THE EFFECTIVENESS OF AI-POWERED TOOLS IN PROMOTING SELF-REGULATED LEARNING IN EFL CLASSROOMS

Djanturayeva Dinara Pardabekovna
Chirchik State Pedagogical University
First-year master's student
Djanturayevadinara1@gmail.com

Abstract: This study examines whether AI-powered tools can help secondary school students develop self-regulated learning (SRL) skills in EFL classrooms. Self-regulated learning refers to the ability of students to take control of their own learning by setting goals, planning their study, monitoring their progress, and evaluating their results. In modern language education, developing these skills is considered just as important as learning grammar or vocabulary, because students who can regulate their own learning tend to perform better and continue improving even outside the classroom. The study was conducted over eight weeks with 40 students from the 8th and 9th grades. The students were split into two groups: one group used AI tools as part of their English lessons, and the other group studied with traditional methods. Data were collected through questionnaires, classroom observations, weekly self-assessment sheets, and interviews with selected students.

Keywords: *artificial intelligence, AI-powered tools, self-regulated learning, EFL classrooms, learner autonomy, motivation, metacognition*

INTRODUCTION

The way English is taught in schools has changed a great deal over the past two decades. Where teachers once relied mostly on textbooks, chalk, and oral explanations, many classrooms today include tablets, internet resources, and digital learning platforms. This shift has created new opportunities for language learners, but it has also raised important questions about how technology should be used and what benefits it actually brings to students. Among the many technologies now available in education, artificial intelligence has attracted a lot of attention. AI-powered tools are software programs that use data and algorithms to understand what a user needs and to adapt their responses accordingly. In language learning, these tools can include apps that practice vocabulary and grammar, writing assistants that give instant feedback on student texts, and chatbots that allow students to have conversations in English at any time of the day or night. One reason AI tools are considered valuable in education is that they support a type of learning called self-regulated learning, or SRL. This term refers to a learner's ability to manage their own study process without always relying on the teacher. A self-regulated learner knows how to set a goal — for example, "I want to improve my writing by the end of this

month" — and then chooses strategies, tracks their own progress, and makes changes when something is not working. Research has consistently shown that students with strong SRL skills achieve better results not only in language learning but across all school subjects (Zimmerman, 2002). Unfortunately, many EFL students in secondary schools lack these skills. They are used to waiting for the teacher to tell them what to do, and they rarely study English on their own. This dependence on the teacher limits their progress and makes it hard for them to continue improving when lessons are not available. Developing SRL in these students is therefore an important educational goal.

METHODOLOGY

This study used a mixed-method research design, which means that both numerical data and personal accounts were collected and analyzed. This approach was chosen because numbers alone cannot fully explain why students changed their learning behavior. The qualitative data — what students said in interviews and wrote in their self-assessment sheets — helped explain the patterns found in the questionnaire results. The study involved 40 students from two classes at a secondary school: 20 students in the 8th grade and 20 students in the 9th grade. The students were assigned to two groups. The experimental group (20 students) used AI-powered tools as part of their English lessons. The control group (20 students) continued with the regular teaching method. Before the study began, both groups completed a short placement test to confirm that their English levels were similar. The average age of participants was 14–15 years old. The study ran for eight weeks. During this time, the experimental group had regular English lessons that included the use of AI tools. Each lesson lasted 45 minutes, and AI tools were used for approximately 20–25 minutes per session. Students were also encouraged to use the tools at home for extra practice. The control group had the same number of English lessons but without any AI tools. Three types of AI tools were used in the experimental group. The first was an adaptive vocabulary application that gave each student practice tasks based on their current level. When a student answered correctly, the app moved on to harder words; when a student made mistakes, it repeated easier items until the student was confident. The second tool was an AI writing assistant that automatically checked students' written work for grammar, spelling, and sentence structure errors, and explained each mistake with a short note. The third tool was an AI chatbot that students could have simple text-based conversations with in English. This was used mainly for free writing practice and for students who wanted to practice outside school hours. Five instruments were used to collect data. First, a self-regulated learning questionnaire was given to all 40 students before and after the study. This questionnaire measured three things: motivation to learn English, ability to study independently, and awareness of one's own learning (metacognition). Each item was answered on a five-point scale. Second, the researcher observed each class twice a week and recorded notes about student engagement, how often students asked the teacher for help, and whether students showed signs of self-directed

