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Research article

Perceptions and Challenges of Integrating Artificial Intelligence in English Teaching in Iraqi Secondary Schools: A Comparative Study of Private and Public Sector

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ABSTRACT

This study compares the private and public education sectors using a quantitative survey approach to examine the use of artificial intelligence (AI) in English teaching among 189 secondary school teachers in Iraq. Significant sector differences are revealed by the results, which show that private school teachers were more aware of AI, had better facilities, and used it more in the classroom. Inadequate teacher training (84.1%), deficiencies in tech infrastructure (78.3%), financial limitations (71.4%), a lack of institutional support (69.3%), and teacher opposition to change (63.0%) are the main obstacles to implementation. However, educators in both fields demonstrated favorable opinions regarding AI, acknowledging its benefits for improving student engagement, personalizing instruction, giving instant feedback, and fostering the development of 21st-century abilities. The study recommends infrastructure improvement, equal resource distribution to public schools, structured teacher training, and supportive rules and regulations to enable successful AI application.

آراء وتحديات دمج الذكاء الاصطناعي في تدريس اللغة الإنجليزية في المدارس الثانوية العراقية: دراسة مقارنة بين القطاعين الأهلي والحكومي

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المُستخلص

تقارن هذه الدراسة بين قطاعي التعليم الخاص والحكومي باستخدام منهج مسحي كمي لتقصي استخدام الذكاء الاصطناعي في تدريس اللغة الإنجليزية بين ١٨٩ معلماً في المدارس الثانوية في العراق. وتكشف النتائج عن وجود فروق جوهرية بين القطاعين، حيث أظهرت أن معلمي المدارس الخاصة كانوا أكثر وعياً بالذكاء الاصطناعي، ويمتلكون مرافق أفضل، ويستخدمونه بشكل أكبر داخل الصفوف الدراسية. وتتمثل العقبات الرئيسية أمام التطبيق في التدريب غير الكافي للمعلمين (٨٤,١%)، والنقص في البنية التحتية التكنولوجية (٣.٧٨%)، والقيود المالية (٧١,٤%)، وغياب الدعم المؤسسي (٦٩,٣%)، ومقاومة المعلمين للتغيير (٦٣,٠%). ومع ذلك، أبدى التربويون في كلا المجالين آراءً إيجابية بشأن الذكاء الاصطناعي، معترفين بمزاياه في تحسين تفاعل الطلاب، وتخصيص التعليم، تقديم التغذية الراجعة الفورية، وتعزيز تطوير مهارات القرن الحادي والعشرين. وتوصي الدراسة بتحسين البنية التحتية، والتوزيع العادل للموارد على المدارس الحكومية، والتدريب المنظم للمعلمين، ووضع القواعد واللوائح الداعمة لتمكين التطبيق الناجح للذكاء الاصطناعي.

الكلمات المفتاحية: الذكاء الاصطناعي؛ تدريس اللغة الإنجليزية؛ المدارس الثانوية العراقية؛ تصورات المعلمين؛ التكنولوجيا التعليمية

1. Background

1.1. Introduction

One of the trends changing modern education is the use of artificial intelligence to assist educational activities. However, over the past few years, artificial intelligence (AI) has become a significant force in language instruction. It provides new tools to help students learning English as a foreign language (EFL) write more effectively (Kadhim, 2026). AI learning engines can process data from students' actions and their level of performance and, in turn, give immediate and automated feedback and suggest tailor-made learning tasks while helping educators modify instruction based on learners' needs. Even so, the success of these systems is determined by their design, implementation, and teacher-led support (Shi & Aryadoust, 2024). Examples of the applications of AI in English teaching include automated grammar checkers, essay grading systems, computer-assisted language learning (CALL) software, intelligent tutoring systems, etc. AI is seen as a facilitator for teaching: teaching grammar, improving writing skills and pronunciation, practicing language via chatbots, etc. (Albedah, 2025).

English is increasingly important in Iraq because of its relevance to employment, career advancement, and access to wider social and economic opportunities (Al-Asadi & Al-Asadi, 2016). Still, there are quite a few factors influencing the use of English teachers at the digital technology level within the country

schools that the integration is different from one school or one teacher to another. For example, the different situations of internet access, the lack of number of computers and other electronic facilities, the unstable electricity supply, limited technical help, and teachers' digital skills may greatly affect the degree to which digital technology is implemented in the English class by the teacher who is using it and the students. Apart from that, the reports suggest that private schools may be able to give to a greater extent access to facilities, equipment technology, and experienced teachers that government schools, still this difference may largely be determined by the regions and types of schools (Ali & Mohammadzadeh, 2022).

