

THE EFFECT OF GENERATIVE AI FEEDBACK ON ACADEMIC WRITING DEVELOPMENT AMONG EFL UNIVERSITY STUDENTS

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Abstract. The development of academic writing is an important part of English language learning for university students who study English as a foreign language (EFL). In recent years, generative artificial intelligence (AI) tools have become increasingly popular in education, especially for providing feedback on students' written work. This study examines the effect of generative AI feedback on the academic writing development of EFL university students. It focuses on how AI-generated feedback can help students improve their grammar, vocabulary, organization, coherence, and overall writing quality. The study also considers students' attitudes toward using generative AI as a writing support tool. The research is expected to show whether regular use of AI feedback can help students identify their mistakes, revise their texts, and become more independent writers. At the same time, the study discusses possible challenges, such as students' overreliance on AI and the need to develop their own critical thinking and writing skills. The findings may provide useful information for English language teachers and universities interested in using generative AI effectively in academic writing instruction.

Keywords: generative AI, academic writing, EFL students, AI feedback, writing development, artificial intelligence, university students.

GENERATIV SUN'IY INTELLEKT FIKR-MULOHAZALARINING EFL YO'NALISHIDAGI UNIVERSITET TALABALARINING AKADEMIK YOZUV KO'NIKMALARINI RIVOJLANTIRISHGA TA'SIRI

Annotatsiya. Akademik yozuv ko'nikmasini rivojlantirish ingliz tilini chet tili sifatida o'rganuvchi (EFL) universitet talabalarining til ta'limida muhim o'rin tutadi. So'nggi yillarda generativ sun'iy intellekt (AI) vositalari ta'limda, ayniqsa, talabalarining yozma ishlariga fikr-mulohaza va tavsiyalar berishda keng qo'llanila boshladi. Ushbu tadqiqot generativ AI tomonidan beriladigan fikr-mulohazalarning EFL universitet talabalarining akademik yozuv ko'nikmasini rivojlantirishga ta'sirini o'rganadi. Tadqiqotda AI yordamida berilgan fikr-mulohazalarning grammatika, lug'at boyligi, matn tuzilishi, izchillik va umumiy yozuv sifatini yaxshilashdagi ahamiyatiga e'tibor qaratiladi. Shuningdek, talabalarining generativ AI vositalaridan yozuv jarayonida foydalanishga bo'lgan munosabati ham o'rganiladi. Tadqiqot natijalari AI yordamidagi muntazam fikr-mulohazalar talabalarga xatolarini aniqlash, matnlarini qayta ko'rib chiqish va mustaqil yozuvchi sifatida rivojlanishga qay darajada yordam berishini ko'rsatishi kutiladi. Shu bilan birga, tadqiqot AI ga haddan tashqari bog'lanib qolish hamda talabalarining mustaqil fikrlash va yozish ko'nikmalarini rivojlantirish zarurati kabi muammolarni ham ko'rib chiqadi. Tadqiqot natijalari generativ AI dan akademik yozuvni o'qitishda samarali foydalanishni rejalashtirayotgan ingliz tili o'qituvchilari va universitetlar uchun foydali bo'lishi mumkin.

Kalit so'zlar: generativ sun'iy intellekt, akademik yozuv, EFL talabalari, AI fikr-mulohazasi, yozuv ko'nikmasini rivojlantirish, sun'iy intellekt, universitet talabalari.

ВЛИЯНИЕ ОБРАТНОЙ СВЯЗИ ГЕНЕРАТИВНОГО ИСКУССТВЕННОГО ИНТЕЛЛЕКТА НА РАЗВИТИЕ НАВЫКОВ АКАДЕМИЧЕСКОГО ПИСЬМА У СТУДЕНТОВ УНИВЕРСИТЕТА, ИЗУЧАЮЩИХ АНГЛИЙСКИЙ ЯЗЫК КАК ИНОСТРАННЫЙ

