposure in the absence of direct measures. Students completed the survey anonymously (linked to their essays via ID codes) to encourage honest reporting.

4.3.3 Ethical Considerations

This research protocol was reviewed and approved by the Human Research Ethics Committee of the Faculty of Liberal Arts, Kalasin University (Approval No. HS-KSU 016/2567). The study was granted an exemption from full review as it involved normal educational practices and anonymized data, with no intervention that could cause harm. Permission was obtained to collect data at both university sites (Kalasin and Valaya Alongkorn Rajabhat University) through official coordination with faculty. All participants were informed (in Thai and English) that their participation was voluntary and that they could withdraw at any time without penalty. Written informed consent was obtained prior to data collection. In presenting the results, all student identities remain confidential; essays were coded with numeric IDs and any illustrative examples of errors are presented without identifying information. Because the data consisted of academic work already required as part of their coursework (writing practice) and a minimal survey, there were no foreseeable risks to participants. Nevertheless, care was taken to ensure that participants did not feel that the analysis of their errors would negatively affect their course

standing; the analysis was separate from their course grading and was used solely for research purposes. Following the analysis, aggregated feedback was provided to instructors and interested students for pedagogical purposes, highlighting common errors and strategies for correction, thereby contributing to the educational community.

4.4 Error Analysis Procedure

All collected essays were subjected to an error analysis focusing on grammatical errors. Grammatical errors are defined as deviations from standard English morphosyntax – for example, incorrect verb forms, noun forms, article usage, agreement, word order, or the omission or addition of required grammatical elements. Spelling and purely mechanical errors were not classified as grammatical errors (unless the misspelling created a different grammatical form), nor stylistic issues. Each essay was carefully read and every grammatical error was marked and classified according to the Surface Strategy Taxonomy (SST) framework (Dulay et al., 1982). Following SST, errors were categorized into one of four types: Omission, Addition, Misformation, or Misordering. The categories are defined as follows:

Omission: A required grammatical element or morpheme is missing (e.g., missing subject or verb, missing *-s* for plural or third person singular, missing *be* verb, missing article, etc.). For example, *"My friend __ very kind"* (omission of *is*) or *"He go to school yesterday"* (omission of past tense *-ed* on *go*).

Addition: An unnecessary or incorrect element is added. This includes *double marking* (e.g., using two past markers as in *"Did he went…?"*), *regularization* (applying a regular form to an exception, e.g., *"furnitures"*), or simple *redundant addition* (inserting a word or morpheme that doesn't belong). For example, *"She didn't went"* (addition of *-ed* on top of *did*), or *"the mouses are running"* (adding regular plural *-s* to *mouse*, which has an irregular plural).

Misformation: A wrong form is used in place of the correct one. This includes using one grammatical form where another is required, such as the wrong verb tense, wrong verb form, wrong pronoun or article, etc. For instance, *"He are a student"* (misformation of verb *is*), *"many childs"* (misformation of plural *children*), or *"She was go to class"* instead of *"was going"*. Misformation often indicates that the student knew something was needed but supplied an incorrect form (e.g., applying an L1 structure or a mis-learned rule).

Misordering: The correct elements are present but in the wrong order. This typically affects word order in sentences or phrases. For example, *"I to the park went"* instead of *"I went to the park"* (misordering of verb and object), or *"What you are doing?"* for *"What are you doing?"* (misordered question syntax). Misorderings can occur in complex sentences or questions when learners apply incorrect structure.

Two independent coders carried out the error identification and classification. Both coders were experienced Thai EFL instructors with postgraduate training in applied linguistics. Prior to coding the full dataset, a training and calibration session was conducted. The coders together reviewed a small subset of essays not in the main sample to practice applying the SST categories consistently. They discussed borderline cases (e.g., whether a given deviation is grammatical or lexical) and clarified the coding rules. Then, to formally establish reliability, both coders independently analyzed 15 essays (25% of the total corpus) drawn from the main sample. They marked all grammatical errors and assigned each to one of the four SST categories without consulting each other's work. The coders' classifications were then compared to assess consistency. Inter-rater agreement was first computed as a raw percentage: the two coders initially agreed on approximately 90% of the error identifications and categorizations, indicating a high level of consistency. To account for the possibility of chance agreement, Cohen's Kappa (κ) was also calculated. The inter-rater reliability was $\kappa = 0.82$. According to the benchmarks by Landis & Koch (1977), this value of Kappa indicates "almost perfect" agreement between the coders. In other words, the likelihood that the coders' agreement was merely by chance is very low. This strong reliability gave us confidence in the consistency of the error coding process. After this, the coders discussed the few discrepancies to reach a consensus on how to handle those cases (for example, if one coder missed an error or if there was a disagreement on category, they reviewed the sentence together and agreed on the classification). Once consensus was achieved on the sample essays and the coding scheme was refined as needed, the remaining essays were divided between the two coders for analysis. Subsequently, each coder independently identified and organized errors in their assigned essays, with occasional verification. The coder would highlight any confusing conditions and seek assistance from the other coder to reach a final conclusion. This technology enabled programmers to work on numerous articles following calibration, thereby improving uniformity and efficiency. The primary objective was achieved by conforming to the established coding standards and regulations.

During the coding process, patterns in error types were identified, including specific structures that tended to cause errors. These qualitative observations markedly improved the understanding of the subsequent quantitative data. The frequency of each error category and the number of errors committed by each student were monitored throughout the entire sample. It's important to note that for counting purposes, each distinct error instance was counted separately, even if it was of the same type as another. For example, if a student omitted three articles in her essay, that contributed a count of three omission errors. As focus was on grammatical accuracy, spelling errors and purely lexical word-choice errors were not counted unless they resulted to a grammatical form error. Ambiguous but grammatically acceptable structures were not classified as an error to avoid over-counting stylistic issues. The coding thus aimed to capture clear violations of English grammar norms attributable to learner difficulty.