Private schools might have more flexibility and resources for development, but public schools, which have most of the students, usually have a tight budget and lack infrastructure (Altun & Ahmad, 2021). Therefore, simply discussing AI in education will be insufficient without focusing on it within the teacher's actual context of work. This study will therefore look at English teachers' views and challenges encountered as they try to implement AI in the classroom.

1.2. Statement of the Problem

Research on AI in English language education within the Iraqi context is beginning to emerge, but it remains limited in both scope and method. Abed et al (2025) examined teachers' perceptions of AI-supported English instruction through a qualitative case study drawing on a purposive sample, and their findings while valuable in surfacing teachers' lived concerns, were confined to the public sector and were not designed to support statistical generalisation. Comparable work in Iraq has similarly concentrated on higher education or on single-sector samples. Similar to this, Sameer and Mhawesh (2026) investigated the advantages and disadvantages of integrating AI in a single specialized institutional environment through a qualitative case study of AI-supported English learning at Al-Amal Institute in Iraq. Although these studies provide significant contextual insight into how AI is viewed in Iraqi English classes, they are limited to tiny, non-probability samples from a single sector, which means they are unable to fully represent how barriers and attitudes differ across the private-public gap.

Consequently, three gaps persist. First, no large-scale quantitative study has measured secondary teachers' AI awareness, attitudes, and practices using a probability-based sample. Second, and more critically, no published study has systematically compared private and public secondary contexts, despite the fact that the resource gap between them is precisely what determines whether AI integration is feasible at all. Third, empirical evidence from governorates outside Baghdad and the Kurdistan Region remains scarce. The present study addresses these three gaps.

Differences between private and public sectors are also emphasized. If integration of AI is more advanced in private schools compared to public schools, then education may become unequal. Therefore, this study examines perceptions and challenges so that it is relevant for effective integration of AI in English teaching in secondary schools.

1.3. Research Questions

1. How do Iraqi secondary English language teachers perceive the integration of AI in teaching English?
2. What obstacles to integrating AI technology in English language teaching do Iraqi secondary English language teachers experience?
3. To what extent do the views and practices and obstacles between private and public contexts differ?

1.4. Objectives

1. To investigate teachers' knowledge, understanding, and attitudes toward AI tools in the field of teaching English.
2. To identify the main technological, pedagogical, institutional, financial and psychological obstacles to AI integration in English language teaching.
3. To explore how the perception, practice, and obstacles differ between private and public secondary school English language teachers.

1.5. Significance of the study

The study contributes empirical evidence on differences in AI awareness, attitudes, reported use, and perceived barriers between public and private secondary school English teachers in Babylon Governorate. Methodologically, it provides the first quantitative comparison of private and public secondary English teaching in Iraq with respect to AI and thereby demonstrates how the same technology is perceived differently depending on the material conditions of the setting in which teachers work.

Practically, the findings speak to three audiences. For policy makers, they identify which constraints must be addressed first if integration is to be equitable rather than merely available. For school administrators, they indicate the forms of support that most directly enable or obstruct teachers attempting to adopt new tools. For English teachers, they clarify which AI applications are realistic, pedagogically defensible, and attainable under Iraqi classroom conditions

1.6. Theoretical Framework

This study is grounded in three complementary frameworks that together account for what teachers know about AI, what they believe about it, and what prevents them from acting on those beliefs. The first concerns acceptance. The Technology Acceptance Model holds that adoption is governed less by a technology's objective capabilities than by two user judgements: perceived usefulness, defined as the belief that a system will improve one's job performance, and perceived ease of use, the belief that using it will require little effort (Davis, 1989). The Unified Theory of Acceptance and Use of Technology subsequently consolidated this and competing models, retaining performance expectancy as the strongest predictor of behavioural intention (Venkatesh et al., 2003). While adding facilitating conditions — the

degree to which organisational and technical infrastructure exists to support use as a direct determinant of actual use behaviour rather than of intention alone. This last distinction is central to the present study: it predicts that teachers may hold entirely favourable intentions and still not use a technology, if the conditions surrounding them do not permit it.

The second framework specifies what those conditions consist of, for instance Ertmer et al. (2012) distinguishes first-order barriers, which are external to the teacher and institutional in origin — inadequate equipment, unreliable access, insufficient training, limited funding, and weak administrative support — from second-order barriers, which are internal and personal, comprising pedagogical beliefs, confidence, and willingness to depart from established practice. The distinction is consequential because the two categories respond to different remedies: first-order barriers yield to resource allocation, whereas second-order barriers are more resistant, being rooted in belief systems that resource provision alone does not alter. The distinction also generates a testable expectation for a comparative design such as this one. If first-order barriers originate in institutional resources, they should differ sharply between well-resourced and poorly resourced schools. Second-order barriers, residing in the individual teacher, should not.

