

## The Impact of Artificial Intelligence Tools on EFL Students' Educational and Social Behaviours

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أثر أدوات الذكاء الاصطناعي في السلوكيات التعليمية والاجتماعية لدى طلبة الجامعات العراقية

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تهدف هذه الدراسة إلى الكشف عن تأثير أدوات الذكاء الاصطناعي (AI) على السلوكيات التعليمية والاجتماعية لطلبة الجامعة من دارسي اللغة الإنجليزية كلغة أجنبية. يتكون المشاركون من ٢٠٧ طالبًا وطالبة من قسم اللغة الإنجليزية، كلية الآداب، الجامعة المستنصرية، ومن قسم اللغة الإنجليزية، كلية الآداب، جامعة الأنبار. تم إعداد استبانة لجمع البيانات. أظهر تحليل إجابات المشاركين أن أدوات الذكاء الاصطناعي لها تأثير سلبي على السلوكيات التعليمية والاجتماعية للطلبة. ومع استخدام أدوات الذكاء الاصطناعي، لم يعد المشاركون يستخدمون استراتيجيات التعلم التي تتطلب ممارسة اللغة مع الأقران وضمن البيئة المحيطة بالطالب، بالإضافة إلى أن تعلم اللغة عبر الثقافة من خلال التفاعل مع المتحدثين الأصليين قد تم إهماله. ومن بين أهم هذه الاستراتيجيات التي لم تعد تؤدي أدوارًا في تعلم اللغة: لعب الأدوار، العمل الثنائي، المناقشات الجماعية، أساليب التعلم القائم على المهام، الألغاز التركيبية، المهام التعاونية، التعلم القائم على المشاريع، استراتيجيات مجتمع التعلم، مشاريع التعلم الخدمي، مناقشات المجموعات الصغيرة، حل المشكلات، مهام المناظرة، التعب، التعلم الاجتماعي، وأنشطة الكتابة التعاونية. وكانت استراتيجيات التعلم البديلة التي اتبعتها الطلبة قائمة على أدوات الذكاء الاصطناعي، مثل: الرسائل الصوتية، المناقشات عبر الفيديو، مدخلات الأقران المسجلة، النصوص الرقمية المشتركة، نصوص الكتابة الصوتية، توليد الأفكار، التدقيق اللغوي، تحرير التقارير، تقديم التغذية الراجعة، تحفيز المحادثة، ممارسة الاستماع الذاتي، التعلم الذاتي، التعلم المنظم ذاتيًا، الاستعداد لامتحانات، شرح المواد، استبدال المدرسين، واستبدال الأقران. وفي الختام، فإن الاستراتيجيات التي لها تأثير إيجابي على التعلم مدى الحياة لدى الطلبة قد تم إهمالها واستبدالها باستراتيجيات التعلم الفردي، واستراتيجية التعلم المعكوس، واستراتيجيات التعلم المنظم ذاتيًا، واستراتيجيات تعلم اللغة المستقل، والتعلم الذاتي للغة، ووحدات التعلم الذاتي الرقمية. الكلمات المفتاحية: أدوات الذكاء الاصطناعي، السلوكيات التعليمية والاجتماعية، التعلم الجماعي، والتعلم الذاتي.

### Abstract

This study aims to reveal the impact of Artificial Intelligence (hence: AI) tools on EFL university students' educational and social behaviours. The participants are 207 male and female students from the Department of English, College of Arts, Almustansyria University, and from the Department of English, College of Arts, University of Anbar. A questionnaire was prepared to collect the data. The analysis of the participants' replies revealed that the AI tools have a negative impact on students' educational and social behaviours. With the use of artificial intelligence tools, The participants no longer use learning strategies that **requires** practicing the language with peers and within the student's surrounding environment, in addition learning language vis culture through interaction with native speakers **has been** neglected. Among the most important of these strategies that no longer play roles in language learning are: role-play, pair work, group discussions, task-based learning methods, jigsaw puzzles, collaborative tasks, project-based learning, learning community strategies, service-learning projects, small group discussions, problem-solving, debate tasks, gamification, social learning, and collaborative writing activities. The alternative learning strategies that students followed were AI tools based, such as: voice messages, video discussions, recorded peer input, shared digital texts, voice writing texts,

generating ideas, proofreading, editing reports, providing feedback, stimulating conversation, practicing self-listening, self-learning, self-regulated learning, preparing for exams, explaining materials, replacing instructors, and replacing peers. In conclude, the strategies that have positive effect on students' long-life learning have been neglected and replaced with the individual learning strategies, flipped learning strategy, self-regulated learning strategies, autonomous language learning strategies, self-access language learning, and digital self-learning modules.