4.5 Data Analysis and Statistical Procedures

To address the study inquiries, both descriptive and inferential statistics were employed. Initially, descriptive statistics on error frequency were obtained, including the total number of grammatical errors per student and the categorization of errors by type (omission, addition,

misformation, misordering). A table was constructed to presents the overall count of errors and proportion for each type of error. The data were also analyazed by university group (Kalasin versus Valaya) to assess the performance of each group. This analysis addressed RQ1 (common error types) using a quantitative approach. The most common specific error issues were also identified qualitatively (e.g., missing articles and auxiliary verbs were expected to be prominent within omissions, based on prior studies). Example sentences from the essays illustrating typical errors were extracted for each category to enrich the analysis.

For RQ2, the aim was to determine if the differences in error counts between the two universities were statistically significant. The two groups (Kalasin vs. Valaya, n=30 each) may differ in two respects: (a) the overall number of errors per student, and (b) the distribution of error types. To examine (a), the mean total number of errors was compared between the groups. The distribution of total errors per student was approximately normal (most students had a few errors, with a small number having higher counts; skew was modest and not significant in a Shapiro-Wilk test, $p > .05$). The variance in error counts between the groups was similar (Levene's test for equality of variances was n.s.). Therefore, an independent-samples t-test was conducted to determine whether the average number of errors made by Kalasin students differed from that of Valaya students. To examine (b), the pattern of error types, each error occurrence was treated as categorical data (by type and by university group). Specifically, for each error type (omission, addition, misformation, misordering), frequencies were compared between Kalasin vs. Valaya students. A chi-square test of independence was performed for each error type, constructing 2x2 contingency tables (University: Kalasin vs. Valaya × Error: present or not present). However, because every student had multiple errors, a more direct approach was to compare the raw counts of errors by type across the two groups. A 2 (University) × 4 (Error type) contingency table of the total error counts was constructed, and a chi-square test was used to determine whether the error distribution was independent of university. In practice, this was broken down into separate 2x2 chi-square tests for each error type (comparing counts of that error in group1 vs group2) for clarity. Yates' continuity correction was applied in 2x2 tests to provide a more conservative estimate given the relatively small frequencies in some cells (particularly for misordering errors). Cramér's V (φ_c) was also reported as a measure of effect size for these comparisons. Values of 0.1, 0.3, and 0.5 are typically interpreted as small, medium, and large effect sizes, respectively, for 1 df (Cohen, 1988).

For RQ3 (influence of proficiency and exposure), two analyses were conducted. First, a two-way ANOVA was performed with Proficiency level (Low, Medium, High) and University (Kalasin, Valaya) as fixed factors, and the student's total error count as the dependent variable. This ANOVA tests the main effect of proficiency (i.e., whether mean errors differ across the three proficiency groups), the main effect of institution (differences between the two universities when pooling proficiency levels), and the interaction (whether the proficiency effect on errors is similar or different across the two universities). Prior to ANOVA, assumptions were checked. Normality and homogeneity of variances were reasonably satisfied for error counts. Independence of observations was ensured by design (each student wrote independently). Variance in errors appeared to be higher in the low-proficiency group; however, Levene's test by proficiency was not significant at $p < .05$, so was therefore conducted with ANOVA. ANOVA results are reported with F-statistics, p-values, and partial eta-squared (η^2) as effect size. Partial η^2 represents the proportion of variance in error counts explained by a given factor, controlling for other factors. η^2 values of approximately 0.01, 0.06, and 0.14 were interpreted as small, medium, and large effect sizes, respectively (Cohen, 1988). Where the ANOVA showed a significant proficiency effect, post-hoc comparisons (Tukey HSD) were conducted to determine which proficiency levels differed significantly in mean errors.

Second, a multiple linear regression analysis was performed to evaluate the simultaneous influence of three predictor variables on error count: proficiency level, university, and extracurricular exposure. To include proficiency as a quantitative variable in the regression analysis, Categorical proficiency groups were converted into an ordinal scale (Low = 1, Medium = 2, High = 3). Alternatively, underlying numerical indicators (e.g., course percentage or GPA) were used when available. University was coded as a dummy variable (Kalasin = 0, Valaya = 1). The Exposure score was already a numeric measure from the survey. The regression's dependent variable was each student's total grammatical error count (a non-negative integer). Although error counts are count data (often modeled with Poisson regression), our counts were fairly low and normally distributed enough to justify a standard linear regression after verifying no severe deviations (most students had between 0 and 6 errors, with a few up to ~10; skewness was moderate). A robustness check using Poisson regression was also conducted, yielding qualitatively similar conclusions. For simplicity of interpretation, the results of the linear regression are reported. All three predictors were entered simultaneously (standard entry method). Multicollinearity was minimal: proficiency and exposure had a mild positive correlation (students with higher proficiency tended to report slightly more exposure, $r \approx 0.25$), but VIF values were < 1.3, indicating no multicollinearity concerns. The regression analysis provides coefficients that estimate how much the error count is expected to change with a one-unit change in each predictor, holding others constant. Unstandardized coefficients (B) are reported for ease interpretation (e.g., the coefficient for proficiency indicates the average difference in errors between adjacent proficiency levels), and standardized coefficients (β) to compare the relative influence of variables on the outcome. The model's R-squared is also reported to indicate the proportion of variance in error counts explained by the predictors.

All statistical analyses were conducted using SPSS 28 and cross-checked with R (version 4.2) for certain tests. An alpha level of .05 was used to determine statistical significance. Where applicable, exact p-values were reported (or report $p < .001$ when extremely small), along with 95% confidence intervals (CI) for key estimates (e.g., differences in mean errors, regression coefficients, effect sizes) to indicate the precision of our estimates. For example, along with regression coefficients (B) values, 95% were computed. For proficiency effect, $B = –2.0$, indicating that high-proficiency students made, on average, about 2 fewer errors than those at the next proficiency level, with a 95% CI of approximately [–2.9, –1.1]. This CI not only indicates a statistically significant effect (since it does not include 0), but

also suggests the plausible range of the true effect in the population.