The third framework addresses the nature of the knowledge required. Mishra and Koehler (2006) argue that competent integration rests not on technological knowledge in isolation but on an emergent body of knowledge that exceeds the sum of content, pedagogy, and technology taken separately. On this view, knowing that an AI tool exists is not equivalent to knowing how it serves a specific language-learning objective within a specific classroom. The awareness scale employed here therefore measures both dimensions: familiarity with AI applications and understanding of their pedagogical function in English language teaching. Taken together, these frameworks structure the present enquiry. Awareness is treated as a knowledge precondition, attitudes as the acceptance dimension, reported classroom use as the behavioural outcome, and the surveyed obstacles as the barriers intervening between the two.

2. Literature Review

2.1 AI in Education

AI is generally identified as computer systems which perform tasks requiring human intelligence, such as pattern recognition, speech and language processing, predictions and adaptations in answers to stimuli based on data. In education, it covers learning analytics, intelligent tutoring systems, automated assessment, adaptive content and individualized learning pathways (Popenici & Kerr, 2017; Zawacki-Richter et al., 2019). AI can assist teachers in reducing routine work and in giving teachers instant feedback and information regarding learners' needs. However, some issues that may be considered controversial include algorithmic bias, data privacy, over-reliance on technology and unequal access of schools or regions to resources (Selwyn, 2019; Knox et al., 2019) as facilities are disparate in different schools.

2.2 AI in English Teaching

Because English teaching includes a lot of exercises (listening, speaking, reading and writing), teachers use these tools very frequently for immediate feedback and assessment, to improve learners' vocabularies, pronunciation, grammar and communicative competence (Godwin-Jones, 2018; Grimes & Warschauer, 2010). Tools such as Grammarly, Google Translate, Duolingo, automated writing evaluation systems, speech recognition and conversational agents are being integrated more in English learning. They allow learners to practice outside of the classroom, to get feedback immediately and to be presented with a more individual learning experience suitable for their own level.

For capturing generalized use, the questionnaire broadly operationalized 'AI tools' to cover both standard AI-assisted language tools (e.g. automatic translation and grammar checkers like Google Translate and Grammarly) and newer Generative AI / Large Language Model (LLM) based tools like ChatGPT. In recognition of potential pedagogical differences, items in Section B distinguished between lower-level automated tools and more interactive Generative AI models.

However, the teacher's roles cannot be replaced as he or she inspires and motivates learners, manages classroom communication, explains culture, fosters an ethical attitude toward learning, and enhances communication competence. It is essential to train teachers who understand the potential and of these tools.

2.3 Challenges of AI integration in schools

Ed-tech integration studies have repeatedly demonstrated that digital devices alone are insufficient. Successful integration requires teacher training, technical support, administrative support, curriculum flexibility, teacher confidence and a basic infrastructure (Hennessy et al., 2010; Hew & Brush, 2006).

Additionally, Ahmed and Ahmed (2025) show that although ChatGPT greatly saves time and effort when preparing resources, especially for quizzes, reading texts, and presentations, its influence on lesson planning and marking is still minimal among Iraqi Kurdish EFL teachers. Remarkably, 71.6% of participants stated that their marking burden had not decreased, mostly as a result of worries about the validity of the assessment and their familiarity with digital technology. These results support our study by showing how highly domain-specific teacher adoption of AI tools is, which emphasizes the need for focused professional training to maximize AI integration across all instructional duties.

Teacher readiness is crucial. Many teachers know about the tools but are not ready to integrate AI tools into teaching practices as they may lack the necessary pedagogical knowledge. Hence, professional development should be focused not only on how they work, but also on how they may contribute to improved learning achievements, learning outcomes and interaction in the classroom (Mishra & Koehler, 2006; Ertmer et al., 2012). Institutional and psychological aspects can also hinder integration, as teachers might be concerned about job security, student misuse of technology, plagiarism, academic honesty, data security and human communication. Such concerns can be addressed by developing policies, integrating AI gradually and by small steps, providing peer support, and adopting a complementary, rather than substitutive, approach to teaching.

2.4 English Teaching and Educational Technology in the Iraqi Context

In Iraq, the education system has been hampered for a long time by a lack of funding, an underdeveloped infrastructure, inadequate teacher training, and slowness in implementing reforms. The level of ed-tech integration varies throughout the country, and many schools still lack a dependable connection to the internet, working on computers, and a stable electricity supply (UNESCO, 2020). Teaching English in Iraq is characterized by teaching for exams and massive classrooms in public schools, combined with limited professional development opportunities. These challenging factors provide a good context and an opportunity for AI integration in schools. However, AI tools must be adapted to the context of Iraqi classrooms.