**Keywords:** Artificial Intelligence Tools, Educational and Social Behaviours, group learning, and self-learning.

### **Statement of the Study**

To achieve educational and learning goals, students employ various strategies, some consciously and others metacognitive, meaning they use strategies automatically without realizing they are learning strategies. Numerous studies (Wael et al., 2017; Jameel, 2023; Hasan, 2024; Hasan, 2025; and Jameel, 2025) have demonstrated the importance of using learning strategies in developing language skills and learning behaviors. Studies have also shown that cultural factors, motivation, social environment, peer interaction, and artificial intelligence programs significantly influence students' choice of learning strategies. Researches (Catherin, et al., 2025; Feng, 2025; and Yim & Su, 2025) have focused on the positive impact of artificial intelligence tools on students' learning strategies. This study aims to reveal the impact of artificial intelligence tools on the educational and social behaviors of university students, and to what extent students use learning strategies compared to artificial intelligence tools. In other words, has artificial intelligence influenced students' use of learning strategies?

### **The Aims of the Study**

This study aims to:

- 1- Reveal the impact of artificial intelligence tools on EFL students' educational strategies and social behaviours.
- 2- Students' use of learning strategies due to gender variables.
- 3- Students' use of learning strategies due to the type of university.

### **Questions of the Study**

To achieve the aims of the study, the following questions set:

- 1- To what extent does the AI tools affect EFL students' educational strategies and social behaviours.
- 2- Is there a difference between the students' use of learning strategies that can attribute to gender variable?
- 3- Is there a difference between the students' use of learning strategies that can attribute to type of university?

### **Significance of the Study**

The importance of this study stems from its focus on the learning strategies students use to learn English, especially in an era where artificial intelligence tools are integrated into all aspects of our lives, particularly in education. Therefore, the research findings can serve as a guide for university professors specializing in English, identifying the learning strategies commonly used and preferred by students, and the areas in which these strategies are currently applied. This will enable professors to develop teaching plans and adapt their teaching methods to align with students' learning styles, fostering a harmonious relationship between students and their instructors.

### **The Limits**

The generalization of the outcomes of the study are limited to:

- 1- Location: the study was conducted at the College of Arts, Almustansyria University, and College of Arts, University of Anbar
- 2- The Participants: The participants are 207 male and female students from the Department of English at the College of Arts, Almustansyria University, and from the Department of English, College of Arts, University of Anbar.
- 3- Instrument: A questionnaire was prepared to collect the data.

### **Literature Review**

Listening doesn't always rely primarily on original material, but it's preferable to engage with it in authentic situations for effective interaction. Furthermore, it would be difficult to train students in listening strategies continuously, as the focus would be on test performance and grades. While the primary goal of student learning is success, learning should be a lifelong process (Mendelsohn, 2006).

To train students in listening, they must be exposed to listening strategies and trained in their application. Training should be gradual so that students master what they hear naturally and spontaneously. After students understand listening strategies and their ability to apply them, they should be exposed to authentic material that

