من السبورة إلى الشات بوت: دراسة طولية حول دمج الذكاء الاصطناعي في صفوف اللغة الإنجليزية في العراق

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كيفية اقتباس البحث

الغزالي ، زهراء غانم اسماعيل ، من السبورة إلى الشات بوت: دراسة طولية حول دمج الذكاء الاصطناعي في صفوف اللغة الإنجليزية في العراق،مجلة مركز بابل للدراسات الانسانية، تشرين الثاني 2026،المجلد:16 ،العدد:11.

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From Chalk to Chatbots: A Longitudinal Study on AI Integration in EFL Classrooms in Iraq

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الملخص

تتناول هذه الدراسة دمج أدوات الذكاء الاصطناعي، لا سيما الشات بوت، في صفوف اللغة الإنجليزية كلغة أجنبية في العراق باستخدام منهجية نوعية طولية. تهدف الدراسة إلى استكشاف تأثير هذه الأدوات على كفاءة الطلاب اللغوية، ومستوى التفاعل داخل الصف، وتكيف المعلمين مع طرق التدريس الحديثة. جُمعت البيانات من خلال الملاحظات الصفية، والمقابلات شبه المنظمة، ومجلات انعكاس الطلاب، والاختبارات التشخيصية. أظهرت النتائج تحسنًا ملحوظًا في احتفاظ الطلاب بالمفردات ودقة القواعد، وزيادة التحفيز والمشاركة، إلى جانب تطوير استراتيجيات تدريسية تكيفية. تسلط الدراسة الضوء على إمكانات الذكاء الاصطناعي في تحويل التعليم التقليدي في سياقات محدودة الموارد، وتوصي بدعم سياسات دمج هذه التكنولوجيا بشكل مستدام.

Abstract
It explores the incorporation of Artificial Intelligence (AI) applications especially chatbots to course books on Iraqi EFL using a long-standing qualitative approach.

Impact on students language proficiency; classroom participation and how teachers react to modern teaching approaches are constructed in the essay. To collect data, classroom observations, and semi-structured interviews were followed by student reflection journals and diagnostic tests. Findings indicated that vocabulary retention and accuracy significantly improved and participants were found to become more motivated by adaptive teaching strategies. It highlights the potential of AI to transform traditional education in resource-challenged environment and stresses the need for policy support for sustainable incorporation.

Chapter One

Introduction

1.1Background of the Study

A dramatic shift in ELT has occurred over the last decade as a byproduct of digital advances. Among these, AI has received much attention in natural language learning fields. Technology-enhanced tools, skill as conversational agents (known as Chatbots), have showed promise in engaging learners, offering instant responses and communicative learning environments.

In spite of these worldwide developments, English language teaching in Iraq is largely influenced by traditional methods that involve teacher-fronted lessons with a low level of technology integration and reliance on repetitive memorization. Filling this gap between innovation and the established practice in Iraq requires localized investigation to find ways AI can be thoughtfully integrated into the Iraqi classrooms. In addition, while AI has been studied in educational contexts there is a lack of long term studies measuring the lasting influence it has on learners and educators vulnerable settings.

The current study seeks to explore the slowly but steadily integration of AI tools mainly chatbots, in an Iraqi EFL classroom. Instead, it has as its aim the recording of a change from traditional to AI-aided teaching in teachers' approaches over time, as well as attention to teacher response to students and student engagement, both within the task itself and on language tasks.

1.2Statement of the Problem

While AI has been incorporated in education to a great extent around the world, its use in Iraqi EFL teaching is sparse. The main gap in this regard is that we have no empirical research on the impact of AI technologies such as chatbots in practice or educational trajectories at Iraqi schools. With no such research, those making decisions about the digital in pedagogical innovation within education receive a lack of evidence.

This deficit is addressed in the present study where prolonged exposure to AI-based language tools among both learners and teachers of EFL classrooms in Iraq is examined..

1.3Research Questions

1. What are the visible impacts of applying AI-based ChatBots on the EFL students' participation and language proficiency over an extended period in Iraqi EFL classroom?
2. What are the attitudes of Iraqi EFL teachers toward using AI in teaching?
3. What are pedagogical/infrastructural factors that promote or inhibit sustained incorporation of AI tools in EFL teaching and learning in the long run?

1.4Objectives of the Study

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1. To examine the impact of chatbot technology on the development of students' second language learning and classroom dynamics from a longitudinal perspective.
2.To investigate Iraqi teachers' perception, preparedness and flexibility towards AI-mediated teaching.
3.To discover systemic and practical difficulties faced by the language teach ers in 58 D. MagrabI integrating AI into L2 instruction in Iraq.

