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METHOD OF AI-BASED SECOND LANGUAGE ACADEMIC WRITING WITH GRAMMARLY

This article reveals a teaching method incorporating AI technologies into writing activity in a computer-mediated environment for second-language learners using the Grammarly application for Windows. The teaching method of AI-based second language academic writing with Grammarly is based on feedback strategies, basic AI skills, Grammarly's features, and learners' language proficiency. The writer can demonstrate the affordances of the application to the fullest extent, having the necessary disciplinary, linguistic and technological expertise. Low cognitive and behavioural engagement with feedback impedes the acquisition of writing skills. Grammarly is a supplementary, not autonomous, instrument in the university's instructional system. It should be integrated with traditional teaching methods to optimize learning outcomes. The Grammarly application contributes to developing students' writing skills: AI-corrected text is more accurate than text written without Grammarly's assistance. This automated writing tool can help learners produce accurate text, motivate them to develop their writing skills, check text for plagiarism and AI, evaluate text on language merit, and determine gaps in the teaching of writing. The affordances of Grammarly, which uses generative AI, are inferior to people's competencies so far.

Keywords: teaching method, Grammarly, academic writing, second language, artificial intelligence.

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МЕТОД НАПИСАННЯ НАУКОВИХ ТЕКСТІВ АНГЛІЙСЬКОЮ МОВОЮ ЯК ІНОЗЕМНОЮ З ЗАСТОСУВАННЯМ ОНЛАЙН-ПЛАТФОРМИ НА ОСНОВІ ШТУЧНОГО ІНТЕЛЕКТУ *GRAMMARLY*

Ця стаття розкриває методику викладання, що інтегрує технології штучного інтелекту в діяльність по написанню наукового тексту за допомогою додатку Grammarly для Windows студентами, які вивчають іноземну мову, у комп'ютерно-опосередкованому середовищі. Методика викладання академічного письма іноземною мовою на основі штучного інтелекту трунтується на стратегіях зворотного зв'язку, основних вміннях і навичках роботи зі штучним інтелектом, функціональних можливостях додатку та мовній компетентності студентів, які можуть повною мірою продемонструвати переваги додатку, маючи відповідні дисциплінарні, лінгвістичні та технологічні знання. Низький рівень когнітивного та поведінкового занурення у діяльність перешкоджає набуттю вмінь і навичок письма. Grammarly може бути додатковим, а не автономним інструментом в навчальній системі у закладах вищої освіти. Цей інструмент може бути додатковим, а не автономним інструментом в навчальній системі у закладах вищої освіти. Цей інструмент может письма: текст, виправлений за традиційними методами викладання для оптимізації процесу щодо розвитку вмінь і навичок письма: текст, виправлений за прадиційними методами викладання для оптимізації процесу щодо розвитку вмінь і навичок письма: текст, виправлений за прадиційними методами викладання для оптимізації процесу щодо розвитку вмінь і навичкими письми відповати студентам створювати грамотно написаним, ніж текст, виправний інструмент може допомагати студентам створювати грамотно написаним, ніж текст, мотивувати інструмент може допомагати студентам створювати грамотни інструмент може допомагати студентам створовати грамотни інструмент може допомагати студентам створювати грамотни інструмент може допомагати студентам створовати грамотни інструмент може допомагати студентам стровним інструмент може допомагати студентам стровним інструмент може допомагати студентам стровнам стровним інструмент може допомагати студентам стровним за прадити за прадити текст в діять на прадити в прадицівним за прадити в прадити текту в діять на прадити в п

Ключові слова: методика викладання, Grammarly, академічне письмо, іноземна мова, штучний інтелект.

The Kharkiv National University of Radio Electronics has licensed the Grammarly AI-powered application to enhance writing skills in a second language (L2). This paper aims to develop a teaching method incorporating AI technologies into writing activities in a computer-mediated environment for L2 learners using the Grammarly application. The intention is to obtain automated corrective feedback by integrating AI-based tools into the educational process.

The subject of this research is a second language writing method to guide students through Grammarly for Windows. Research on the efficiency of automated corrective feedback has taken on topicality with the advent of automated writing tools that can help learners produce accurate text, motivate learners to develop their writing skills, check text for plagiarism, evaluate text on language merit, and determine gaps in the teaching of writing.