enhances their listening skills. (Almayez, et al., 2025). All university students majoring in English need self-confidence to speak the language. However, most students struggle with communication in English, due to limited exposure to the language both inside and outside the classroom, as well as a lack of knowledge about communication strategies, whether writing or speaking (Nadif, 2025). For learners to master the learning process, it is essential to understand learning as a change in their behavior resulting from exposure to new experiences that they can recall, whether cognitive or applied. Wheeling (1988: 7) identified three characteristics of learning strategies, particularly in the context of learning listening skills. Common definitions of learning strategies include metacognitive strategies, cognitive strategies, affective strategies, and psychomotor strategies. For learners to master the learning process, it is crucial to understand learning as a change in their behavior resulting from exposure to new experiences, whether cognitive or applied. Shamot (1995: 15) defined learning strategies as: "Metacognitive strategies are executive processes related to organizing and managing learning. They include strategies used to plan a task, monitor its progress, and evaluate its success after completion. Cognitive strategies are used during the execution of a task to facilitate understanding or production. Examples of cognitive strategies include expanding or using prior knowledge, grouping or classifying the elements to be learned, drawing conclusions while listening or reading, and writing down information to be remembered. Both cognitive and metacognitive strategies are important in all types of classroom learning tasks, and learners also use them outside the classroom in language interactions. The third category in this classification is social and emotional strategies, which include strategies such as asking questions for clarification, collaborating with peers on a language learning task, and using emotional controls such as positive self-talk to reduce anxiety." All university students majoring in English need self-confidence to speak the language. However, most students struggle with English communication, often due to limited exposure to the language both inside and outside the classroom, as well as a lack of knowledge about communication strategies, whether writing or speaking (Nguyen & Terry, 2017). Most students use memory strategies in language learning, along with cognitive and metacognitive strategies, which are common among language learners. Most other learning strategies are neglected and not used by students (Feng, 2025). Similarly, Zhou & Rose (2025) found that most students in schools use memory, cognitive, metacognitive, and social strategies. The environment is one of the most important factors in a student's foreign language learning. Social interaction plays a significant role in developing learners' linguistic abilities, and both the environment and content influence student learning, sometimes positively and sometimes negatively (Teng, 2025). Furthermore, individual differences play a crucial role in language learning, as students employ learning strategies according to their cognitive and perceptual levels. Therefore, not all students will use the same learning strategies in the same situations and with the same content (Duong & Nguyen, 2006). Among learners using the same learning strategies, some master the learning process while others struggle to acquire new skills. Therefore, several researchers have sought to understand the learning process, the factors contributing to its success, and the impact of strategies that are effective for some students but not others. However, it remains true that no single learning strategy is inherently superior to another, and no strategy is obsolete. This is evidenced by the fact that we continue to use various strategies and integrate them with technology (blended learning) (Lee, 2010). To focus on language learning strategies, they can be defined as the diverse steps learners employ to understand the foreign language system and grasp new experiences. Students utilize available resources, including skills, tools, learning methods, technologies, environment, and peer interaction, to learn problem-solving, self-directed learning, and critical thinking (Huang, F., & Derakhshan, 2025). In other words, students leverage their existing resources to acquire new knowledge and expand their existing knowledge base. The learning process is measured by students' ability to retrieve, apply, and utilize information effectively, and their capacity to benefit from feedback to enhance their learning (Huang & Derakhshan, 2025). One definition of learning strategies is that they are procedures that learners follow to facilitate the learning process. Therefore, we find that the majority of learners now resort to artificial intelligence (AI) tools in their learning, characterized by personalized (self-directed) learning. The goal of using AI tools is to learn new information within the learner's cognitive level. Learners use AI tools because of their ease of use, the features they offer, and their adaptability to the learner's level. AI tools allow learners to tailor the material to their cognitive level and request immediate, detailed feedback that facilitates understanding (Jomaa, et al., 2025)

## **Methodology**

### **The Participants**

The participants of this study are 207 male and female students from the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> grades from the Department of English at the College of Arts, Almustansyria University, and from the Department of English, College of Arts, University of Anbar. The total number of the participants is 242 who agree to participate in the study. To represent the pilot sample, 17 students were excluded from the total participants, and 18 invalid questionnaires were excluded from the total participants too, thus the actual number of the participants and who have valid questionnaires is 207. Table 1 shows the Participants' demographic data.