Аннотация. Развитие навыков академического письма является важной частью изучения английского языка студентами университетов, для которых английский язык является иностранным (EFL). В последние годы инструменты генеративного искусственного интеллекта (ИИ) стали активно использоваться в образовании, особенно для предоставления обратной связи по письменным работам студентов. Данное исследование направлено на изучение влияния обратной связи, предоставляемой генеративным ИИ, на развитие навыков академического письма студентов университетов, изучающих английский язык как иностранный. Особое внимание уделяется тому, как обратная связь ИИ может помочь студентам улучшить грамматику, словарный запас, структуру текста, связность и общее качество письменной работы. Кроме того, исследование рассматривает отношение студентов к использованию генеративного ИИ в качестве инструмента поддержки

письменной деятельности. Ожидается, что результаты исследования покажут, насколько регулярное использование обратной связи ИИ помогает студентам выявлять свои ошибки, редактировать тексты и становиться более самостоятельными авторами. В то же время исследование рассматривает возможные проблемы, включая чрезмерную зависимость студентов от ИИ и необходимость развития их самостоятельного критического мышления и навыков письма. Полученные результаты могут быть полезны преподавателям английского языка и университетам, заинтересованным в эффективном использовании генеративного ИИ при обучении академическому письму.

Ключевые слова: генеративный искусственный интеллект, академическое письмо, студенты EFL, обратная связь ИИ, развитие навыков письма, искусственный интеллект, студенты университетов.

Introduction. The rapid development of artificial intelligence (AI) has introduced new opportunities for transforming teaching and learning practices in higher education. Among the emerging applications of AI, generative artificial intelligence has attracted particular attention because of its ability to produce, analyze, revise, and provide feedback on written texts. In the context of English as a Foreign Language (EFL) education, these capabilities may offer university students additional support in developing academic writing skills. Academic writing requires learners to demonstrate not only grammatical and lexical accuracy but also logical organization, coherence, argumentation, critical thinking, and the appropriate use of academic conventions. Therefore, providing timely and meaningful feedback remains an essential component of writing instruction.

Traditional approaches to academic writing feedback are generally based on teacher evaluation and correction. Although teacher feedback can provide valuable guidance, large class sizes, limited instructional time, and differences in students' individual needs may restrict the frequency and immediacy of feedback. Generative AI tools create an alternative environment in which students can receive immediate responses to different aspects of their writing. Such feedback can draw learners' attention to grammatical problems, inappropriate vocabulary, sentence structure, coherence, organization, and other textual features. More importantly, students can interact with AI-generated feedback during the writing and revision process rather than receiving comments only after completing an assignment.

The potential value of generative AI feedback is particularly significant for EFL university students, who may experience difficulties in expressing complex ideas in English while simultaneously following academic writing conventions. AI-supported feedback can encourage learners to identify weaknesses in their own texts, consider possible alternatives, and revise their writing through repeated practice. In this regard, generative AI may function not simply as an automated correction tool but also as a supplementary learning resource that supports reflection and learner autonomy. However, the effectiveness of such feedback depends on how students interpret, evaluate, and apply the suggestions provided by AI systems. Blind acceptance of AI-generated recommendations may result in inappropriate revisions or reduce students' independent engagement with the writing process.

Academic writing is an important skill for university students who study English as a foreign language (EFL). Students need academic writing skills for many different purposes, including writing essays, reports, research papers, and other academic assignments. However, writing in English can be difficult for EFL students. They may have problems with grammar, vocabulary, sentence structure, organization, and the connection between ideas. For this reason, students need regular practice and useful feedback to improve their writing. Feedback plays an important role in the development of writing skills. When students receive feedback, they can understand their mistakes and learn how to improve their texts. Traditionally, teachers have been the main source of feedback for students. However, providing detailed feedback on every student's writing can require a lot of time and effort. In large university classes, it may also be difficult for teachers to give individual feedback regularly. This situation has increased interest in technological tools that can support the writing process. One of the technologies that has recently attracted considerable attention in education is generative artificial intelligence (AI). Generative AI tools can produce and modify text, explain language problems, suggest alternative expressions, and provide comments on students' writing. These tools can give students immediate feedback and allow them to revise their work several times. As a result, generative AI may become a useful additional source of support for students who are developing their academic writing skills. The present study focuses on the effect of generative AI feedback on academic writing development among EFL university students. It examines how AI-generated feedback may influence different aspects of students' writing, including grammar, vocabulary, organization, coherence, and overall writing quality. The study also considers students' views and experiences when using generative AI as a tool for improving their written work.