This research methodology is based on Vygotsky's sociocultural theory and the paradigms of social constructivism and embodied realism. The sociocultural view on teaching and learning emphasises the role of the teacher who guides the student's thinking process: development follows learning (Kozulin, Gindis, Ageyev, & Miller, 2003, p. 249, p. 17). Mediation between the learner and the material to be learned is of two kinds: mediation through a teacher and mediation through an organised learning activity.

Social constructivism looks at cognition as a collaborative process, thought as internalised discourse, cognitive development as the internalisation of socially shared activities, and knowledge as a social construct located in language. Social constructivism focuses "on the interdependence of social and individual processes in the co-construction of knowledge" (Palincsar A. Sullivan, 1998). The

locus of knowledge is the social, not the individual, though social and individual processes are interdependent in the construction of knowledge (Storchak, 2022). Social constructivist perspectives assume that "meaningful learning occurs when people are explicitly taught how to use the psychological tools of their culture (like language, mathematics, diagrams, and approaches to problem-solving) and are then given the opportunity to use these tools to create common, or shared, understanding of some phenomenon" (Snowman & Biehler, 1997, p. 304).

In embodied realism, human-environment interaction unveils experience as an interactive process that involves neural and physiological constraints from the human being and characteristic affordances from the environment and other people (Johnson & Lakoff, 2002, p. 249). If people have learned a conceptual system, it is neurally instantiated in their brains and people "are not free to think just anything" (Lakoff & Johnson, 1999, p. 5).

L2 writing has been investigated by many researchers: Ferris & Hedgcock (2023), Hyland (2019), Manchón & Matsuda (2016), and Leki, Cumming, & Silva (2010), to name a few. The writing of academic studies, research papers, articles, reviews, white papers, technical reports, books, user guides, tutorials and critical perspectives is grounded on Grammarly's functionality (Aghisna Daroina et al., 2022; Angelie Lipalam et al., 2023), effectiveness (Perdana, Manullang, & Masri, 2021; Huang, Li, & Taylor, 2020), applications in education (Faisal & Carabella, 2023; Koltovskaia, Rahmati, & Saeli, 2023; Koltovskaia & Mahapatra, 2022), and AI-driven features (Fullmer, 2025; Warschauer et al., 2023). Priestley Joseph (1772, pp. xviii- xix) perceptively observed that the use of speech is based on custom rather than standard, and "the *analogy of language* is the only thing to which we can have recourfe [recourse]". He believed that the best forms of speech will, in time, establish themselves by their superior excellence. Generative AI actualizes speech that is based on both custom and standard.

According to the study by Huahui Zhao *et al.* (2025, p. 17), the facets of disciplinary writing proficiency are effective communication, appropriate style, register, effective use of vocabulary, and good coherence. Disciplinary knowledge and text editing are prerequisites of successful academic L2 writing (Huahui Zhao, Thi Ngoc Yen Dang, & Natalie Finlayson, 2025, p. 18). A high level of English language proficiency and familiarization with the rhetorical features of English text contribute to qualitative writing.

Zinkevich and Ledeneva (2021, p. 54) propose criteria for essay assessment, such as content, structure, coherence, grammar accuracy, vocabulary, and correspondence to the specified topic. The Grammarly writing algorithms take a formal approach to written texts, though they take into account the context. The analysis of mistakes can serve as the basis for developing a corrective course (Zinkevich, Ledeneva, 2021, p. 61). Grammarly can correct grammatical, lexical and stylistic errors and help the learner with the content and structure. The textual changes include addition, deletion, rewriting, reordering, recombining, substitution and mechanics (Na Luo, Ken Hyland, 2025, p. 6). Grammarly can be useful as a diagnostic instrument that reveals writing problems.

Some researchers-cum-teachers express students' opinion that "Grammarly appeared incapable of enhancing their writing competence" (Faisal & Carabella, 2023). It arouses controversy over whether Grammarly can be used for instructional purposes.