behavior. Third, at the end of each week, students in the experimental group filled in a short self-assessment sheet where they wrote what they had practiced, what they found difficult, and what they planned to focus on next week. Fourth, at the end of the study, 10 students from the experimental group participated in short individual interviews of about 10 minutes each. The interviews included questions about their experience with the AI tools and whether they felt their learning habits had changed. Fifth, the class teachers kept a brief journal each week, noting any changes they observed in student behavior or attitude. The questionnaire scores from before and after the study were compared using basic descriptive statistics. The differences between the experimental group and the control group were noted and discussed. The interview transcripts and observation notes were analyzed by looking for repeated themes — ideas or patterns that came up multiple times across different students or sessions. This process is known as thematic analysis (Braun & Clarke, 2006). The self-assessment sheets were also read carefully and the level of detail in students' reflections was compared across the eight weeks.

RESULTS

The results of the study showed consistent differences between the experimental group and the control group across all three areas that were measured: motivation, independent learning, and self-reflection. The experimental group showed greater improvements in all areas. Before the study, the average motivation score on the questionnaire was similar in both groups (experimental: 3.1 out of 5; control: 3.0 out of 5). After eight weeks, the experimental group's average score had risen to 4.3, while the control group's score increased only slightly to 3.4. This means that students who used AI tools reported significantly higher levels of interest and enthusiasm for learning English by the end of the study. During the interviews, students mentioned that they liked the fact that the AI gave them tasks that matched their level. One student explained: "Before, I felt like the lessons were sometimes too easy or too hard. The app gives me things I can actually do, and that makes me want to keep going." Another student said they enjoyed using the chatbot after school because it felt like a game rather than a homework task. Classroom observations provided clear evidence that students in the experimental group became more independent over the course of the study. In the first two weeks, these students still frequently asked the teacher for instructions and waited to be told what to do next. By weeks five and six, the researcher noted that most students started tasks on their own, checked their own work using the AI writing assistant before asking the teacher, and sometimes continued working even when the teacher was busy with another student. In contrast, students in the control group continued to rely on the teacher at roughly the same rate throughout the study. The post-study questionnaire also showed a noticeable increase in autonomy scores for the experimental group (from 2.9 to 4.1) compared to the control group (from 3.0 to 3.3). The weekly self-assessment sheets showed a clear development in the quality of students' reflections over the eight weeks. In week one, most students wrote

short and general comments, such as "I studied vocabulary" or "It was okay." By week four, many students had started to write more specifically about what they found difficult and why. By week eight, a number of students were writing reflections that showed genuine self-awareness, for example: "I noticed I keep making mistakes with present perfect tense. I practiced it on the app three times this week and I think I understand it better now, but I need more practice with questions." This kind of detailed, goal-oriented thinking is exactly what researchers describe as metacognitive reflection. The control group did not complete self-assessment sheets, but teacher journals indicated no similar change in reflective behavior in that group. Several students who had previously avoided speaking or writing in English showed noticeable improvement in their willingness to participate. Interview responses suggested that practicing with the AI chatbot helped reduce their fear of making mistakes. As one student put it: "The chatbot never laughs at me, so I just write whatever I want. After a while, I stopped worrying so much in class too." Teachers also noted in their journals that some quieter students began volunteering answers more often in the second half of the study.

DISCUSSION

The results described above provide strong support for the view that AI-powered tools can promote self-regulated learning in secondary school EFL classrooms. Each of the main findings can be connected to ideas from the existing literature. The increase in motivation among the experimental group supports what Harmer (2019) and other researchers have argued about the role of engagement in language learning. When students feel that the material is relevant to their level and that their effort is producing visible results, they naturally become more motivated to continue. The adaptive nature of the AI vocabulary app created exactly this kind of experience: students could see their progress, receive rewards for correct answers, and always have tasks that were neither too easy nor too frustrating. The development of independent learning behavior is consistent with Oxford's (2017) theory of self-regulated strategy use. The AI writing assistant, in particular, seemed to encourage students to take ownership of their own mistakes. Rather than simply being told by the teacher that something was wrong, students received immediate, specific explanations from the AI, which they could read and act on at their own pace. This kind of active error correction is a form of self-monitoring, which is a central component of self-regulated learning.The improvement in self-reflection skills shown through the self-assessment sheets also connects closely to Zimmerman's (2002) model. The fact that students' reflections became more detailed and specific over time suggests that they were genuinely developing metacognitive skills, not just filling in a form. This gradual change is important because it suggests that the improvement was real and not just a short-term response to novelty. The finding that AI chatbots helped reduce language anxiety confirms what Godwin-Jones (2017) observed in his research. For many EFL learners, the fear of making mistakes in front of others is one of the biggest