According to Kadhim et al. (2025) empirical evidence collected from secondary schools in the Babylon Governorate shows that there is a great inconsistency between severe infrastructural deficits, and the level of preparedness of stakeholders to adopt AI. But even with serious problems for hardware and connectivity, critical hardware limitations about the lack of organized teacher training, 90% of teachers together with 79% of the students are very supportive of the idea of AI tool adoption. Such contradiction is what directly gives rise to the need for structure research.

Of course, Hanoon (2026) shows that although using AI tools in secondary schools of Najaf increased students' English grammar marks by 23.3%, there was still a lot of resistance. A majority of more than 70% of these teachers did not favor the use of AI because they did not have the necessary technical skills, their courses were not suitable for AI, and the facilities were not good enough.

2.5 Public versus Private context

The difference between the private and the public contexts is considered to be crucial in this study. While the class size at private schools is relatively small and teachers might more readily consider individual learner needs, their infrastructure is better and the availability of technology is higher, along with fewer organizational constraints than at public schools (Abbas, 2026). The large segment of the population that schools teach in Iraq makes public schools operate with greater challenges and more rigidity. Context matters as far as teacher perceptions toward AI are concerned. The teachers at private schools will certainly see AI tools as helpful, because of having a steady internet connection, a working computer and a supportive institution. Public school teachers will consider AI tools as infeasible for themselves without a good internet connection or any technical support. Comparison between public and private contexts is thus important in identifying what practice looks like in the Iraqi secondary English classrooms (Abed et al., 2025).

3. Methodology

3.1 Research Design

Quantitative survey research was used as it enables measuring teachers' perceptions towards and awareness of AI, their application of AI and its associated problems, and it was the most suitable design for the comparative study. By conducting the survey, standard data were collected from many teachers

that can be analyzed through descriptive and inferential statistics. It was a comparison between the private and the public context to answer the research question.

3.2 Population and sample

The research focuses on the secondary level teachers who teach English in Babylon Governorate. The secondary level was selected because learning English at this level helps learners later on with university studies or communications at work. Stratified random sampling was applied to ensure a representative sample from both the private and public sectors of the schools in Babylon Governorate.

A total of 200 questionnaires were administered equally between public (n=100) and private (n=100). Out of this, 189 valid questionnaires were recovered and a high response rate of 94.5% was obtained. A total of 11 questionnaires (7 public sector teachers (4 missing data and 3 incomplete) and 4 private sector teachers (1 missing data and 3 incomplete). Finally, the study involved 93 public and 96 private school teachers.

3.3 Instrumentation

The research questionnaire was adopted and designed based on available ed-tech research and information, teachers' attitudes towards AI and its use. It consisted of five sections: teachers' backgrounds, their knowledge of and attitudes toward AI, the implementation of AI tools in their lessons and the problems they faced with AI tools.

Sections B, C and E employed the 5-point Likert-type scale. Section B contained eight items about teachers' awareness of AI, whereas section C contained twelve items on teachers' attitudes toward AI integration; section E presented fifteen items about problems that the teachers faced when implementing the AI tools. Section D of the questionnaire surveyed how frequently the respondent used the AI tools provided in the questionnaire list, and how the respondents use it.

3.3.1 Validity and Reliability

Content validity of the items in the questionnaire was assessed through feedback from experienced English teachers and ed-tech experts who verified the items in the questionnaire for clarity and comprehensiveness. Further input came from the pilot test on 30 teachers from both private and public schools in Babylon to ascertain content validity. The internal consistency of each scale in the questionnaire was calculated using Cronbach's alpha. The alpha scores revealed good internal consistency among scales, which are presented in Table 1.

Table 1: **Reliability Coefficients for the Questionnaire Scales**

Scale	Number of Items	Cronbach's Alpha	Interpretation
AI Awareness and Understanding	8	.87	High reliability
Attitudes toward AI Integration	12	.91	High reliability
Challenges and Barriers	15	.89	High reliability

Note. Values above .70 are generally considered acceptable for internal consistency; therefore, the questionnaire scales demonstrated adequate reliability.

3.4 Data Collection Procedure

Data collection was conducted between March and May 2026. The researchers received permission from the respective authorities in the education system as well as the school management before administering the survey questionnaires to the teachers at sample schools. The researchers first introduced himself to the sample schools, explained the purpose of the study, and administered the questionnaires. The researchers collected the questionnaire after a week.

The respondents were encouraged to participate voluntarily, and they were assured that their answers were kept confidential and would be used for research purposes only. The researchers did not gather information about the teachers' personal identities.