Table 1. Participants' demographic data

| University               | Gender |         | Total | Pilot |
|--------------------------|--------|---------|-------|-------|
|                          | Males  | Females |       |       |
| Almustansyria University | 57     | 66      | 123   | 11    |
| University of Anbar      | 33     | 51      | 84    | 6     |
| Total                    | 90     | 117     | 207   | 17    |

### The Instrument

To collect the data, a questionnaire was prepared from the previous related studies, books in the field of methodology and learning strategies. The validity and the reliability of the questionnaire were verified. The questionnaire was consisted of 8 dimensions with 65 items. After exposing it to a jury member the final version of the questionnaire consists of 5 dimensions with 44 items only.

### Validity of the Questionnaire

The face and content validity of the questionnaire were exposed to a jury member specialized in TESOL and TEFL, and educational technology. The jury members recommendations and suggestions were taken into consideration. The jury suggested some modifications to the dimensions and the items. The questionnaire consisted of 8 dimensions with 65 items. After the modifications were done, the final version of the questionnaire consists of 5 dimensions with 44 items only.

### The Reliability of the Questionnaire

Cronbach's Alpha is a statistical measure used to determine the reliability of a questionnaire, that is, the consistency of responses across different questionnaire items. The closer the Alpha value is to 1, the higher the reliability of the questionnaire. The questionnaire was distributed to a pilot group, and after 10 days, it was redistributed to the same students under the same conditions. The reliability of responses to the questionnaire items was calculated using Cronbach's Alpha, and the resulting value was 0.89, which is considered a high reliability.

### The Results

#### Result Related to the First Question

To answer the first question that states " To what extent does the AI tools affect EFL students' educational strategies and social behaviours?", a mean score and standard deviation were used. Table 2 shows the results.

Table 2. Mean scores and Standard deviation of the participants

| Dimension       | Item                                                           | Apply Mean | SD    | Does Not Apply Mean | SD    |
|-----------------|----------------------------------------------------------------|------------|-------|---------------------|-------|
| Listening Skill | 1. I listen only to peers' familiar accents.                   | 0.052      | 0.225 | 0.948               | 0.225 |
|                 | 2. I listen to peers when they repeat the teacher's words.     | 0.076      | 0.267 | 0.922               | 0.267 |
|                 | 3. I practice listening to speech as a process.                | 0.023      | 0.154 | 0.977               | 0.154 |
|                 | 4. I listen to peers' explanations to understand the material. | 0.038      | 0.195 | 0.962               | 0.195 |
| Speaking Skills | 5. I converse with those around me in English.                 | 0.011      | 0.101 | 0.991               | 0.101 |
|                 | 6. I participate in group conversations.                       | 0.042      | 0.204 | 0.958               | 0.204 |
|                 | 7. I share stories in English.                                 | 0.006      | 0.072 | 0.996               | 0.072 |
|                 | 8. I ask questions to stimulate speaking skills.               | 0.016      | 0.118 | 0.986               | 0.118 |