AI-powered tools encompass automated writing evaluation systems like Criterion, machine translation platforms like Google Translate, automatic text generation systems like OpenAI's ChatGPT, and automated written corrective feedback tools like Grammarly (Godwin-Jones, 2022). Grammarly can function as generative AI assistance, Grammarly for Windows and Mac, Grammarly editor, Grammarly browser extension, Grammarly for iPhone, iPad, Android, and Samsung Keyboard, and an Expert Writing Service.

The Grammarly official website, Google Scholar, DeepSeek, Perplexity, and ResearchGate offer literature related to the Grammarly writing application, an AI-powered proofreading tool that handles text electronically. Grammarly utilizes natural language processing, machine learning, deep learning, and high-quality training data. Grammarly's algorithms are updated in the cloud to adapt to the changes in the English language. These algorithms flag potential issues in the text and make context-specific suggestions to help with grammar, spelling, wordiness, style, punctuation, tone, plagiarism and more.

Grammarly can be accessed through a web app, browser extension, productivity software plug-in, and mobile device. The Grammarly application is used in Google Docs, email, social media, and the web. Grammarly for Windows can work on many websites and desktop applications with a floating Grammarly widget on the screen.

Grammarly is designed in two versions – free and professional (Free and Pro). The free version of Grammarly includes basic writing suggestions: grammar checker, spelling checker, punctuation checker, tone detector, auto-citations, and generative AI features. This version provides feedback on five error types: grammar, spelling, punctuation, conventions and conciseness. Apart from feedback on errors, Grammarly also provides an overall score from 1 to 100, representing the writing quality. The professional version includes free suggestions and additional writing suggestions such as clarity-focused sentence rewriting, tone adjustments, vocabulary improvements, fluency adjustments, customized style guides, tone profiles, and additional advanced suggestions. With Grammarly, academic writing is becoming the construction of text by both the writer and the application.

Academic writing is characterised by objectivity, impersonality, evidence, and reasoning. According to Smyth (1996, pp. 2–3), a scientific paper must present a balanced discussion of various views. Value judgements involving moral beliefs of what is right or wrong are not acceptable. In scientific papers, personal pronouns should not be used to avoid biases. Unless an opinion is attributed to someone else, it is understood to be writer's opinion. Phrases such as *in my opinion* or *I think* and the plural pronouns *we* and *our* should be avoided (Smyth, 1996, pp. 2–3). So, the academic text should be thoroughly analysed by learners to avoid moral beliefs, unsupported assumptions, superfluous phrases, and other moments that AI-powered tools might ignore. Regarding personal pronouns, formal writing is almost always written in the third person, suggesting leaving out the personal pronoun *your*.

Grammarly can check the text dynamically, as a learner writes, or holistically, the entire text. This application identifies a mistake and automatically underlines the word or phrase. The writer can click the underlined word or the floating Grammarly widget to see the suggestions.

The use of Grammarly for instructional purposes is inspired by its key features: 1) to identify an error; 2) to choose a synonym; 3) to fill in the underscored blank with a correct word; 4) to check for plagiarism and AI text; 5) to detect tone; 6) to reveal writing style; 7) to generate a list of topic ideas; 8) to draft an outline; 9) to create a research plan; 10) to create a personal dictionary; 11) to offer five dialect options; 12) to increase the impact of text; 13) to improve text; 14) to avoid copying and pasting.

1. The Grammarly AI-based algorithms identify various error types: grammatical, spelling, punctuation, sentence structure, vocabulary, clarity and conciseness.

