

Student Acceptance of AI-Generated Feedback in Revising Argumentative Essays Among EFL Undergraduate Students

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Abstract

This study is about how students who are learning English as language use feedback from artificial intelligence when they edit essays that argue for something. The study also wants to find out what things affect how much these students use this feedback. The people who did the study used a way of doing things and they used a mix of numbers and talked to people to get their information. They worked with 30 students who are studying to teach English. These students had to write essays. Then edit them. The people who did the study looked at what the students changed in their essays. They also asked the students questions in surveys and in interviews. They used numbers to understand the information they got from the essays and the surveys. They used words to understand what the students said in the interviews. The students who are learning English as a language and the artificial intelligence feedback are very important to this study. The study is really about the English, as a foreign language student. How they use artificial intelligence feedback. According to the findings, most students were able to accept AI-generated feedback, especially when it came to language-related topics like grammar and vocabulary. The whole application category had the greatest uptake rate. On the other hand, adoption rates for argument development and idea organization were typically lower. Scores on the original and updated manuscripts increased significantly after utilizing statistical testing AI-generated feedback ($p < 0.05$). Additionally, although they still had trouble comprehending conceptual feedback, students' opinions of AI use tended to be favorable. These results suggest that while AI-generated feedback is useful in raising the caliber of EFL students' writing, especially in linguistic areas, it still has limitations when it comes to fostering the growth of argumentation abilities. To get the results using artificial intelligence in teaching people how to write should always have help from teachers. The use of intelligence in writing education needs to have teachers assisting with the learning process. This way the use of intelligence in writing education will be really helpful.

Keywords: AI-generated feedback, Uptake, Argumentative essay, EFL, Writing revision.

INTRODUCTION

The development of artificial intelligence (AI) technology has brought significant changes to the world of education, particularly in the learning of English as a Foreign Language (EFL) (Holmes et al., 2019; Zawacki-Richter et al., 2019). One increasingly widespread application of AI is the use of AI to provide feedback on student writing (Ranalli, 2018; Wilson & Roscoe, 2020). AI-generated feedback is helpful because it is fast and always available. This can be very useful when we are revising our writing for essays that need us to think critically and organize our ideas in a complicated way like argumentative essays. AI-generated feedback can support the writing revision process for these kinds of essays. The main advantage of AI-generated feedback is that it is consistent and available all the time, which's great for the writing revision process and, for argumentative essays (Bitchener & Ferris, 2012; Li et al., 2023).

People have done a lot of research on how feedback from computers helps students write better. Many studies have looked at this. The main thing they want to know is if AI-based feedback really makes students writing better. Researchers have studied this before. They are still studying it now because they want to know if AI-based feedback is helpful for student writing (Stevenson & Phakiti, 2014; Ranalli, 2018). These studies usually show that feedback made by Artificial Intelligence can help students get better at language things, like grammar and vocabulary and how to make sentences. Artificial Intelligence feedback is really helpful for students to improve their language skills, especially when it comes to grammar, vocabulary and sentence structure. The studies show that Artificial Intelligence generated feedback is useful for students to learn about grammar, vocabulary and sentence structure (Link et al., 2020; Wilson & Roscoe, 2020). Some studies have found that using Artificial Intelligence can actually make students more interested in learning. This is because Artificial Intelligence is interactive and it responds to the students. The use of Artificial Intelligence can really increase student learning motivation (Warschauer & Grimes, 2008; Xu & Warschauer, 2022). Most of these studies have looked at the writing results or how the text quality gets better after it is revised. They have not really looked into how students use the feedback that the artificial intelligence gives them. The students get feedback from the intelligence, but we do not know much about how they actually use this feedback from the artificial intelligence (Ellis, 2009; Storch, 2010).

So, when we talk about getting feedback on our writing the thing that really matters is how well we use that feedback. Feedback uptake is what we call when we look at how people understand and use the comments they get on their writing. This is a deal in classes where people are learning to write in a new language. Uptake is really, about how well learners get what the feedback is saying, remember it and then actually use it to make their writing better the time around. Feedback uptake is important because it helps us see if people are really learning from the comments they get on their writing (Ellis, 2009; Storch, 2010). We know from studies that students do not always use the feedback they get. This feedback can come from teachers or from technology. It seems that students only use feedback when they understand it and trust where it comes from. Students also need to be aware of how they think and learn, which is called awareness for feedback to really work. The feedback itself is not enough students need to be able to comprehend the feedback they need to trust the person or thing giving them the feedback. They need to have this metacognitive awareness for the feedback to be effective (Winstone et al., 2017; Han & Hyland, 2015). Most of the time when we look at studies about uptake, they are usually

about what teachers and friends say to each other.. When it comes to Artificial Intelligence feedback there is not a lot of research on how people use this kind of feedback from Artificial Intelligence systems. The uptake of Artificial Intelligence generated feedback is something that needs to be looked at closely (Ranalli, 2018; Wilson & Roscoe, 2020).