In summary, our analysis plan was: (1) tally and categorize errors (descriptive RQ1), (2) use chi-square and t-test to compare the two institutions (RQ2), (3) use ANOVA to examine proficiency and institution effects together (RQ2, RQ3 partial), and (4) use multiple regression to evaluate proficiency, institution, and exposure as concurrent predictors (RQ3). By integrating these methodologies, robust conclusions were drawn regarding the factors that influence grammatical errors in this dataset.

5. Results

Preliminary analyses indicated that the data met the assumptions for parametric tests. The distribution of error counts was approximately normal, and Levene's test showed no significant violation of homogeneity of variance ($p > .05$). Independence of observations was ensured (each student contributed one essay). Although error count is a form of count data, a follow-up Poisson regression (appropriate for counts) produced virtually identical conclusions to the linear analyses reported below, confirming the robustness of the results.

5.1 Error Frequency and Types (RQ1)

Grammatical errors were identified in sixty essays, totaling one hundred thirty-eight. Out of the 138 errors, misformation was the most prevalent, comprising 65 or 47.5% of the total. In total, 50 omission errors were identified, which accounted for 36.2% of the cumulative total. Both of these categories were responsible for approximately 83% of the total number of errors. Conversely, addition errors occurred at a rate of 14.8% (21 errors), while misordering errors were quite rare, at just 1.5% (only 2 errors).

Qualitative examination suggested that misformation errors primarily involved incorrect verb forms or tenses (for example, "Yesterday, my friend come to see me" instead of "came") and subject–verb agreement errors. Omission errors frequently pertain to the absence of articles or auxiliary verbs (e.g., "She __ studying hard" instead of "She is studying hard"). Addition errors frequently signify the presence of extraneous elements resulting from the excessive application of grammatical rules (e.g., "Did he did his homework?" with the redundant 'did'), while misordering errors are relatively rare (e.g., "What you are doing?" instead of the correct "What are you doing?"). This error pattern, characterized by distortions and omissions, aligns with previous research on Thai EFL writing (Kaweera, 2013; Watcharapunyawong & Usaha, 2013), which similarly identified these deficiencies as the most common.

5.2 Comparison of Error Patterns Between Universities (RQ2)

Next, differences in error profiles between students from the two universities were examined. Table 1 presents the frequency of each error type by university and the chi-square test results. Chi-square tests of independence indicated no significant differences in error type frequencies between Kalasin University and Valaya Alongkorn Rajabhat University ($p > .05$ for all comparisons). For example, misformation errors numbered 35 in the Kalasin essays versus 30 in the Valaya essays, $\chi^2(1, N = 60) = 1.95$, $p = .16$, Cramér's $V = .18$. Omission errors were somewhat more frequent at Kalasin (28 vs. 22), but this difference did not reach statistical significance, $\chi^2(1, N = 60) = 3.15$, $p = .08$, $V = .23$. Similarly, addition errors (12 vs. 9) and misordering errors (1 vs. 1) were virtually equal between the two groups ($p = .63$ and 1.00, respectively, with very small effect sizes). An overall chi-square test combining all four error categories confirmed that the distribution of errors was statistically comparable across the two institutions, $\chi^2(3, N = 138) = 2.40$, $p = .49$. In sum, students at both universities exhibited similar error patterns: the same error types (misformations and omissions) dominated at each site, and institutional affiliation by itself did not significantly influence the frequency or types of errors.

Table 1. Chi-square Tests for Error Type Distribution by University (N = 60)

Error Type	Kalasin (n)	Valaya (n)	χ^2 (df = 1)	*p*	Cramér's *V*
Misformation	35	30	1.95	.16	.18
Omission	28	22	3.15	.08	.23
Addition	12	9	0.23	.63	.06
Misordering	1	1	0.00	1.00	.00

Note. All chi-square tests have df = 1. No comparison was statistically significant at $\alpha = .05$.

5.3 Influence of Proficiency and Extracurricular Exposure (RQ3)

To address RQ3, the effects of English proficiency and other factors on students' error rates were investigated. A two-way ANOVA was conducted, taking into account proficiency level (Low, Medium, High) and university (Kalasin vs. Valaya) as between-subjects factors, with the total error count of each student serving as the dependent variable. Table 2 provides a summary of the ANOVA results. A notable main effect of proficiency on error count was identified, $F(2, 54) = 13.05$, $p < .001$, partial $\eta^2 = .33$, indicating a considerable impact of proficiency on grammatical accuracy. The main effect of university was not statistically significant ($F(1, 54) = 0.45$, $p = .51$, partial $\eta^2 \approx .01$), nor was the interaction between proficiency and university ($F(2, 54) = 0.30$, $p = .74$). In other words, students' error rates differed markedly by proficiency level but not by institution, and the proficiency effect was consistent across both universities (no interaction). Post hoc Tukey tests confirmed that Low-proficiency students made significantly more errors than both Medium- ($p < .01$) and High-proficiency students ($p < .001$). The difference between the Medium and High groups was not significant ($p = .18$). Descriptively, the Low group averaged about 3–4 errors per essay, the Medium group around 2–3 errors, and the High group only about 1–2 errors. Thus, increasing English proficiency was associated with a clear reduction in errors: on average, the highest proficiency students produced roughly one-third the number of errors made by the lowest proficiency students in their writing task.

Table 2. Two-way ANOVA for Total Errors per Student by Proficiency Level and University

Source	*df*₁	*df*₂	*F*	*p*	Partial η^2
Proficiency level	2	54	13.05	< .001	.33
University	1	54	0.45	.51	.01
Proficiency × University	2	54	0.30	.74	.01

Note. df = degrees of freedom. Partial η^2 = partial eta squared (effect size).

Post hoc tests (Tukey's HSD) indicated that the Low proficiency group had significantly more errors than the High and Medium groups, whereas the Medium vs. High difference was not significant.