1.5 Significance of the Study

The current results are of potential theoretical and practical value. In theory, it further extends the realm of understanding in relation to AI applications in foreign language teaching including from an Iraq-specific perspective. Operationally, it can inform educational planners and curriculum designers on best practices for the incorporation of AI technologies in an effective and pedagogically appropriate manner.

From a longitudinal perspective, the research provides insights into AI tools' mediation of instructional practices and learner progression over time.

1.6 Limitations of the Study

Several limitations must be acknowledged. The research will be conducted in certain secondary schools only and this may affect the generalization of findings. There also may be technical limitations to consider that could lead to differential access, availability of devices and digital literacy skill levels between both students and educators. Finally, loss of participants over time might lead to breach of data continuity.

1.7**Definition of Key Terms**

Artificial intelligence (AI): Tools and applications used for embedding logical reasoning in computer programs.

Chatbot A special form of a bot that is programmed to simulate conversation, frequently used for educational support in language learning environments.

EFL (English as a Foreign Language): The study or instruction of English in a non-English-speaking country.

Longitudinal study: A type of research where the same variables are measured over a long period of time.

Chapter Two
Review of Related Literature

2.1**Introduction**

This chapter is a literature review to scrutinize contributions made by prior research on the use of Artificial Intelligence (AI) in English as a Foreign Language (EFL) teaching. It discusses the conceptual underpinnings, implementation challenges, and potential for AI in education worldwide utilizing chatbot technology. The chapter concludes with pedagogical offenses and defenses that mark the emergence of AI in language teaching as well as challenges in EFL contexts and opportunities afforded for teachers and learners, what is missing from literature worldwide especially emerging countries such as Iraq.

2.2**Theoretical Framework**

The application of AI in language learning is based on several different theoretical models. For example, constructivist theories of learning espouse the use of interactive digital tools through their focus on learner autonomy, discovery and constructed knowledge that is context-specific. In AI-through tools such as chatbots learners can interact in a simulated conversation pattern that reflects real use of a language and results in its meaningful usage.

Similarly, Vygotsky's sociocultural theory underpins discussion of AI as a mediating artifact in language education. Well-designed chatbots may be semiotic tools that scaffold learner progress through the ZPD. In addition, advance of technology is recognized as an indicator of expanding access to knowledge networks based systems such as connectivism (DallAlba, 2012), where AI becomes a prerequisite in the modern learning ecosystems.

2.3 Artificial Intelligence in Education

AI describes computer systems able to do things that typically require human intelligence. AI technologies in education include intelligent tutoring systems, automated scoring systems predictive analytics and chatbots. They are designed to customize instruction, be responsive to learner needs on a personal level, and be evidence-based regarding continuous practice values. And studies have found that AI solutions can enhance motivation, engagement and academic performance when implemented correctly.

AI is increasingly gaining acceptance as important because of the developments in NLP, ML and big data analytics. These apps can help school systems move from the delivery of static content to dynamic and interactive learning experiences. But most of the literature about AI in education is based on higher educational institutions or more technically advanced areas, while little attention has been paid to primary/secondary levels in less-developed countries.

2.4**Chatbots in EFL Instruction**

Chatbots are artificial intelligence–powered chat programs that mimic human conversation. In language learning, the cards are used for vocabulary drill, grammar review and reading practice, as well as in spelling presentations and to demonstrate TTS systems. Unlike conventional language technology, chatbots respond contextually and adaptively, leading to more personal and engaging interactions.

Research suggests that chatbots provide several advantages in EFL teaching: learners experience less anxiety about speaking when practicing with a chatbot, they can practice without fear of negative feedback, and exposure to the target language is increased. Moreover, chatbots are not bound to class-room restrictions and thus provide students with the opportunity to practice target language on any occasion in any place.

However, some limitations remain. Chatbots can miss out on the cultural awareness and delicate understanding of linguistic nuances a human teacher will have. Furthermore, the response quality and performance of chatbots also really depend on their design, training data and usability of the interfaces.

2.5 World-wide trends on language teaching with AI Both at primary or secondary education and in higher education, Artificial Intelligence applications have become more popular within the academic field of natural language process ing for quite some years since 2000s as one of sophisticated human langu age activities such as thinking, speaking and writing etc.

AI tools are being integrated into language curricula in many educational systems for purposes of Differentiated Instruction, Automatic Assessment and Language Learning Immersion. In nations such as China, South Korea and Finland, AI technologies are backing at-home and in-school education. Government-led programs in these settings frequently deliver funding, infrastructure and teaching support for sustainable inclusion.