In the English as a Foreign Language context especially when we talk about students there is not a lot of research on how students use Artificial Intelligence generated feedback when they are revising their argumentative essays. Writing essays is a big part of being able to study at a university because it requires students to use language correctly, think logically, make sure their ideas are connected and be able to persuade people with their arguments. Argumentative essays are a part of academic literacy and students need to be good at writing them (Hyland, 2004). People are using intelligence tools more and more to help with writing. We still do not really understand how students think and feel when they get feedback from these artificial intelligence tools. This is especially true when students are trying to revise their work. We need to know more about how students use intelligence feedback to make their writing better. Artificial intelligence tools are becoming a part of writing instruction. However, we still need to learn more about how students interact with intelligence feedback during the revision process. This includes understanding how students think about intelligence feedback and how they behave when they get it (Xu & Warschauer, 2022; Li et al., 2023).

The gap in our knowledge shows that we need to look closely at how students work with feedback from artificial intelligence, especially when it comes to making decisions and using strategies to improve their writing. It is really important to understand how students who are learning English as language use feedback that is generated by artificial intelligence because this can help us teach writing more effectively and use artificial intelligence in a better way. So, this study is going to do two things: (1) look at how students who are learning English as foreign language use feedback from artificial intelligence when they are revising their essays and (2) find out what things affect whether or not students use feedback from artificial intelligence when they are revising argumentative essays. By doing this study we hope to learn more about how artificial intelligence can help students improve their writing and to give teachers some ideas, for how to teach writing effectively to students who are learning English as a foreign language.

METHOD

Research Design

This study used a mixed-methods approach to see how students use AI-generated feedback when they revise their essays. The mixed-methods design is helpful because it lets researchers get an understanding of things by combining numbers and words. This way they can learn more about how students use AI-generated feedback when they work on their essays (John W. Creswell & Vicki L. Plano Clark, 2018). This method was chosen to see how much feedback that is made by intelligence and why they use it. Numbers were used to see how much students actually use the feedback. At the time words were used to understand what students think about artificial intelligence feedback, why they use it and how they use it. Artificial intelligence feedback is very important to students. Students use intelligence feedback to help them learn. The reasons why students use intelligence feedback are interesting. Students have thoughts about artificial intelligence feedback.

The integration of both data types helps us understand the feedback process better. This process is not about using feedback, but it is also about how learners think and feel about it. The integration of both data types gives us an understanding of the feedback uptake process, which includes the application of feedback and the cognitive and affective responses of learners. When we look at the feedback process, we see that the integration of both data types is important. It helps us see how learners use feedback and how they think and feel about it. This is what the integration of both processes is about it is about understanding the feedback uptake process and the cognitive and affective responses of learners (Rod Ellis, 2009; Naoko Storch, 2010). Additionally other studies show that how students engage with feedback depends on their motivation and the situation they are in. These supports using a mix of research methods to understand this issue. Students' engagement, with feedback is influenced by their motivation and the context. A mixed methods approach helps capture this complexity. (Naomi E. Winstone et al., 2017). This design is good for understanding how students use AI-generated feedback when they revise their essays. It also helps us understand why students use this kind of feedback. The design is useful for figuring out the reasons, behind students using AI-generated feedback to revise their essay.

Participants

The students in this study were undergraduates studying English Education at a school where English's not the main language spoken. There were between 25 and 40 students in each Academic Course that focused on writing. We chose these students on purpose, making sure they were good at using technology to learn and had experience writing essays. These students were

good at writing essays and knew how to use digital tools for learning. from English Education courses, and familiar with technologies.

Instruments

They used a lot of things to get information, for this research like:

a. Argumentative Essay Writing Assignment

The students had to write an essay in two steps: the first draft and the revision. They used the essay to see what changes happened after they got the remarks from the Artificial Intelligence the Artificial Intelligences remarks were very important, to the students the students looked at the argumentative essay to identify changes that occurred after the Artificial Intelligences remarks were received.

b. AI Platform for Feedback

The teacher looked at the students' first attempts to write. They wanted to see how well the students' used language put their ideas in order and made their points clear. The students' writing was checked for the words they used the way they organized their thoughts and how well they got their arguments across. This was done to help the students improve their writing skills, especially when it came to using language organizing concepts and making their arguments clear. The writing was assessed to see how well the students could write, focusing on the language, concept organization and argument clarity, in the students' writing.

c. Uptake Analysis Sheet

This method was used to see how well the students understood the information they were given. For example, the students either fully understood it or used it did not pay attention to it or got it completely wrong. The technique helped to categorize the student's absorption of the input, such as when the students were integrated with the information slightly implemented it ignored it or misconstrued it.

d. Questionnaire

A questionnaire was used to collect data on students' perceptions of AI-generated feedback, including ease of use, trust in the AI, and level of understanding of the feedback.

e. Semi-structured Interviews

Interviews were conducted with selected participants to delve deeper into their experiences using AI-generated feedback and the factors influencing uptake.