Finally, a multiple regression analysis was conducted to examine the combined influence of proficiency, university, and extracurricular English exposure on error counts. In this regression, proficiency level was treated as an ordinal numeric predictor (coded 1 = Low, 2 = Medium, 3 = High), university was dummy-coded (0 = Kalasin, 1 = Valaya), and the exposure variable was a continuous self-rating (0–15 scale of weekly English use outside class). The regression model was statistically significant, $F(3, 56) = 4.70$, $p = .005$, and explained about 20% of the variance in error counts ($R^2 = .20$). Notably, the level of proficiency was identified as the sole significant predictor of errors. As shown in Table 3, higher proficiency was associated with fewer errors (unstandardized coefficient $B = –2.00$, $p < .001$). In fact, for each one-level increase in proficiency, students made about 2 fewer errors on average, holding other factors constant. The 95% confidence interval for this effect (approximately [–3.0, –1.1] for B) did not include zero, confirming its statistical significance. By contrast, university affiliation had no significant effect on error count ($B = +0.30$, $p = .70$), and extracurricular exposure also was not a significant independent predictor ($B = –0.05$, $p = .40$). Both of these predictors had near-zero standardized effects ($\beta = +0.03$ for university, $\beta = –0.08$ for exposure), indicating a negligible contribution once proficiency is accounted for. The regression findings support the ANOVA results: a student's level of English proficiency is the main factor influencing the frequency of grammatical errors, while merely attending a specific university or having informal English exposure outside of class does not significantly decrease errors when proficiency is accounted for.

Table 3. Multiple Linear Regression Predicting Total Error Count (N = 60)

Predictor	B (unstd.)	SE	β	95% CI for B	p
Proficiency level (1–3)	–2.00	0.50	–0.56	[–3.0, –1.1]	< .001
University (0 = Kalasin, 1 = Valaya)	+0.30	0.80	+0.03	[–1.3, +1.8]	.70
Extracurricular exposure (0–15)	–0.05	0.06	–0.08	[–0.17, +0.07]	.40

Note. $R^2 = .20$ (adjusted $R^2 = .16$), $F(3, 56) = 4.70$, $p = .005$.

Boldface indicates a significant predictor. Proficiency level was coded such that higher values denote higher English proficiency. The exposure variable is a self-reported index of weekly English use outside the classroom (0–15). Confidence intervals (95% CI) are for the unstandardized *B* coefficients.

In summary, the results showed that misformation and omission errors were by far the most common error types among Thai EFL students, regardless of university. Between the two universities, there were no significant differences in error patterns. The frequency of errors was significantly and significantly influenced by the level of English proficiency, with students who demonstrated a higher level of proficiency committing significantly fewer errors. Conversely, university affiliation and extracurricular English exposure did not have any significant independent effects on errors once proficiency was considered. These findings address all three research questions and emphasize the importance of enhancing students' English proficiency in order to reduce grammatical errors. Nonetheless, simply enrolling in a particular institution or experiencing additional exposure to English outside of class (without corresponding improvements in ability) does not inherently result in enhanced grammatical accuracy.

6. Discussion

6.1 Interpretation of Key Findings

This study explores the patterns of grammatical errors in the academic writing of Thai EFL students, emphasizing the relationship between error frequencies and several factors, such as learners' proficiency, educational context, and exposure to English outside the classroom.

Prevalence of misformation and omission errors: The analysis revealed that misformation and omission errors accounted for a significant majority, surpassing three-quarters, of the errors identified in the essays. This aligns closely with earlier research carried out in Thai contexts (Kaweera, 2013; Watcharapunyawong & Usaha, 2013) and in other Asian EFL settings (Hasyim, 2002; Izumi, 2003), which have observed that learners frequently neglect essential grammatical components or use incorrect forms. The occurrence of these two error types underscores the developmental shortcomings present in L2 learners' interlanguage. Particularly, difficulties with morphology, including verb inflections and pluralization, along with function words such as articles and auxiliaries, continue to exist despite comprehensive instruction. The impact of the first language and the complexities of the rules regulating the second language contribute significantly to the occurrence of these errors. The inclination of Thai learners to drop articles and verb endings demonstrates the impact of negative transfer from Thai grammar, which does not include these morphemes. Their misformations, such as "he goed" or "she don't," frequently illustrate intralingual processes, including the overgeneralization of rules or the application of simplified forms. These patterns provide empirical evidence for interlanguage theory: learners construct interim linguistic systems that are systematic but deviate from the

target language, especially in inflectional morphology (Selinker, 1972). Our data confirm that the interlanguage of Thai EFL students at this stage is particularly weak in areas of morphology and functional grammar – a finding consistent with what Pienemann's Processability Theory would predict (morphological agreement and article use are relatively late-acquired features). The relatively low frequency of misordering errors, on the other hand, suggests that the basic syntactic structure (word order) is less problematic, likely due to first language congruence (both Thai and English rely on SVO order) and possibly because word order rules are more transparent or explicitly taught early on. This resonates with the concept of markedness and communicative effect: word order errors, which can severely distort meaning (global errors), were rare – a positive sign that learners have internalized fundamental sentence structure. Meanwhile, morphological errors (often considered "local" errors in terms of communicative effect) were plentiful, potentially because they don't always impede comprehension (e.g., "Yesterday he go to market" is understood despite the error) and thus might fossilize more easily if not rigorously addressed. In summary, the error profile observed reinforces a well-known theoretical point: grammar acquisition in L2 is uneven, with certain subsystems (morphology, closed-class items) lagging behind syntax or basic word order, and error analysis provides a "diagnostic window" into these developmental gaps.