- Grammatical errors: subject-verb agreement, verb tense consistency, and proper use of articles and pronouns.
- Spelling errors: typos, incorrectly spelt words, and words used in the wrong context.
- Punctuation errors: commas, semicolons, colons, and extra spaces.
- Sentence structure errors: run-on or unclear sentences and fragments.
- Vocabulary errors: using inappropriate, overly complex or obscure words for the context.
- Clarity and conciseness errors: wordiness, jargon, and the passive voice.
- 2. Open Grammarly, click "New document", and put text in. The writer can choose an appropriate synonym when clicking the word in the text.
- 3. Grammarly can choose a word if a sentence is written with an underscore as a placeholder. Then click 'Write with generative AI' and 'Improve it'. Grammarly will fill in the blank with the correct word.
- 4. Plagiarism and AI text. Click "Check for AI text & plagiarism" to run a Plagiarism Checker. Grammarly can identify copied or AI-generated text and provide citation suggestions.
- 5. Tone Detection: identify the tone of the text and provide suggestions accordingly. Grammarly's tone detector can analyze a text and provide a pragmatic approximation of the writing (e.g. sound confident or formal; make it diplomatic, optimistic, friendly or empathetic). Through this feature, L2 students can better understand if Grammarly's identified tone matches their intended tone, thus allowing them to enhance their pragmatics of writing.
- 6. Genre-specific writing style: identify the type of writing, such as academic writing, business writing, or casual writing, and provide suggestions accordingly.
- 7. Click 'Write with generative AI' and 'More ideas' to choose the function. For example, the author can generate a list of topic ideas. Select 'Brainstorm topics for my assignment' to generate a list of potential paper topics in seconds.
 - 8. Click 'Draft an outline'.
 - 9. Create a research plan. To do this, select 'Give me a research plan'. Grammarly provides a blueprint to streamline research.

Grammarly can add words to a personal dictionary. The writer might use specific words that Grammarly identifies as misspelt. If the writer adds the word to 'Your dictionary', Grammarly will not flag it as a mistake next time. To add the word to the dictionary, go to https://account.grammarly.com/customize, type the word into the corresponding field and click the button 'Assign'.

Grammarly offers five dialect options: American English by default, British English, Canadian English, Australian English, and Indian English.

The writer can click 'Increase the impact of your text'. After generating a corrected passage, click 'Accept' or 'Dismiss'.

Click the option "Improve it" and "More ideas" to make a choice, depending on communicative goals.

Grammarly is designed to work without copying or pasting except pasting an initial document.

Let us analyze the procedure to correct an initial passage. The learner should open Grammarly and click 'Settings'. Then, click 'New Document' and enter an initial passage. Next, click 'Goals' to set goals. Grammarly's algorithms identify potential issues in the text and make context-specific suggestions to help with correctness, clarity, engagement, delivery, and style.

The 'Review suggestions' are split into five categories: correctness, clarity, engagement, delivery, and style guide. Grammarly editor checks text and underlines critical issues. A list of suggestions can vary depending on the version of Grammarly (Free or Pro), an operating system, a browser extension, and a mobile device.

A correctness option initiates a proofreading tool that fixes spelling, grammar, sentence structure, and punctuation errors. Correctness shows structural and punctuation mistakes, the misuse of articles, subject-verb agreement, and verb-tense inconsistencies (Zinkevich & Ledeneva, 2021).

A clarity option ensures that text is concise, precise, and easy to read. Clarity helps rewrite subordinate, long-winded and blurred sentences, eliminate the passive voice, change wording and dangling modifiers (a modifier can be attached to a different word rather than the targeted one), split a sentence, and remove wrong words and phrases.

The engagement option points to empty and repetitive words, hackneyed phrases, dull sentences, redundancy, and gender-specific terms. Empty words and phrases such as 'simply', 'in fact', and 'kind of' add nothing to an utterance and should be excluded. According to Grammarly, the phrases 'it + be', 'there + be', and 'here + be' weaken the text; the sentences containing these phrases should be paraphrased or shortened without losing the meaning. This application helps to choose a different word.

Delivery refers to how a writer conveys information. This option highlights the use of 'etc.' in the text. The style emphasizes the language used in specific discourses, such as scientific discourse. Grammarly makes suggestions, and the user decides whether to correct or leave a word intact. Generative AI assistance can help discover new directions for work – saving time by generating research plans, structuring outlines, brainstorming ideas, and more.

Students expect feedback on what they have done. When marking writing assignments, teachers usually consider the features of content, register, accuracy, grammatical structures, the range of vocabulary, organization, cohesion and coherency to correct mistakes in the student's written text and discuss issues such as word choice, syntax, concord, collocation, and content.

Teacher feedback on writing assignments can be divided into two feedback levels:

- higher-order feedback that focuses on the discourse level, including content and organization;
- lower-order feedback that focuses on the form level, including vocabulary, grammar and mechanics (Koltakovskaia, 2022). The mechanical components of writing include handwriting, spelling, punctuation, and the construction of well-formed sentences, paragraphs, and texts (Harmer, 2007, p. 44).