|                |                                                                                                     |       |       |       |       |
|----------------|-----------------------------------------------------------------------------------------------------|-------|-------|-------|-------|
|                | 9. I organize discussion groups with peers.                                                         | 0.001 | 0.003 | 1.002 | 0.004 |
|                | 10. I create real-life situations for communication.                                                | 0.027 | 0.169 | 0.972 | 0.168 |
|                | 11. I actively participate in verbal problem-solving.                                               | 0.059 | 0.235 | 0.944 | 0.235 |
| Reading Skills | 12. I practice reading with peers.                                                                  | 0.062 | 0.244 | 0.936 | 0.244 |
|                | 13. I read text aloud.                                                                              | 0.131 | 0.335 | 0.871 | 0.334 |
|                | 14. I share reading with peers.                                                                     | 0.011 | 0.101 | 0.991 | 0.101 |
|                | 15. I apply reading strategies appropriate                                                          | 0.069 | 0.253 | 0.933 | 0.252 |
|                | 16. I ask peers to evaluate my reading skills.                                                      | 0.011 | 0.101 | 0.991 | 0.101 |
|                | 17. Reading strategies have helped me improve my fluency.                                           | 0.189 | 0.392 | 0.813 | 0.392 |
| Writing Skills | 18. I plan for pre-writing                                                                          | 0.102 | 0.303 | 0.898 | 0.301 |
|                | 19. I think about the purpose for writing.                                                          | 0.016 | 0.118 | 0.984 | 0.118 |
|                | 20. I write a draft.                                                                                | 0.157 | 0.367 | 0.842 | 0.368 |
|                | 21. Edit the text after writing.                                                                    | 0.199 | 0.397 | 0.803 | 0.398 |
|                | 22. Share writing with peers.                                                                       | 0.067 | 0.254 | 0.931 | 0.252 |
|                | 23. Ask peers for feedback.                                                                         | 0.016 | 0.118 | 0.986 | 0.117 |
|                | 24. Feedback from the teacher helps me improve my writing skills.                                   | 0.286 | 0.453 | 0.716 | 0.452 |
|                | 25. I use concept mapping to achieve coherence and cohesion.                                        | 0.001 | 0.001 | 1.001 | 0.002 |
| AI Tools       | 26. Use AI tools for structured self-learning.                                                      | 0.955 | 0.203 | 0.044 | 0.201 |
|                | 27. I use AI tools to compose texts and write coherent writing.                                     | 0.938 | 0.244 | 0.065 | 0.246 |
|                | 28. I use AI tools to develop conversational skills.                                                | 0.953 | 0.218 | 0.048 | 0.214 |
|                | 29. I use AI tools to interact with new information.                                                | 0.963 | 0.195 | 0.038 | 0.193 |
|                | 30. I use AI tools to practice conversations.                                                       | 0.748 | 0.435 | 0.252 | 0.437 |
|                | 31. I use AI tools to suggest exam questions.                                                       | 0.987 | 0.118 | 0.015 | 0.116 |
|                | 32. I use AI tools to complete all academic tasks.                                                  | 0.996 | 0.077 | 0.006 | 0.072 |
|                | 33. I use AI tools to complete graduation research.                                                 | 0.533 | 0.498 | 0.468 | 0.497 |
|                | 34. I use AI tools to simplify material.                                                            | 0.991 | 0.101 | 0.011 | 0.101 |
|                | 35. I use AI tools as a substitute for peers.                                                       | 0.658 | 0.475 | 0.342 | 0.475 |
|                | 36. I use AI tools to solve exam questions, provide explanations, and identify the cause of errors. | 0.934 | 0.248 | 0.064 | 0.244 |
|                | 37. I use AI tools as a substitute for a teacher.                                                   | 0.969 | 0.185 | 0.035 | 0.183 |

|                                                                           |       |       |       |       |
|---------------------------------------------------------------------------|-------|-------|-------|-------|
| 38. I use AI tools to fill in gaps and retrieve information.              | 0.924 | 0.267 | 0.076 | 0.267 |
| 39. I use AI tools for role-playing.                                      | 0.503 | 0.501 | 0.497 | 0.501 |
| 40. I use AI tools to solve problems and prepare reports and assignments. | 0.885 | 0.317 | 0.112 | 0.316 |
| 41. I use AI tools to interpret meanings and translate texts.             | 0.644 | 0.478 | 0.358 | 0.474 |
| 42. I use AI tools to get feedback.                                       | 0.767 | 0.426 | 0.236 | 0.424 |
| 43. I use AI tools to paraphrase and summarize material.                  | 0.878 | 0.328 | 0.123 | 0.326 |
| 44. I use AI tools to explain grammar and linguistics.                    | 0.818 | 0.389 | 0.188 | 0.386 |

Table 2 shows that the students adopted highly the facilities of the AI tools in learning English more than the learning strategies that based on interaction with peers and social environment, in addition the interaction with the instructors. The AI tools have great impact on students' learning. The learning strategies have been neglected due the appearance of the AI tools.

### Results Related to the Second Question

The second question states "Is there a difference between the students' use of learning strategies that can attribute to gender variable?" mean scores and standard deviation were used. Table 3 shows the results.