Lack of institutional difference: No significant differences were found in error patterns between the two universities studied. Students from Kalasin and Valaya Alongkorn Rajabhat showed highly similar error frequencies and distributions. This is an intriguing result given the distinct contexts (one is a provincial university, the other in a more urban area; possibly different curricula). It suggests that institutional context alone did not strongly influence grammatical accuracy outcomes in our sample. One interpretation is that the broader Thai EFL educational environment produces similar results in students' grammar learning regardless of local variations. The similarities, such as the Thai national curriculum standards in high school and comparable challenges in English exposure, are more significant than any differences in teaching methods or focus among these institutions. The lack of institutional effect corresponds with the idea that internal learner factors (such as proficiency, motivation, etc.) and cross-cutting external factors (like L1 background) are more decisive in shaping interlanguage errors than the particular school or program. This finding has a reassuring implication: it means that the error issues identified (e.g., article omission, verb form misuse) are likely widespread among Thai learners, so recommendations based on this study have broad relevance in Thailand. It also indirectly suggests that both universities' English programs might be facing the same difficulties in getting students to overcome certain errors. A program demonstrating notably superior outcomes, such as a reduction in errors, could suggest a more efficient methodology. Given that this was not observed, it can be inferred that standard teaching methods across various institutions exhibit similar effectiveness (or constraints) regarding grammar accuracy. Alternative perspectives may suggest that our university classification did not adequately consider more complex contextual factors. Differences may arise among universities depending on the instructor or whether the course is specifically designed for English majors rather than students from other disciplines. The background of all participants in this study was somewhat standardized, as they were either English majors or enrolled in an English-focused program. In any case, the absence of a university effect shifts the focus to what does matter: the individual differences among students, principally proficiency.

Proficiency as the primary determinant of error frequency: The results demonstrate a distinct inverse correlation between the level of English proficiency and the occurrence of errors. Students exhibiting lower proficiency showed a notably increased frequency of errors, especially regarding misformations and omissions, when contrasted with those possessing higher proficiency. This aligns with both intuitive expectations and empirical evidence in the field of second language acquisition. This lends credence to the hypothesis that the precision of one's output enhances as they improve and expand their understanding of L2 grammar (Ellis, 2008). The fact that the difference was most pronounced between the "Low" and "Medium" groups suggests that many basic grammar issues get significantly sorted out as students move from a beginner to an intermediate level. By the time learners reach an advanced level, they still make errors but far fewer, and often those errors might be more idiosyncratic or complex (e.g., nuanced article choice, less frequent structures). This finding is congruent with the error gravity perspective: advanced learners' errors might also be less "grave" on average (often local errors that don't impede communication, like a wrong article), whereas lower-level learners make more global errors (missing verbs, etc. that can obscure meaning). The proficiency effect observed also supports Interlanguage developmental models that propose stages of acquisition; as learners transition from one stage to the next, certain errors diminish. For example, Pienemann (1998) posits that learners acquire grammatical morphemes in a sequence – our low proficiency group likely had not yet acquired some morphemes that the higher group mostly had. The substantial effect size for proficiency (partial $\eta^2 \approx 0.3$) underscores its critical role in determining performance. This indicates that in mixed-level classes, instructors should expect lower-level students to require significantly more assistance with basic grammar to align with their higher-level counterparts. It also indicates that curriculum should be structured so that by intermediate levels, students have learned these fundamental grammatical elements to diminish error rates, which seems to occur to some degree.

Extracurricular exposure not significantly improving accuracy: One of the more novel aspects of our study was examining if students who use English more outside class have better grammatical accuracy. The result was somewhat surprising: extracurricular English exposure did not significantly predict fewer errors in writing, once proficiency was accounted for. It was found that, exposure had no clear independent effect on reducing grammatical errors in the controlled analysis. This finding runs somewhat counter to the common assumption that "the more English you immerse yourself in, the more accurate you'll become." However, it resonates with certain research findings in SLA that input exposure alone does not guarantee intake or linguistic accuracy gains, especially in the realm of explicit grammar. For instance, Krashen's Input Hypothesis would argue comprehensible input is necessary for acquisition, but our finding suggests it may not be sufficient for eliminating grammatical errors in productive skills. One explanation is that informal exposure

tends to be receptive and meaning-focused, so learners might improve their listening or reading comprehension, pick up vocabulary, or get a feel for idioms, but still not internalize the precise grammatical rules needed for correct production. For example, a student may watch hundreds of hours of English TV and know phrases like "going to", "would have", etc., but without conscious practice or feedback, they might not consistently produce them correctly in writing (particularly under the pressure of an academic task). Another factor to take into account is the quality and type of exposure. The exposure measure utilized in this study was comprehensive and based on self-reporting. The distinction between passive exposure, which is exemplified by the act of viewing films without a comprehensive comprehension of grammar, and active utilization, such as the act of composing blogs in English, was not sufficiently clarified. The recorded exposure is primarily focused on inert, entertainment-oriented engagement, which is unlikely to improve accuracy. This is consistent with Shiyao's (2021) assertion that learners with lower competence did not benefit from automated feedback, as their inadequate grammatical foundation impeded the effective integration of the feedback. Exposure alone may not be advantageous for individuals with restricted learning experiences, as they lack the requisite framework to effectively integrate and process the information. The limited impact of exposure in our data suggests that it is crucial to prioritize form in instruction; learners may require targeted guidance and practice to rectify errors, which exposure alone does not provide (Long, 1998). This finding can be analyzed through the lens of Skill Acquisition Theory (DeKeyser, 2015), which suggests that the proceduralization of grammar rules necessitates both practice and feedback. Exposure can improve implicit knowledge or familiarity; however, the accurate use of grammar necessitates deliberate practice. Our high-exposure students didn't necessarily practice writing or get corrected outside class; they might just consume content. Without converting that input into monitored output, errors persist. It's also worth noting that our study looked at a specific outcome (academic writing under test-like conditions). Exposure could play a more crucial role in enhancing spontaneous oral fluency compared to careful writing, or it may require prolonged observation to discern subtle benefits. A larger sample size or an alternative approach to evaluating exposure, like tracking changes in accuracy over time at different exposure levels, may uncover specific effects. The findings indicates that systematic learning and skill development significantly enhance grammatical accuracy compared to casual exposure alone. This finding contributes to the ongoing discussion about the balance between input and practice: it subtly supports the views of scholars like DeKeyser and Truscott that certain aspects of grammar necessitate focused attention and cannot be fully acquired through exposure or implicit learning alone, especially in an EFL context with limited immersion.