The primary feedback strategies are direct, indirect, metalinguistic, and reformulation (Koltovskaia 2022, pp. 288, 311).

- 1. Direct Written Corrective Feedback (WCF). The teacher identifies an error and gives the correct form or structure; the student is expected to copy the correction into her/his text simply.
- 2. Indirect WCF. The teacher indicates that an error has been made by circling, underlining, or highlighting the erroneous form instead of providing a correction, and the student is expected to diagnose and correct the error on her/his own.
 - 3. Metalinguistic WCF. It is when the teacher does not supply the student with the correction but provides:
 - a) Use of error code/ category metalinguistic clues such as error codes (e.g., art = article) or error category (e.g., articles!).

- b) Brief metalinguistic explanation a brief grammatical description of the nature of error.
- 4. Reformulation. The teacher rewrites the portion of the student text to make it sound native-like while preserving the student's idea as much as possible (Bitchener & Storch, 2016; Ellis, 2009; Ferris, 2014).

The Grammarly writing application detects L2 linguistic errors and provides real-time feedback on error categories. Once a paper is uploaded to Grammarly's website, it provides:

- indirect feedback (i.e. it indicates that an error has been made by underlining the error);
- a metalinguistic explanation (i.e. it gives a brief grammatical description of the nature of the error);
- direct feedback (i.e. it gives a correct form or structure) (Figure 1).

Untitled document The Kharkiv National University of Radio Electronics has licensed the Grammarly writing application, which is quite accurate in detecting and correcting common L2 linguistic errors, to improve student second language (L2) writing outcomes.



Fig. 1 Example of Grammarly feedback

Writing is divided into several stages: planning, writing, revision, editing, and proofreading. Grammarly can be used at any stage. To test learners' cognitive and behavioural engagement in the writing process, we involved nine postgraduates in an experiment in checking, proofreading, and editing a scholarly text. Learners could independently run an initial text through Grammarly to get a corrected text using generative AI, the function 'Improve it', the domain 'Academic', the type 'Other' and the format APA. The quantitative analysis of nine Grammarly-corrected papers shows that the initial text, which consisted of 111 words or 785 signs, has been transformed into 86 words (583 signs) in one extreme and 162 words (1207 signs) in the other extreme. So variations are from 77.48% to 145.95% in words and 65.86% to 153.76% in signs. The results demonstrate that the writing outcome has improved regarding linguistic accuracy and formulaic expressions depending on learners' cognitive and behavioural involvement. Text accuracy and content improve with the Grammarly generative AI tool, though the learner generates senses and accepts or ignores suggestions.

The benefits of Grammarly are as follows: to identify students' typical mistakes; to provide real-time writing assistance; to enhance students' vocabulary; to specify domains: academic, business, general, email, casual, creative; to edit documents; to detect plagiarism and AI text; to integrate with Windows applications: Microsoft Office suite and web browsers; to offer a desktop application for Windows to check texts outside of web browsers and Office applications; to customize writing goals to tailor suggestions; to provide reports on readability scores, word count, and vocabulary diversity.

The main drawback to Grammarly is the lack of understanding of the passive voice: if the sentence is written in the passive voice, the writing application suggests writing in the active voice. The overall score indicated on the screen does not mirror an authentic text quality. With Grammarly, English learners' verbal communication skills will likely remain unchanged.

Thus, the teaching method of AI-based L2 academic writing with Grammarly is based on feedback strategies, basic AI skills, Grammarly's features, and the learner's language proficiency. Grammarly contributes to developing students' writing skills: AIcorrected text is more accurate than text written without Grammarly's assistance. The writer can demonstrate the affordances of Grammarly to the fullest extent if he/she has the necessary disciplinary, linguistic and technological skills. Low cognitive and behavioural engagement with feedback impedes the acquisition of writing skills.

The concept of an autonomous learner changes with the advent of generative AI. The AI writing tools should be integrated with traditional teaching methods to optimize learning outcomes, though so far, Grammarly's affordances are inferior to people's competencies. This application can be a supplementary instrument in the university's instructional system.

Future research will focus on enhancing instructional methods using automated written corrective feedback tools like Grammarly.

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