3.5 Data Analysis

The collected data were analyzed with the use of IBM SPSS Statistics, version 27. Descriptive statistics such as frequencies, percentages, means, and standard deviations were utilized to describe teachers' responses to the survey questions. In order to investigate teachers from private and public schools, independent samples t-tests were performed for continuous variables and chi-square tests for categorical variables. Effect sizes were computed using Cohen's d for appropriate variables. A probability level of $p < .05$ was set for statistical significance, with effect size classifications of small (0.20), medium (0.50) and large (0.80) as indicated by Cohen's d.

3.6 Ethical Considerations

Ethical guidelines were respected throughout the entire research process. The participants were provided with information regarding the research study, its purpose, the nature of participation (voluntary), and the confidentiality of their data. The collected data was stored in a secure environment and reported only as aggregated data. No actual risk was incurred by any of the participants.

4. Results and Discussion

4.1 Demographical profile of participants

There were 189 participants in total, including 96 from private schools and 93 from public schools. Of the participants, 58.2% were female and 41.8% were male. 23.3% of teachers were below 30, 41.8% were between 30 and 40 years old, 26.5% were between 41 and 50 years old, and 8.4% were above 50. The teachers' teaching experience ranged from 1-28 years, with a mean score of 9.8 (SD=6.3). While 78.3% of teachers held Bachelor's degrees and 19.0% held Master's degrees, only 2.7% held Doctorate degrees. The data also showed that more teachers from private schools than from public schools had postgraduate qualifications. Overall, only 34.9% of teachers attended formal training on using ICT in education, whereas only 17.2% of teachers from public schools attended formal technology training as opposed to 52.1% of teachers from private schools.

Table 2 :**Demographic Profile of Participants**

Variable	Category	Result
School type	Private	96 (50.8%)
School type	Public	93 (49.2%)
Gender	Female	58.2%
Gender	Male	41.8%
Age	Under 30	23.3%
Age	30-40	41.8%
Age	41-50	26.5%
Age	Over 50	8.4%
Educational qualification	Bachelor's	78.3%
Educational qualification	Master's	19.0%
Educational qualification	Doctorate	2.7%
Educational technology training	Received training	34.9% overall; 52.1% private; 17.2% public

Note. The sample includes balanced representation from private and public contexts, but technology training is clearly higher among private school teachers.

4.2 AI Awareness and Understanding

On average, teachers were moderately aware of AI (M=3.15, SD=1.02), but the significant differences between the private and public-school settings cannot be overlooked. Private school teachers were more aware of AI (M=3.87, SD=0.82) than public school teachers (M=2.43, SD=0.91), $t(187)=11.76$, $p < .001$, $d=1.69$. There was a large difference between the two settings and the effect size is also large. The difference in AI awareness between private and public-school teachers was also very noticeable with regard to identifying AI tools relevant to language learning. Around two-thirds of private school teachers identified at least 3 AI tools (67.7%) in contrast with less than a third of public school teachers (28.0%). Both groups of teachers were most familiar with the general AI tools Google Translate, Grammarly and Duolingo. The level of familiarity with more specific AI tools such as Automated Writing Evaluation (AWE) systems and conversational agents was minimal in both school contexts, which would indicate that both AI awareness and a good knowledge of existing tools depend on access and training, or on an explicit education regarding what is available and what it is.

4.3 Attitude toward AI Integration

Despite differing levels of awareness of AI tools, teachers' general attitude toward the integration of AI into their English classes was positive (M=3.68, SD=0.79). Similarly to previous findings, teachers in private schools had a more positive attitude than public school teachers toward the integration of AI into English classes (M=3.89, SD=0.71) compared to (M=3.47, SD=0.83), $t(187)=3.76$, $p < .001$, $d=0.55$. The majority of teachers perceived AI to be beneficial in the context of personalized learning (78.3%), student engagement (72.5%), quick feedback (76.7%) and the development of 21st-century skills (81.0%). It would thus appear that teachers did not see the integration of AI in their English classrooms as threatening; however, they did raise concerns regarding issues such as decreased face-to-face communication, the changing role of the teacher, and lack of local context-awareness, all of which were higher for public school teachers and for those teachers who had taught longer.

Overall, as shown in Table 3, the adoption rate of AI in the combined sample was 31.2% (n=60). There was a significant in-section difference in AI adoption rate: 51.0% of private school teachers (n=49) versus 11.8% of public school teachers (n=11). Also, the reported usage frequencies in each subgroup of active adopters (e.g. 42.4% 'Less than once per month') are based solely on active AI adopters (n=60) instead of the whole sample.