6.1.5 Interplay of factors: The results as a whole highlight that learner proficiency encapsulates a lot: presumably, proficiency is the product of cumulative learning experiences, including instruction and possibly motivated self-study (which might involve exposure as well). In our regression, once proficiency was in the mix, other factors faded. It may suggest that competency holds greater significance compared to other pertinent attributes, including motivation, the quality of prior education, and skill. This highlights an important theoretical dimension: skill levels, often reflective of individual variances in second language acquisition (like aptitude or motivation), significantly impact results, particularly in terms of accuracy. The discovery that competence accounts for the majority of the variance aligns with prior studies indicating that individuals who attain higher proficiency levels typically invest more time or demonstrate a greater ability to assimilate grammar (Ellis, 1997). In the meantime, the consistency observed among institutions suggests that contextual variations were insufficient to influence the trajectory of interlanguage development in grammar — or that both institutions offered comparable environments for enhancing proficiency.

In summary, our results correspond with key hypotheses in the field of applied linguistics. The proposed hypotheses are as follows: a systematic occurrence of errors that diminishes with development (Corder); the significant impact of L1 transfer on the nature of errors (Odlin, 1989); and marked enhancements in grammatical accuracy resulting from increased competence and practice rather than mere exposure. The limited effect of exposure indicates a necessity for focused grammar instruction or, at a minimum, active engagement, underscoring that merely augmenting input is insufficient for attaining grammatical accuracy. This represents a significant data point in the current discourse on explicit and implicit learning.

6.2 Pedagogical Implications

The results present several significant implications for English language instruction in Thailand and comparable EFL environments:

6.2.1 Focus on Persistent Error Types

Despite ongoing challenges related to misinformation and omission errors, it is essential for Thai EFL programs to prioritize these grammatical components. The ongoing improvement of morphological accuracy is crucial, requiring the appropriate use of function words, including articles, auxiliaries, and pronouns within clauses, along with factors such as verb tenses, subject-verb agreement, and pluralization. Educators must acknowledge that permitting misconceptions to persist may result in reinforcement, as intermediate learners may not have a comprehensive understanding of these areas. The use of targeted error correction and feedback for various error types could bring significant benefits. For example, when assessing student writing, educators may concentrate on correcting the lack of articles or the misuse of verb tenses, as these are identifiable "rule-based" errors (Ferris, 2011) that students can enhance with the right guidance. Research on written corrective feedback indicates that concentrating on a limited number of manageable error categories can lead to considerable improvement (Bitchener & Knoch, 2010). Instructors might opt to systematically tackle omission and misformation errors by utilizing exercises, providing corrective feedback, and encouraging practice, instead of addressing each individual error separately. The results underscore the effectiveness of a focused feedback strategy. This may entail tasks that require students to supply missing grammatical elements or rectify incorrect forms within context, thereby deepening their comprehension of these structures and improving their application skills. Additionally, employing technologies such as error logs could prove beneficial, allowing students to record and

examine the issues faced in the classroom. When learners recognize patterns, such as "I often omit articles" or "I consistently select incorrect verb forms after 'did,'" this method proves beneficial, as it allows students to identify particular tendencies.

6.2.2 Addressing L1 Transfer Explicitly

Given that many errors derive from Thai-English differences, teachers should not shy away from contrastive analysis in the classroom. For instance, explicitly pointing out that "Thai does not use articles, but English does, here's when to use *the* vs. *a*" can be extremely helpful. Students might be making omissions simply because they are not fully aware or convinced of the necessity of these elements. Activities that highlight these differences – such as translating Thai sentences to English and focusing on inserting the "missing" elements – could increase learners' awareness of their L1 interference. This resonates with language awareness approaches and has been suggested by local researchers as well (Kaweera, 2013). Furthermore, instructors can create simple heuristics or checklists for students during writing (e.g., "Check if every singular countable noun has an article", "Check verb endings for past tense") as a self-editing strategy to catch omissions before submission. Training students in self-monitoring for these specific error-prone areas could gradually reduce their occurrence.

6.2.3 Differentiated Instruction by Proficiency

The substantial proficiency effect suggests that classes with varying proficiency levels should implement differentiated objectives. Students exhibiting lower proficiency levels are expected to gain from a more systematic approach to grammar practice, necessitating a thorough review of fundamental rules, including the use of auxiliaries in interrogative forms and the construction of the past tense. In contrast, students with greater proficiency can engage in more spontaneous writing, particularly emphasizing nuance and style. Educators can employ grouping strategies, such as pairing advanced students with those at lower levels for peer review, to identify errors that the latter may overlook. It is critical to practice carefulness since peers may unintentionally reinforce errors if neither participant is aware of the rule. Another strategy is to provide additional support for weaker students such as remedial grammar workshops or grammar reference materials in the students' L1 for clarity. Our findings confirm that if low-proficiency students are not brought up to speed, they will continue making many errors, which can be discouraging and impede content expression. Therefore, an investment in solidifying basic grammar at early stages (perhaps in first-year university English courses) will pay dividends in reduced errors in later years. It might even be warranted to stream students by proficiency for writing-focused courses, so instruction can be tailored (if resources allow).

6.2.4 Utilizing Technology for Grammar Practice

The absence of enhancement from exposure indicates that merely prompting students to view films is insufficient. Structured utilization of technology may assist in addressing errors. Grammar checking software, such as Grammarly or the grammar-check feature in word processors, can serve as effective learning tools. A recent study conducted by Utami & Mahardika (2023) found that using Grammarly resulted in a considerable reduction in specific errors, mainly omissions, in teachers' writing. While these tools should not be used in place of conventional teaching methods, instructors may integrate them by requiring students to compose essays, utilize a grammar checker, and subsequently deliberate on the modifications. This method integrates a comprehensive grasp of grammatical principles with an acquaintance with correct forms. The idea is to leverage technology's immediate feedback to address things like missing articles or wrong verb forms – categories that these tools are fairly good at catching. Of course, not all errors will be caught, and sometimes tools flag things that aren't errors, so guidance is needed. But if nearly half the errors are misformations that a tool can underline (e.g., "He go to" might get flagged to "He goes to"), it could train students to self-correct over time. Additionally, corpus-based materials could be used: showing students examples from learner corpora or native corpora. For example, showing them 10 native examples of "went to the _" could reinforce article usage by exposure to correct patterns (which is a form of guided exposure, as opposed to unmonitored exposure).