Implementation of AI 3.3 The challenge is different in devoting countries, which face problems including the poor infrastructure for technology deployment, people's lack of digital literacy, and policy support shortfall. Nonetheless, pilot endeavors and small-scale experiments have produced positive evidence about engagement of learners as well as the increase in language proficiency.

2.6 The Iraqi Context

The traditional Iraqi eduation system has focused on lecture-based learning and rote memorisation, and made little so of interactive tools. 648 Habibullah Sohrabi, et al. Malayeri & Soori not participate actively in the teaching and learning process (ELLR) above), but they were passively engaged due to their external force(in particular using books for English language instruction and suchlike teacher talk explanations whereby minimum opportunity is given to students for interaction). Although the Ministry of Education has shown willingness towards digital transformation, its execution is still constrained by financial, infrastructural and administrative bottlenecks.

Only a few studies have investigated the implementation of AI technologies in the Iraqi EFL context thus far. The majority of the literature presently available is about ICT use in general, or teacher attitudes towards technology. This dearth of AI-specific application experience, particularly within the school domain, highlights the importance of targeted research.

2.7**Related Studies**

Listas de Referencia Chatbots have been investigated in EFL teaching in recent studies. For instance, research carried out in East Asian contexts has shown that chatbot use can enhance learner motivation and conversational fluency. The literature from Europe has also identified the potential of chatbots for formative assessment and dynamic error-correction.

A research conducted by Winkler & Söllner (2018) also stressed the relevance of chatbot design in establishing learning success. Another study by Fryer et al. (2020) found that retention of vocabulary and grammar structures was higher for users of AI chatbots than learners using conventional methods.

Nevertheless, these studies are mainly conducted in advanced technological scenarios. There is a significant knowledge gap regarding the effectiveness of chatbot-based education over time in diverse settings such as Iraq and with fewer resources.

2.8 Research Gap

Although AI's contributions to language education are gaining greater recognition, the literature does not feature yet enough longitudinal studies that trace the development of these technologies in classroom praxis over time. In addition, very little is reported on integrating AI in the particular socio-educational setting of Iraq. This study fills both of these gaps by taking a classroom-based, longitudinal inquiry approach to chatbot adoption in Iraqi secondary schools.

2.9 Summary

This chapter presented a literature related to AI in education, chatbot integration: background section:(3)in the EFL learning settings and technological implementation in Iraq. It detailed theoretical bases for AI-powered learning and teachers' perspectives on the benefits and drawbacks of chatbots in language learning. The review has highlighted the need for longitudinal and context-grounded research to

understand implications of AI on teaching-learning in under-resourced countries which need to be addressed through empirical studies. The purpose of this study is to attend to the above gap in research by looking at the Iraqi EFL classroom.

Chapter Three: Methodology

3.1 Introduction

The Research Design, Setting, Participants, Data Collection Instruments and Methods of Analysis The research design is discussed in this chapter of the study. Due to the longitudinal design of this study, the procedure was devised to document both immediate and future developments concerning AI chatbots integration in Iraqi EFL classrooms. The research is qualitative and aims to understand the experiences of teachers and learners throughout the study.

3.2 Research Design

Current Research The present study employs a longitudinal qualitative methodology in order to capture changes over time. It was this methodology that was selected to explore the dynamic impact of chatbot on EFL and classroom dynamics, learner engagement, and pedagogical adaptation. By following up longitudinally and cross-sectionally of collection, this study attempts to trace the course of AI integration developments in education.

3.3 Setting of the Study

The study was carried out in a representative community of public secondary schools in an urban area of northern Iraq. The schools were selected for their willingness to participate, availability of basic technical facilities (eg, Internet connection and computers), and presence of competent English language teachers willing to experiment with new teaching approaches. Study setting The learning environment in the current study mirrors that of a typical Iraqi classroom, where traditional teaching and nonexistence or rarity of AI-based resources prevail.

3.4 Participants

There were two main groups of participants in this study:

EFL Teachers:

5 English language teachers participated. All had five or more years of teaching experience and different degrees of familiarity with education technology. They got some basic instruction on how to apply AI chatbots in the classroom.

EFL Students:

Some 120 students from years 10 and 11 were in the incident. The participants were divided into the experimental and comparison groups for the purpose of analyzing the effect of chatbot. Voluntary participation was obtained after obtaining parent consent.

3.5 Instruments of Data Collection

The instruments used for data collection included;

Classroom Observations:

Frequent observations were used to record classroom interactions, student involvement and pedagogic evolution. Fieldnotes and observation matrices were generated consistently over the study period.