Table 3 :Current AI Use and Main Classroom Purposes

Indicator	Result
Teachers using any AI-enhanced tools	31.2%
Private school teachers using AI tools	51.0%
Public school teachers using AI tools	11.8%
Less than once per month	42.4% of AI users
1-3 times per month	33.9% of AI users
Weekly or more frequently	23.7% of AI users
Most common purposes	Homework assignments, vocabulary practice, and grammar exercises

Note: Percentages for usage frequency are computed based solely on active AI users, (n= 60: n private = 49, n public = 11) representing 100% of the active user subset

4.4 Challenges and Barriers to AI Integration

There were five broad categories of issues observed. These show that the core issue isn't simply teacher attitude, but the interface of teacher preparedness, school resources, financial feasibility, institutional willingness, and the resistance of an ingrained psychological hurdle.

Data from the 5-point Likert scale was rated by the descriptive statistics values of means and SD. To the parametric summary of the Likert measures, percentage values in Table 4 are used, which is the sum of the rate of cumulative agreement with the items based on other positive categories (Agree = 4 and Strongly Agree = 5).

Table 4 :Ranked Challenges to AI Integration

Rank	Challenge	Reported by	Mean (SD)	Most Affected Context
1	Inadequate teacher training	84.1%	4.23 (0.85)	Public schools
2	Limited technological infrastructure	78.3%	4.08 (0.96)	Public schools
3	Financial constraints	71.4%	3.89 (1.03)	Public schools

4	Insufficient institutional support	69.3%	3.76 (0.94)	Both contexts, higher in public schools
5	Resistance to change	63.0%	3.52 (1.08)	Similar across contexts

4.4.1 Lack of training

Teachers stated lack of training as a top problem (reported by 84.1% of teachers). The problem of lack of training was greater in public schools (M=4.51, SD=.72) than in private schools (M=3.94, SD=.89), $t(187)=4.89$, $p<.001$. They felt the need for not only technical knowledge about AI tools, but also pedagogy of teaching English with the use of AI tools.

4.4.2 Lack of technological infrastructure

Teachers pointed out the problem of lack of technological infrastructure (reported by 78.3% of teachers). In public schools, there was the problem of lack of access to internet connection, lack of computers or devices, lack of new hardware, and frequent electricity breakdowns. So, the teachers were prevented from using new things though willing.

4.4.3 Financial difficulties

Financial problems were reported by 71.4% of teachers: the payment of devices, the expenses for Internet services, Software licenses and technical support. Public schools seemed to suffer from this problem more than private ones. Though there were some free AI tools, integration of AI into teaching requires technology and investment.

4.4.4 Lack of institutional support

69.3% of teachers also reported that the institution didn't provide enough support: they lacked clear policies for technology, had little assistance from technicians, no support from administrative part, inflexible curriculum, etc. This reduced the individual initiatives teachers had for technology use.

4.4.5 Resistance to change

As much as 63.0% of teachers noted the problem of resistance to change: maybe due to uncertainty of the role of teacher, fear of new technology, Skepticism on the part of colleges and inclination to traditional teaching. This was equally found in both types of schools (unlike the other problems).

4.5. Comparing public and private school settings.

Based on the results, it is apparent that the public and private school teachers are highly distinct from one another with regard to nearly every variable: private school teachers have better and more positive perceptions and greater technology usage, public school teachers have problems of inadequate training, lack of technological infrastructure, and financial shortages.

Table 5 :**Comparison of Key Variables Between Private and Public Contexts**

Variable	Private M (SD)	Public M (SD)	t-value	Effect Size
AI Awareness	3.87 (0.82)	2.43 (0.91)	11.76***	1.69
Positive Attitudes	3.89 (0.71)	3.47 (0.83)	3.76***	0.55
Training Inadequacy	3.94 (0.89)	4.51 (0.72)	4.89***	0.71
Infrastructure Issues	3.21 (1.02)	4.78 (0.56)	13.52***	1.97
Financial Constraints	3.40 (1.07)	4.38 (0.78)	7.12***	1.04

Note: $p < .001$. Effect sizes represent Cohen's d values.

What is also interesting is that out of all the three problems identified regarding AI implementation, the problems associated with infrastructure and teachers' level of AI literacy showed the largest gap between the respondents. This indicates that how the teachers make use of AI in their teaching is dependent on the context. Private schools, for instance, show an accumulative effect of all advantages and public schools show cumulative disadvantages and difficulties for teachers when applying AI in teaching.

This observation has implications regarding educational equity. The lack of specific attention to public schools would further widen the gap between public and private schools when AI is being adopted by schools, so the strategy on integration of AI into schools on a national and/or local level has to include public schools as a prerequisite, not as an option.

From the perspectives of the TAM, there is a clear tendency that teachers from private schools are more likely to adopt an AI perceived usefulness (PU) and perceived ease of use (PEOU)mainly because of a higher institutional support and a better access to the required software infrastructure (Davis, 1989). Though, the low adoption in public schools reveals the troublesome friction area where teachers' perceived ease of use constrains their intention of adopting AI in classrooms.