Data Collection Procedure

Data collection was carried out in several stages as follows:

- a. Students were asked to write an initial draft of an argumentative essay based on a predetermined topic.
- b. The draft was then analyzed using AI to generate written feedback.
- c. Students received and studied the feedback from the AI, then revised their essays.
- d. The researcher collected the initial draft and revised drafts for analysis.
- e. Students completed the questionnaire after the revision process was completed.
- f. Interviews were conducted with several participants to deepen the qualitative data

Data Analysis Techniques

The data in this study were analyzed using two approaches:

a. Quantitative Analysis

Data from essay revisions were analyzed to identify the level of uptake of AI feedback using descriptive statistics, such as the percentage and frequency of each uptake category. Data from the questionnaire were also analyzed to examine trends in student perceptions.

b. Qualitative Analysis

Data from interviews were analyzed using thematic analysis techniques to identify key patterns related to student strategies in using feedback, barriers encountered, and factors influencing uptake.

c. Data Triangulation

To make the study more believable the people doing the study looked at data from things that were written questions that were asked and conversations that took place. They compared all of these things, which is called triangulation, to see if they got the results, from the written work the questionnaires and the interviews. This was done to increase the validity of the study.

RESULTS AND DISCUSSION

The way students used feedback made by intelligence was different. This was seen when we looked at the final versions of their essays where they had to argue for something. We found that students used this feedback in four ways: they used it completely, they used it a little bit, they did not use it at all, and they used it in the wrong way (Ellis, 2009; Storch, 2010).

The results show that most students used the feedback that was made by computers especially when it came to things like grammar, spelling and word choice. 60 To 70 percent of the feedback that had to do with language was actually used when the students were revising their

work. When it came to more complicated feedback, like how to organize their ideas and make a good argument, the students did not use it as much. This kind of feedback was only used 40 to 50 percent of the time. This tells us that students like to use feedback that's easy to understand and does not require them to think too much rather than feedback that requires them to think deeply and critically about the AI-generated feedback and the computer made feedback. Students tend to like the feedback that's straightforward and easy to fix, like the grammar and spelling feedback made by the computer rather than the more difficult feedback that requires a lot of thinking like the idea organization feedback and the argument development feedback, from the AI-generated feedback (Ranalli, 2018; Wilson & Roscoe, 2020).

Students did not always use the feedback they got. Sometimes they just made changes on the surface without really getting why they were making those changes. The feedback was not always. In some cases, it was just ignored or not used correctly. This happened when the feedback was not clear or was not relevant to what the students were writing. This is like what other research has found that feedback is more likely to be used by students when it's clear and specific and seems relevant to the students' writing. The feedback has to be clear and make sense to the students. They will not use it. Students will use feedback when it is specific and relevant to their writing. That is what this study found about the students and the feedback they got (Winstone et al., 2017; Han & Hyland, 2015).

Students generally liked the feedback that AI systems gave them. The AI feedback helped students when they were revising their work. It was especially helpful for making sure their language was correct and for making the revision process. Some students had trouble understanding the feedback about how to make their arguments better and develop their ideas. This shows that AI systems are good at helping with details of language, but they are not as good at helping with the bigger picture of writing like coming up with good arguments and ideas. AI systems are helpful for fixing language mistakes. Students need more help with things, like argumentation and idea development in their writing (Li et al., 2023; Xu & Warschauer, 2022).

The interview findings showed the thing. Students liked getting feedback that was straightforward and easy to understand. They found it easier to use this kind of feedback. On the hand feedback that was more about ideas and concepts was harder to understand and use. There were a thing that affected how students used the feedback they got. These things included how well they could speak the language, how experience they had with writing and if they trusted the computer program that was giving them feedback. Students who were better at speaking the

language and had written things were better at understanding and using the feedback. The students also had to trust the computer program that was giving them feedback. If they trusted it they were more likely to pay attention to the feedback and think it was helpful. Students who trusted the computer program and the feedback it gave them liked the feedback from the computer program because they thought it was correct and useful (Winstone et al., 2017).

The study shows that feedback made by Artificial Intelligence helps students with their writing. It really helps them get better at the basics of language like grammar and spelling and picking the words. This is what other studies have found too that tools that use Artificial Intelligence to help with writing are good at pointing out mistakes in language away and correcting them accurately. Artificial Intelligence generated feedback is very useful for students' writing development especially when it comes to things, like grammar and spelling and choosing the words (Ranalli, 2018; Wilson & Roscoe, 2020). Therefore, artificial intelligence can be a tool. It can improve how well English language learners write technically. In words, AI can serve as a valuable tool. It does this by enhancing the quality of writing. This is especially true for EFL learners. They can use AI to improve their writing skills. AI can help EFL learners write better. It does this by suggesting changes. These changes improve the quality of their writing. So, AI is useful. It helps EFL learners write technically. They can use it to get better at writing, in English.