Semi-Structured Interviews:

Teachers were interviewed in three phases: pre, during, and post chatbot use. The purpose of these interviews was to gain insight into the teachers' perceptions, instructional difficulties and the impact of what they have observed.

Student Reflection Journals:

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In the experimental group, some students were selected to write weekly reflections on how they found interacting with the chatbot. These stories provided some insight into students' attitudes and perceived value of learning.

Diagnostic and Follow-Up Tests:

Language development was tested using pre- and posttests on the two groups. The tests measured vocabulary grammar & sentence level proficiency.

3.6 Procedures of the Study

The research took six months and was composed of three stages:

Phase One (Preparation):

Teachers were trained in the use of chatbot apps. pre-tests, initial interviews, and classroom observations were used to gather the baseline information.

Phase Two (Implementation):

AI chatbots were added as adjunctive tutors in the experimental classrooms. Teachers employed them for reinforcement work, while students engaged with the bots to practice grammar and conversation.

Phase Three (Follow-up):

Post-\f6tests and end\f7 interviews took place. Monitoring continued to examine shifts in classroom practices and teacher approaches. Student journals were collected and assessed at the conclusion of the term.

3.7 Data Analysis

Verbatim transcriptions and thematic analysis were made of interview, journal and observation note data. This approach could help to uncover patterns, themes and variations in answers. Pre- and post-test diagnostic test quantitative data were examined descriptively in order to monitor a progression of success for students throughout testing between pre-intervention and post-intervention.

A method of triangulation was used to cross-validate results against other sources. It helped to provide a more precise and subtle understanding of the findings.

3.8 Ethical Considerations

Participants were also protected in accordance with all ethical standards. Consent was obtained from teachers and students (or from parents for minors). Anonymity was preserved by allowing individual participants and schools to remain anonymous. They were given the choice of not entering and dropping the research at any time without penalty.

3.9 Summary

Chapter Three reported the study methodological framework that included research design, participants, instruments and procedures used in data analysis. Given that the integration of AI in EFL Classroom in Iraq is a changing process, I utilized the longitudinal qualitative design. Chapter 4 will discuss the findings obtained from populated spreadsheets and will analyse the key findings against the research questions.

Chapter Four: Results and Discussion

4.1 Introduction

Chapter 4 reports the results of that analysis, using data from classroom observation, teacher interviews, student reflection journals and diagnostic testing. The purpose of the analysis is to respond to the research questions about the impact on student's language, teachers' perceptions and challenges and benefits in using AI chatbot during

the period. Finally, the implications of the findings are discussed in relation to existing work.

4.2 Impact of AI Chatbot Integration on Student Language Mastery and Engagement

4.2.1 Language Proficiency Development

Statistical significant difference was observed when pre-test and post test scores between the group subjected to intervention and control were measured. Students which had regular exchanges with AI chatbots made better progress in terms of vocabulary retention and grammatical accuracy. For instance, the average vocabulary test score increased by 18% in the experimental group as compared to only 7% in the control group.

Students also showed improved sentence building ability, fluency in class discourse as depicted in the observation notes. This indicates that chatbot-driven practice actually added value for language learning beyond simple rote memorisation.

4.2.2 Student Engagement

Data derived from student reflection journals showed that the chatbot enhanced interactivity and motivation in learning. Many students were eager to talk about the concept of language practice in a non-judgmental space. They found chatbot's instant response and personalized learning rate helpful in reducing speaking anxiety.

4.3 EFL Teachers' Beliefs and Adjustments

4.3.1 Initial Reactions and Concerns

Teachers were cautiously optimistic about the use of chatbots in the beginning. There was scepticism about the reliability of technology and how this fitted in with what was already being taught in schools. Additional workload and technical support also found to be a concern.

4.3.2 Pedagogical Adjustments

Teachers became more acquainted with chatbots and gained confidence in using chatbots as the study went further. They started developing supported activities that connected chatbot acts with classroom tasks and thus enriched the instructional process. Interviews indicated that teachers valued the chatbot's function in delivering additional practice and opening up class time to more communicative activities.

4.3.3 Perceived Challenges

Barriers involved inconsistent internet access, occasional inaccuracies in the chatbot's responses and differences in students' digital literacy. In spite of this, teachers reported that the majority of problems were surmountable and could be reduced with some experience and technological support.

4.4 The pros and cons of AI long-term use in EFL Iraqi context

4.4.1 Technological Infrastructure

Scarce infrastructure served as a major hurdle. Poor connectivity and lack of digital devices hampered smooth execution. The study emphasizes the need for investment in technologies to support AI adoption.