6.2.5 Encouraging Meaningful Exposure with Support

Althought the results did not show an independent effect of exposure on accuracy, this should not be interpreted as indicating that exposure has no value, but rather that it does not guarantee improvement in accuracy. Teachers are encouraged to promote extensive reading and interaction with English media to students, while also integrating activities that facilitate the transformation of exposure into learning. For example, extensive reading programs can improve vocabulary and perhaps intuitive sense of grammar. Teachers might incorporate small writing assignments that connect to what students watch or read outside (e.g., write a reflection on an English movie) – this way, exposure is tied to output, and the teacher can then correct errors in that output. Essentially, bridging informal exposure to formal learning contexts could make the exposure more effective. Additionally, teachers can instruct students on noticing strategies: when watching or reading, consciously pay attention to how certain sentences are structured, or mimic sentences in speaking/writing (Swain's output hypothesis suggests that pushing output helps notice gaps). Students who treat exposure as just entertainment might not benefit, but if they approach it with a learner's mindset – e.g., occasionally pausing a Netflix show to note a new phrase or repeating a line to practice pronunciation and structure – it could help internalize grammar patterns. To effectively prepare students to be active learners, teachers could share these strategies, even during extracurricular exposure.

6.2.6 Grammar in Context and Practice

Results indicate that accuracy is attained through practice. Therefore, it is crucial to provide ample opportunities for writing and constructive feedback in educational settings. Regularly giving short writing assignments, like journals and summaries, paired with targeted feedback on ongoing issues, could slowly diminish those errors. Research shows that regular, concentrated writing along with

feedback can greatly enhance accuracy throughout a semester (Hartshorn et al., 2010). Thai institutions might consider establishing a dedicated module or laboratory focused on "Writing Accuracy," or integrating systematic error correction activities into their current writing courses. Methods such as dictogloss, in which students reconstruct a sentence while emphasizing grammatical accuracy, can enhance awareness of missing or incorrectly sequenced elements in a communicative context.

6.2.7 Fostering a Positive Attitude Toward Accuracy

An area of potential concern is that students, and occasionally instructors, may prioritize communication over accuracy, particularly in EFL contexts where fluency is frequently emphasized to increase their confidence. Our results suggest that even advanced students may retain fossilized errors if accuracy is neglected, despite the importance of communication. It is imperative that educators cultivate a perspective that underscores the significance of precision in academic writing and that students possess the capacity to improve it through diligent effort. Engaging students in peer editing sessions that emphasize grammar allows them to collaboratively identify errors, transforming grammar correction into a more interactive experience instead of a solitary task performed solely by the teacher with a red pen. Moreover, recognizing improvement (for instance, illustrating to a student how their error count diminished from draft 1 to draft 2) can foster an emphasis on accuracy.

6.2.8 Implications for Curriculum Developers

The fact that articles and verb forms remain problematic suggests curriculum developers might need to revisit how these topics are taught in earlier stages. Are they taught explicitly enough? Are students given enough practice? In some contexts, grammar teaching has moved to a more implicit, inductive approach. Our findings might indicate that certain learner populations benefit from explicit instruction and drilling for stubborn forms (as long as it's not the only approach). For Thai EFL learners, earlier introduction of the concept of articles (maybe even in L1 comparison terms) and repeated practice throughout high school and university could help. It may also be beneficial to incorporate contrastive grammar modules in university courses that directly tackle common Thai-English differences, essentially preempting the typical errors. Some Thai educators (e.g., Songsiri, 2017) have advocated for such modules, and our data support that approach.

It is imperative to preserve stability when implementing these pedagogical implications. This method does not advocate for a complete return to traditional, formal grammar instruction; rather, it underscores the importance of a strategic focus on common errors within the context of meaningful communication. Form-focused instruction that addresses identified errors may be allocated to the remainder of class time after students have completed a communicative essay, thereby integrated form and meaning.

7. Limitations and Future Research

This study offered important insights; however, it also presented certain limitations. The sample included 60 students from two distinct universities, suggesting a constrained size and diversity. The data set provided valuable insights; however, enhancing generalizability could be achieved by including more institutions and a larger sample, such as universities from different regions of Thailand or those with extensive curricula, including international programs. Future research may include a multi-campus study to determine whether these trends are consistent among a broader spectrum of Thai EFL learners or if, for instance, students in English-medium programs demonstrate fewer errors as a result of greater exposure in academic settings.

Secondly, the assessment of extracurricular exposure depended on self-reported activity frequency, which might lack accuracy and fail to capture qualitative differences in exposure. Future research could include more precise measurements, such as language exposure logs or diaries where students document the specific timing of their English activities, or it may utilize monitoring software. Additionally, distinguishing between passive exposure and active use would be beneficial. Future research could investigate if the productive use of English beyond the classroom, such as writing blogs or participating in online forums, has a stronger correlation with writing accuracy compared to receptive exposure through watching or reading. This may clarify if specific forms of exposure are advantageous.

Additionally, this study was confined to errors present in a single, timed essay format. The academic environment and the temporal limitations of the prompt may have impacted the error rate. Students tend to make more errors when writing under exam conditions than when completing a take-home assignment. Furthermore, certain errors may be linked to performance factors such as slips or fatigue, rather than a lack of competence. Although it is often assumed that most errors reflect competence issues, future research may benefit from incorporating various writing tasks or drafts to distinguish between persistent errors and isolated errors. A longitudinal approach would provide valuable insights by tracking the same students over time to evaluate the decrease in their errors as they improve in proficiency or participate in specific practices. This could confirm if the reductions in errors associated with proficiency happen within individuals as they enhance their skills.