The thing is, students do not really use the feedback that helps them organize their ideas and develop their arguments. This means that students are not very likely to pay attention to feedback that requires them to think critically. Other studies have found the thing. They show that students are more likely to respond to feedback that's straightforward and easy to understand rather than feedback that is more abstract or complicated. Students like it when teachers point out mistakes, but they do not really use the feedback that helps them think about their ideas, in a bigger way. The feedback that really helps students improve their work like idea organization and argument development is not used much as it should be (Han & Hyland, 2015; Winstone et al., 2017). These results show that using feedback made by intelligence is helpful only if the feedback is good and the students can understand it and use it properly. The students need to be able to make sense of the intelligence generated feedback and then actually do something with it. This means that the artificial intelligence generated feedback is not enough, on its own the students also need to know how to interpret and apply the intelligence generated feedback.

Furthermore, the study shows that students need to have reading and writing skills and know how to think about their own learning. This helps them understand and use feedback from

computers well. Students who are good at language and can manage their learning are more likely to benefit from computer-generated feedback. The study highlights that academic literacy, and metacognitive skills play a role in this. Good language skills and self-regulated learning really help students use AI feedback effectively (Ellis, 2009; Storch, 2010). Students usually like the idea of using Artificial Intelligence. Just because they like Artificial Intelligence does not mean they use the feedback from Artificial Intelligence in a good way. This tells us that just because students like technology it does not mean they will really learn from it. Students need to do more than, like Artificial Intelligence, to get good results from using Artificial Intelligence.

The things we learned are really important for teaching English as a language. We should think of intelligence as something that helps teachers, not something that replaces them. Artificial intelligence is good at helping with the use of language, but teachers are still necessary to help students think deeply about things like making good arguments, putting their ideas in order and carefully looking at feedback from others. When we use intelligence and have teachers help too, we can make a better place for students to learn a place that is fairer and works well (Li et al., 2023; Xu & Warschauer, 2022).

So, educators should use teaching methods that help students work with feedback that is made by intelligence. This means students need to learn how to understand the feedback, get help when they are revising and think carefully about what they're doing. If educators do these, students can really benefit from intelligence tools and get better at writing accurately and also develop their skills for writing in a more complicated way. Artificial intelligence tools can really help students and students can learn a lot from using intelligence tools and artificial intelligence tools can help students improve their writing skills.

CONCLUSION

The study shows that feedback made by intelligence really helps students who are learning English as a foreign language to get better at writing arguments. These students are especially good at fixing mistakes in their language when they get feedback about grammar and the words they choose. This means that artificial intelligence is good at helping students fix their writing quickly and correctly. This is what other studies have found too that artificial intelligence is good at helping with the problems in writing, like grammar and words, and it does this very efficiently. Artificial intelligence feedback is very useful for English, as a foreign language student because it helps them improve their writing by fixing linguistic accuracy problems (Ranalli, 2018; Wilson & Roscoe, 2020).

When we look at the comments about the picture like how ideas are organized and how arguments are built, we see that these comments are not used as much. This tells us that while artificial intelligence tools are helpful for making changes, they are not as good at helping with the hard thinking that is needed to come up with good arguments. What we found out is similar to what other researchers have found out which is that people have a hard time understanding and using comments that are more about general ideas and concepts and not just about small details (Han & Hyland, 2015; Winstone et al., 2017).

The results show that the person learning, including how they speak the language what they know about writing already and how well they understand the feedback are very important for using the feedback. Students usually think that artificial intelligence is a thing, but this does not mean they always use feedback in a good way. This shows that just thinking something is an idea is not enough to really use feedback from artificial intelligence. The person learning and the feedback from intelligence are important to really understand how to use the feedback. The feedback, from intelligence and the person learning need to work together for the feedback to be useful (Ellis, 2009; Storch, 2010).

This study shows that AI-generated feedback is good for helping people with the language part of their writing in English as a language. It is not good for helping people with the argument part of their writing. The study also found that people are more likely to use feedback if it's a good match for who they are as a learner and what the feedback is saying. The way people use feedback has to do with the person learning and the feedback itself. AI-generated feedback is helpful for features, in EFL writing.

Overall, this study shows that AI can really help with teaching writing. It only works well if teachers use it in the right way. Teachers are key to helping students understand feedback especially when it comes to writing skills, like reasoning and argumentation. So, combining AI with teaching methods is crucial. This way using AI in English as a Foreign Language writing classrooms makes sense. Is really helpful (Li et al., 2023; Xu & Warschauer, 2022).

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