In addition, the barriers identified correspond to first- and second-order barriers in the system, put forward by Ertmer (1999). The major barriers to adoption faced by public school teachers are first-order barriers, namely the technological environment and the lack of formal preservice and in-service

training. Second-order barriers, namely pedagogical hesitation and lack of self-efficacy for general AI, adds up to the adoption barrier.

Finally, under the lens of the TPACK Setup (Koehler & Mishra, 2009), the pattern of the findings revealed a uneven distribution of teacher skills; the teachers had a solid proficiency of Content Knowledge (CK) and Pedagogical Knowledge (PK) but lacked the desirable amount of Technological Pedagogical Knowledge (TPK); so, the Technological Pedagogical Content Knowledge (TPACK) gap appears so large that intervention strategies need to be focused on the transitional development of the integrated TPACK skills instead of isolated hardware and software skills training.

5. Conclusions and Recommendations

5.1 Conclusions

Overall, Iraqi English teachers at the secondary level have a positive attitude towards the integration of AI in their English language instruction; however, positive attitudes have not been converted into extensive classroom implementation. Additionally, there are significant differences between public and private schools, where private school teachers score higher in terms of AI awareness, AI use and feel less worried about infrastructure problems. Furthermore, significant barriers hindering the integration of AI include insufficient teacher training, lack of infrastructure, insufficient funds, weak institutional support and resistance to change. Moreover, applications currently integrated into teaching tend to be general, serving supplementary learning purposes such as homework, grammar and vocabulary practice. Consequently, the integration of AI in teaching should not only focus on the policy and school levels, but also the teacher education level and the classroom level; and an explicit emphasis should be put on the gap between private and public schools.

This study was in particular aimed at drawing attention to the key role that integrating AI into the school system in Iraq, mainly in secondary schools, can play in the light of the fast worldwide development and adoption of AI technologies during 2026. Taking Babylon Governorate as a case study reference point, this paper delivers a foundational diagnostic of where Iraq stands at the moment in regards to AI adoption. It also touches on the practical problems, and ideas of different stakeholders. The study results were showing a big lack in AI tools availability for teachers, as well as the educators' limited use of these tools, due largely to a system of obstacles which are outlined as structural, pedagogical, and logistical in the results and discussion.

Although Babylon can be considered as an example for understanding the overall Iraqi situation, the limitations of this study will inevitably open ways for further development. It is important that future research will not only be based on what is presented here but will also adopt qualitative forms of data collection like semi-structured interviews and direct classroom observation to get more insights about students' background. In addition, it will be necessary to widen the current focus and reach to cover most

of Iraqi territories. And, getting feedback from students via surveys might serve to complement the collected data. At the same time, carrying out experimental manipulations and assessing teacher-training modules for a specific type of teaching are the recommended steps to fill the gaps identified in this paper as well as to promote AI-based teaching in Iraq.

5.2 Recommendations

5.2.1 For Policy Makers and the Ministry of Education

1. Development of a national plan for the integration of AI in school education stating clear goals, implementation steps, budget allocation and indicators for evaluation of the results.

2. Ensuring public schools have sufficient infrastructure, e.g., stable internet access, computers, electricity supply and technical support, and investing in adequate resources.

3. Provision of consistent training and professional development opportunities for teachers in relation to the application of AI in English language teaching, covering both technical and pedagogical aspects.

4. Establishment of clear rules regarding ethical application of AI, student data protection, academic dishonesty (plagiarism) and the proper use of technology for educational purposes.

5. Modification of curriculum standards and assessment to embrace AI applications in providing feedback, practices, and customized instruction to students.

5.2.2 For School Administrators

1. Development of concrete technology integration plans for schools that take into account existing constraints of infrastructure, budget, and professional staff.

2. Creating a positive and encouraging atmosphere for teachers to experiment with and apply AI-based tools.

3. Fostering a culture of collaboration by the establishment of peer mentoring and professional learning communities among teachers to share AI application experiences in English teaching.

4. Consult English teachers about the selection and implementation of AI-based tools in schools.

5. Monitor the integration of AI in English classrooms to ensure the technology serves pedagogical objectives.

5.2.3 For English Teachers

1. Start with simple and readily accessible AI tools that correspond to specific learning needs.

2. Integration of AI as an enhancement to existing teacher feedback, classroom interactions, and communicative language teaching practices.

3. Critical evaluation of AI-based tools concerning their accuracy, cultural appropriateness, student data privacy, and pedagogical value.

4. Sharing knowledge and practices with other English teachers in order to develop a collaborative attitude towards AI integration.
5. Guiding students towards ethical and responsible use of AI tools in English language learning.