Error sources (interlingual vs. intralingual) were not examined in depth beyond qualitative reasoning. Future studies could attempt to systematically classify each error's likely source (through learner interviews or linguistic analysis). For example, using think-aloud protocols while students write could reveal whether they were translating from Thai structures or just guessing a form. Understanding sources can refine pedagogical interventions (for instance, heavy L1 transfer errors might be addressed differently than developmental overgeneralizations).

The focus of this study was on grammatical errors in writing. Lexical errors and errors at the discourse level (e.g., coherence issues) were not considered. Punctuation and spelling were also not examined, although Sermsook et al. (2017) found that these can also be frequent.

Although writing ability includes multiple elements, the focus was placed on grammar to ensure a targeted approach. The connection between grammar errors and various other challenges could be explored in future studies. For example, do students facing challenges with grammar also have issues with vocabulary or sentence variety? Is there a relationship between the presence of run-on sentences and the absence of certain types of errors, such as subject pronouns?

Another area for future research suggested by our results is to investigate fossilization. Some errors may persist even at high-proficiency level, as errors were still observed in the high-proficiency group. Why do these persist? Are they true fossilized errors or just random slips? Whether advanced learners can eliminate specific errors through targeted instruction, or whether some errors have become deeply ingrained, could be determined through long-term studies or focused interventions, as discussed by Han (2004) the fossilization in adult SLA. For instance, the persistent misuse of articles may be a fossilization issue; researchers could examine whether explicit instruction at later phases leads to development or if learners encounter an impasse.

With regard to pedagogical interventions, future experimental studies could be designed to evaluate the proposed strategies. For example, one could test a treatment group that receives intensive article usage training vs. a control to see if the error rate drops significantly (and if it sustains over time). Another interesting avenue is using technology in research: e.g., analyzing the effect of using a grammar checker on student revisions – do errors decrease by final drafts if students have access to such tools and guidance on using them?

Lastly, it is crucial to investigate students' perceptions of their error awareness. Do they believe that exposure is advantageous for them? Supplementary qualitative research methods, such as questionnaires and interviews, can be employed to enrich the context of our quantitative findings. Students who have significant exposure may develop greater self-confidence, potentially impacting their writing fluency, regardless of whether their accuracy improves. Their inability to emphasize clarity in interactions with the English media could have influenced the outcome. Instructors can enhance their methodologies by acquiring insights into various attitudes.

In the process of incorporating new complexities, our methodology focused intently on specific inquiries. The interplay of capability, scholarly attainment, and experiential knowledge significantly contributes to the quest for grammatical precision. Intervention studies, longitudinal tracking, and larger sample sizes will enable future researchers to expand upon these findings and enhance their comprehension of how Thai and other EFL learners can rectify enduring grammatical errors and elevate the accuracy of their English writing.

8. Conclusion

In conclusion, this study examined the grammatical error found in the writing of Thai EFL university students, identifying patterns and determinants of these errors. The primary conclusions are articulated as follows: In the context of misformations, Thai students exhibit a significant frequency of grammatical inaccuracies. This is most evident in the erroneous use of verb tenses and agreements, as well as in the omission of essential grammatical components, such as auxiliaries and articles. The two categories were responsible for nearly 83% of all errors, which underscores the persistent challenges associated with the use of function terms and morphological precision. In contrast, addition and misordering errors were uncommon, showing that students rarely add extraneous elements or jumble word order; basic syntactic structure is mostly intact, but morphological nuances are prone to error. No significant difference were found in error frequencies or patterns between the two universities studied, suggesting that these error issues are general among Thai learners and not strongly dependent on institutional context or curriculum. The key variable that influenced error rates was the level of learner proficiency; students who demonstrated a higher level of proficiency made significantly fewer errors. This emphasizes that grammatical accuracy enhances as language proficiency increases, and that learners with lower proficiency require additional assistance to overcome fundamental errors. Once proficiency was taken into account, extracurricular English exposure (e.g., through media, reading, or social interactions) did not substantially predict fewer errors. In other words, acquiring additional English skills outside the classroom did not necessarily lead to improved grammatical accuracy in writing; rather, formal education and a comprehensive understanding of the rules were more significant.

The results are of both theoretical and practical significance. The contributors provide a theoretical foundation for the developmental aspects of interlanguage and the specific challenges learners face with morphology and function words in foreign language contexts. The findings of their research demonstrate that input is inadequate for specific elements of language acquisition. Error correction necessitates focused practice and feedback, aligning with established theories of skill acquisition. The findings indicate a need for a dual approach in Thai EFL instruction: educators should emphasize targeted grammar teaching and offer corrective feedback on errors related to misformation and omission (such as tenses, articles, and the verb “to be”) to assist students in addressing these persistent issues. It is crucial for instructors to inspire students to interact with English outside the classroom through avenues that promote formal accuracy—such as writing blogs, participating in English discussions, or using language learning applications—since passive exposure alone is unlikely to yield substantial improvements in grammar. Establishing a classroom environment that emphasizes precision in conjunction with fluency, while providing students with self-editing strategies to recognize omissions and structural errors, can systematically reduce error rates over time.

This study, despite its limitations, contributes to the understanding of factors affecting L2 writing accuracy in EFL contexts. The approach toward achieving grammatical precision for Thai learners is an extended one, requiring the development of foundational skills and intentional effort, rather than depending on swift advancement through immersion or mere exposure. Future research should extend these findings by investigating the long-term progression of grammatical accuracy, evaluating tailored interventions for common error types,

and enhancing our comprehension of how external engagement with English can be leveraged to improve formal education. Addressing the recognized limitations, such as self-reported exposure and sample size, is crucial for enhancing the complexity and validity of the findings.

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Authors' contributions

Asst. Prof. Wilawan Tongsukkaeng led the study design and was responsible for data collection, data analysis, manuscript drafting, and manuscript revision. Asst. Prof. Boosaba Fangsaken contributed to data collection, data analysis, and manuscript revision. All authors read and approved the final manuscript.

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