**Table 3.** Mean and standard deviation of gender differences

| Gender  | No. | Mean | St.D. | df  | Calculated T-Value | Tabulated t-Value | Sig.            |
|---------|-----|------|-------|-----|--------------------|-------------------|-----------------|
| Males   | 90  | 0.54 | 0.36  | 206 | 0.49               | 2.00              | Not significant |
| Females | 117 | 0.57 | 0.32  |     |                    |                   |                 |

Table 3 shows that the male mean score is 0.54 with standard deviation 0.36 and the female mean score is 0.57 with standard deviation 0.32 and the calculated t-value is 0.49 with is less than the tabulated t-value 2.00 that indicates there is no significant differences between the male and the female students use of the learning strategies. Results Related to the Third Question The third question states " Is there a difference between the students' use of learning strategies that can attribute to type of university?" mean scores and standard deviation were used. Table 4 shows the results.

**Table 4.** Mean scores and standard deviation of type of university

| University               | No. | Mean | St.D. | df  | Calculated T-Value | Tabulated t-Value | Sig.            |
|--------------------------|-----|------|-------|-----|--------------------|-------------------|-----------------|
| Almustansyria University | 123 | 0.56 | 0.36  | 205 | 0.63               | 2.00              | Not significant |
| University of Anbar      | 84  | 0.59 | 0.34  |     |                    |                   |                 |

Table 4 shows that there is no significance difference between the students' use of learning strategies at the Almustansyria University and the University of Anbar, the Almustansyria University mean score is 0.56 with standard deviation 0.36 and the University of Anbar mean score is 0.59 with standard deviation 0.34, and the calculated t-value is 0.63 which lower than the tabulated t-value 2.00, this indicate that the students' use of learning strategies is the same at the both universities and there is no significant difference at 0.05.

### Discussion of the Results

The results revealed that the students based heavily on the AI tools in learning English at the departments of English. The social, cognitive, and affective, and psychomotor learning strategies are neglected. This means that the students no longer use the role-play, pair work, group discussions, task-based learning methods, jigsaw puzzles, collaborative tasks, project-based learning, learning community strategies, service-learning projects, small group discussions, problem-solving, debate tasks, gamification, social learning, and collaborative writing activities. The students use AI tools in learning, they implicitly use voice messages, video discussions, recorded peer input, shared digital texts, voice writing texts, generating ideas, proofreading, editing **reports**, providing feedback, **stimulating** conversation, **practicing** self-listening, self-learning, **self-regulated** learning, preparing for **exams**, explaining materials, **replacing** instructors, and **replacing** peers.

The student's social life has been also affected by the learning strategies, the students shift from cooperative, peer interaction, group work, peer-feedback, students-teacher interaction to self – learning, self-regulation, flipped learning strategy, self-regulated learning strategies, autonomous language learning strategies, electronic feedback, digital generating ideas. It is worth to mention that the students become well preparing for the exam and neglect long-life-learning.

The results revealed a serious warning against the excessive use of artificial intelligence (AI) tools and the neglect of lifelong learning strategies. By using AI tools, students abandoned many strategies, including attention span strategies, discovery learning strategies, problem-solving strategies, active interaction strategies, and cultural integration strategies. They also neglected language functions such as pragmatism, ambiguity, compensation, the use of authentic sources, politeness strategies, discourse analysis, and other strategies that can be compensated for by AI tools. These tools generate everything the learner needs without requiring effort or wasting time. In other words, while AI tools save time and effort and provide successful academic plans, they diminish the learner's intellectual and cognitive abilities, isolate them socially and from their surrounding environment, and transform education into self-directed learning and self-assessment aided by AI tools.

### **Conclusion**

In conclude, the strategies that have positive effect on students' long-life learning have been neglected and replaced with the individual learning strategies, flipped learning strategy, self-regulated learning strategies, autonomous language learning strategies, self-access language learning, and digital self-learning modules. There is no significance difference between male and female students on using learning strategies that attributed to gender and also, there is no significant difference between. In addition, there is no significance difference between male and female students on using learning strategies for the favour of the AI tool. Furthermore, there is no significant difference between Almustansyria University students and the University of Anbar students in using learning strategies.

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