4.4.2 Teacher Training and Support

The provision of ongoing professional development was essential to gaining teachers' acceptance and effectiveness in using AI tools. Continuing technical and pedagogical support nurtured flexibility and novelty in teaching techniques.

4.4.3 Student Autonomy and Motivation

Increased learners' autonomy was promoted by the long-term consumption of a chatbot. Students began to take an active interest in practicing after class, showing that they are more motivated and empowered with their language learning.

4.5Summary of Findings

The use of AI chatbots in Iraqi EFL classes had positive effect on students' language proficiency and motivation based on increased vocabulary learning and better use of the grammar. The teachers' attitudes have changed from doubt to acceptance as they adopted the technology in their pedagogy. This wasn't to say that the operation was without its technical and infrastructural challenges, but it underlined a huge potential for AI in educational innovation.

4.6Discussion

These findings build on previous work which has provided evidence that AI chatbots can be beneficial for language learning (Fryer et al., 2020; Winkler & Söllner, 2018). The improvement in student performance demonstrated in this work is an indication of the effectiveness AI-driven systems to support classical training practices, particularly within limited real speaking opportunities.

The shift in teachers' attitudes highlights the importance of professional development and institutional support for technology integration. Infrastructural and digital literacy problems are consistent with the lackluster situation observed in some developing countries and may require holistic investment.The present investigation further contributes to the literature as it provides longitudinal evidence from a neglected context, and hence important information on ways in which AI can be integrated into EFL through sustainable practice.

. 5 Conclusion, suggestions and future research

5.1 Conclusion

This longitudinal study was conducted to explore the utilization of AI chatbots in EFL a roomatice environments in Iraq. The findings indicate that PAI tools can help to enhance learners' L2 and motivation and promote their autonomy. The students who interacted with chatbots performed significantly better in retention of vocabulary, grammatical accuracy and communicative fluency. Moreover, the chatbot engagement created a helping environment, served as an anxiety management and gave motivation to daily exercising.

From initial skepticism, teachers' attitudes in the study shifted toward acceptance and pedagogical adjustment. Intensive training and ongoing technical support were critical to its ability to make this transition. However, the barriers such as technical unavailability of [network] from schools, unreliability of [internet] connection and uneven digital literacy levels between students and teachers affected their ideal fruition.

The research also offers valuable longitudinal study data, in the context of a developing country situation, on an AI-informed learning environment and demonstrates the potential as well as constraints posed by AI intervention in traditional face-to-face EFL class settings. It stands to show the comprehensive scaffolding and strategic placing necessary to unleash AI on its educational promise in Iraq.

5.2 Recommendations

"Based on these findings, further research needs to be recommended.

Investment in Technological Infrastructure:

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Administrative steps should also be taken in order to improve digital infrastructure for education such as providing reliable internet service and digital mediums that can be accessed on all devices to enable AI powered learning.

Comprehensive Teacher Training:
There needs to be ongoing PD opportunities around AI literacy and pedagogical integration! Teachers need more than proficiency in how to use technology; They also need training on AI-integrating tasks which they can adapt into their curriculum.

Curriculum Development:
The curriculum designers should identify areas in language pedagogy where AI tools may be meaningfully integrated with due regard for the learning objectives and assessment criteria.

Technical Support Systems:
Ease of access to technical assistance for teachers and students can address challenges of use and maintenance of AI devices.

Promoting Learner Autonomy:
Always remind your learners to endeavor into AI outside the classroom, fostering autonomy in learning and language usage.

5.3 Suggestions for Future Research
Quantitative and Mixed-Methods Studies:
It would have been great if we had more suphovi cases, as well another interesting direction for future research is to gather quantitative data to the impacts of AI language learning tools in aiding students learn.

Cross-Regional Studies:
Other cross-sectional studies from student samples in various Iraqi regions and at different educational levels (such as primary, tertiary) might have offered more perspectives regarding the consolidation of AI acceptance.

AI Tools Beyond Chatbots:
Studies exploring other AI products, such as intelligent tutoring systems, automated essay scoring and virtual reality would also contribute to know better what is happening in technology-enhanced language instruction.

Longer-Term Longitudinal Studies:
A longer-term longitudinal study may provide more information concerning sustainability, pedagogical effects and student retention.

5.4 Summary
The use of AI chatbots in the Iraqi EFL classroom provides tremendous prospects to experiment, motivate and develop language. While some challenges remain, strategic investments in infrastructure, reskilling and curricula can help ensure that the roll-out of AI is more likely to succeed. This study opens opportunities for more inquiry into AI and the re-modelling of LLLT practices especially in countries like Iraq.

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