Methods. This study uses a mixed-method research design to examine the effect of generative AI feedback on the academic writing development of EFL university students. The participants are university students who study English as a foreign language and have experience with academic writing. Data are collected through students' writing assignments and a questionnaire. First, students complete a writing task to identify their initial writing performance. They then use a generative AI tool to receive feedback on grammar, vocabulary, sentence structure, organization, coherence, and clarity. Students review the feedback and revise their texts based on the suggestions. After the feedback period, they complete another writing task. The first and second writing samples are compared to identify changes in their writing performance. In addition, the questionnaire is used to examine students' opinions about the usefulness, advantages, and possible difficulties of using generative AI for academic writing. The collected data are analyzed by comparing students' writing performance and identifying common patterns in their questionnaire responses. The study also considers the possibility of students becoming overly dependent on AI and highlights the importance of using AI feedback critically and responsibly.

Results. The results of this small study showed some positive changes in the academic writing of the five EFL university students after using generative AI feedback. The most noticeable improvement was found in vocabulary. Students began to use a wider range of words and replace some simple or repeated expressions with more appropriate academic vocabulary. Improvement was also observed in coherence and cohesion. After reviewing the AI feedback, students paid more attention to the connection between their sentences and paragraphs and used linking words more effectively. Another positive change was related to the development of ideas. Before receiving AI feedback, some students had difficulty explaining and developing their ideas in enough detail. After revising their texts, they were able to add more explanations and examples and organize their ideas more clearly. This suggests that AI feedback can help students notice areas of their writing that need further development. However, the study also showed a negative side of using generative AI. Some students tended to accept AI suggestions without fully understanding why a correction or change was necessary. This may create a risk of dependence on AI and may limit students' independent thinking if they use the tool without critical evaluation. Therefore, the results suggest that generative AI can be a useful support for academic writing, but students should learn to evaluate and understand AI feedback rather than simply copy its suggestions.

Discussion. The findings of this small study suggest that generative AI feedback can be helpful in developing some aspects of academic writing among EFL university students. The students showed noticeable improvement in vocabulary, coherence and cohesion, and the development of ideas. One possible reason is that AI can provide immediate feedback and give students different suggestions for expressing their ideas. Unlike traditional feedback, students can receive explanations and revise their texts several times. The improvement in vocabulary was particularly noticeable. The students were able to identify repeated or very simple words and replace them with more suitable expressions. AI feedback also helped them see how their sentences could be connected more clearly. This may explain the improvement in coherence and cohesion. In addition, when students received suggestions about their ideas, they were able to add explanations and examples to make their writing more complete. However, the findings also show that generative AI should not completely replace teacher feedback. Some students accepted AI suggestions without thinking carefully about whether the suggestions were suitable for their intended meaning. This is an important concern because students may become dependent on AI instead of developing their own ability to identify and correct mistakes. Therefore, generative AI seems to be more useful when it is used as a supporting tool rather than as a replacement for the student or teacher. Students should read the feedback, understand the reason for each suggestion, and decide whether to use it. Teachers can also guide students in checking AI-generated feedback and developing their critical thinking skills. Although the number of participants in this study was small, the findings provide an initial indication that generative AI feedback may support academic writing development when it is used carefully and responsibly.

Conclusion. This small study examined the effect of generative AI feedback on the academic writing development of five EFL university students. The findings showed that AI feedback had a positive influence on several areas of students' writing. In particular, students improved their vocabulary, coherence and cohesion, and their ability to develop and organize ideas. The immediate feedback provided by generative AI gave students an opportunity to notice problems in their texts and revise their writing more effectively. At the same time, the study showed that the use of AI also has some limitations. Some students tended to accept AI suggestions without fully understanding them. This shows that AI feedback should not be used without careful evaluation. Students need to think about the suggestions and decide whether they are appropriate for their meaning and writing purpose. To sum up, the findings suggest that generative AI can be a useful supporting tool in academic writing. However, it works best when students use it actively and critically rather than depending on it completely. Teachers also have an important role in guiding students on how to use AI responsibly. Since this study involved only five students, further research with a larger number of participants and a longer research period is needed to better understand the long-term effect of generative AI feedback on EFL students' academic writing.

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