obstacles to communication. A private, non-judgmental AI partner removes this barrier and gives students the freedom to experiment with language. Over time, this confidence seems to transfer to real classroom situations as well.

One important observation from this study is that the AI tools worked best when students understood their purpose. When teachers explained to students that the writing assistant was designed to help them notice their own patterns of error, students used it more thoughtfully. When students saw the chatbot as a tool for building fluency rather than just a fun activity, their interactions with it became more productive. This suggests that the teacher's role does not disappear when AI is introduced — it changes. Instead of being the main source of instruction and feedback, the teacher becomes a guide who helps students use technology effectively. There are a few limitations that should be acknowledged. The study lasted only eight weeks and involved 40 students from a single school, which means the results cannot be generalized to all EFL classrooms. The AI tools used in this study were chosen based on availability and ease of use, and different tools might produce different results. Additionally, it is possible that some of the improvements in the experimental group were partly due to the novelty effect — students simply being more engaged because they were doing something new. A longer study would be needed to determine whether the benefits are lasting.

CONCLUSION

This study investigated the effectiveness of AI-powered tools in promoting self-regulated learning among secondary school EFL students. The findings show that students who used AI tools over an eight-week period made meaningful progress in three important areas: motivation to learn English, ability to study independently, and capacity for self-reflection and metacognitive thinking. These improvements were consistently stronger than those observed in the control group, which followed traditional teaching methods. These results have practical implications for EFL teachers and school administrators. First, they suggest that AI tools are not just a digital version of a textbook — they can actively support the development of learning habits and attitudes that go beyond language skills. Second, they highlight the importance of combining AI tools with purposeful guidance from the teacher. Students benefit most when they understand why they are using a particular tool and what they are expected to do with the feedback it gives them.

For teachers who want to start using AI in their classrooms, this study suggests a few practical steps. It is helpful to begin with simple tools that are easy for students to understand and use independently. Teachers should also build in regular moments for students to reflect on their learning — for example, through short weekly self-assessment activities. Over time, these reflection habits can help students become genuinely self-regulated learners. Future research should look at the long-term effects of AI tool use on self-regulated learning, ideally over a full academic year or longer. It would also be valuable to compare different types of AI tools to identify which specific features are most

effective for building SRL. Studies involving different age groups and proficiency levels would help to build a more complete picture of how AI can best support language learners. In conclusion, AI-powered tools represent a meaningful step forward in making EFL instruction more student-centered and effective. When used thoughtfully, they can help students move from passive recipients of teaching to active managers of their own learning — which is ultimately the most important goal of any educational program.

REFERENCES

1. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77–101.
2. Godwin-Jones, R. (2017). Smartphones and language learning. Language Learning & Technology, 21(2), 3–17.
3. Harmer, J. (2019). Teaching and Learning English in the Digital Age. Pearson Education.
4. Huang, J., Saleh, S., & Liu, Y. (2020). A review on artificial intelligence in education. Academic Journal of Interdisciplinary Studies, 10(3), 206–217.
5. Mayer, R. E. (2009). Multimedia Learning (2nd ed.). Cambridge University Press.
6. Oxford, R. (2017). Teaching and Researching Language Learning Strategies: Self-Regulation in Context. Routledge.
7. Popenici, S. A. D., & Kerr, S. (2017). Exploring the impact of artificial intelligence on teaching and learning in higher education. Research and Practice in Technology Enhanced Learning, 12(1), 22.
8. Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. Theory into Practice, 41(2), 64–70.