5.2.4 For Teacher Education Programs

1. Integrating AI literacy in pre-service English teacher training programs.
2. Providing practical training for student teachers on the effective use of AI tools in planning, providing feedback, assessment, and personalized instruction in English language teaching.
3. Incorporating a teaching practicum where student teachers apply AI-supported English language teaching methods in real classroom settings.
4. Preparing prospective teachers for the critical examination of ethical issues arising from the use of AI such as plagiarism, student data protection, and responsibility for its implementation.

5.3 Limitations and Directions for Future Research

There are several limitations in this study. First, it focused on a single governorate in Iraq, but the findings provide generalizable view to all Iraqi parts. Although a survey can quickly collect data on a large scale, teachers' perspectives were not deeply analyzed in this research. If an interview or an observation had been conducted, deeper insight into teachers' views would have been provided. However, instructors' self-reported social desirability data may have affected their responses, and there may be differences in how they understand the AI tools. As AI applications become more commonly used in education, teachers' perspectives may vary over time, yet a quick data collection approach may only capture a snapshot of their thoughts.

In the lights of these constraints outlined and acknowledging several important directions for future research areas to be explored. First, given that the reliance on survey data limited the depth of insight into teachers' actual practices, the next research should make use of qualitative research approaches to get much more data. This paper will propose, in detail, the use of such approaches as semi-structured interviews and classroom observations, that will enable researchers to get closer to teachers and to the real practices rather than just self-reported perceptions of the former.

Secondly, because this study is limit to one governorate, future studies should utilize a cross-section study design involving various governorates and education levels in Iraq. A multi-center comparative analysis across different sectors, institutions, and social classes would enhance the extent to which these findings can be generalized to the Iraqi public education system.

Third, since the study only investigates the perspectives of the teachers, it is unable to report anything on the experiences of learners in such AI-supported English learning circumstances. In this way recommended for future studies to explore students' perspectives towards the use of AI technology in the English language learning context, because of this gaining insights into how learners view and respond to the AI-supported learning process.

Fourth, since the current study is simply descriptive and do not evaluate learning outcomes directly, it would make sense that one of the directions for future studies could be to identify the impact of certain AI tools in particular on students' vocabulary, grammar writing, speaking, and motivation. A methodological approach using experimental or quasi-experimental designs could help the researchers better understand and more accurately describe the instructional benefits which these technologies offer.

Lastly, no intervention supporting teachers' use of AI is assessed in this study. Therefore, future research should develop, and review teacher training programs targeted at enhancing AI literacy and practical classroom implementation abilities and determine whether such training results in more successful and self-assured integration of AI technologies in public school English language classrooms.

5.4 Final Thoughts

The integration of AI in English language instruction in Iraqi secondary schools offers significant prospects while simultaneously presenting complex challenges. While the opportunities for personalized learning, real-time feedback, and enhanced student engagement are profound, the successful realization of these benefits hinges on a mindful and adaptive approach to the existing contexts.

The differences between private and public schools make it clear that AI integration is not only a technical issue, but also a matter of equity. It is crucial to support public schools in this transformation process, so that AI does not widen the already existing gap between the public and the private sector. Carefully planned, extensively trained, and contextually relevant integration would ensure that the great potential of AI for English language teaching is realized across Iraq.

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Appendix A: Research Questionnaire

Perceptions and Challenges of Integrating Artificial Intelligence in English Teaching

Teacher Questionnaire

Dear Teacher, this questionnaire aims to explore English teachers' perceptions and challenges regarding the integration of Artificial Intelligence (AI) in English teaching. Participation is voluntary and all responses will be kept confidential. Please answer honestly based on your own experiences and opinions.

Section A: Demographic Information

No.	Item	Response Options

1	Gender	☐ Male ☐ Female
2	Age	☐ Under 30 ☐ 30-40 ☐ 41-50 ☐ Over 50
3	Years of teaching experience	_____
4	Highest educational qualification	☐ Bachelor's ☐ Master's ☐ Doctorate
5	School type	☐ Private ☐ Public
6	Training in educational technology	☐ Yes ☐ No

Section B: AI Awareness and Understanding

Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

No.	Statement	Response
7	I understand what Artificial Intelligence (AI) means.	☐1 ☐2 ☐3 ☐4 ☐5
8	I am familiar with AI applications in education.	☐1 ☐2 ☐3 ☐4 ☐5
9	I can identify at least three AI tools for language learning.	☐1 ☐2 ☐3 ☐4 ☐5
10	I understand how AI can support English teaching.	☐1 ☐2 ☐3 ☐4 ☐5
11	I have read articles or attended workshops about AI in education.	☐1 ☐2 ☐3 ☐4 ☐5
12	I feel confident explaining AI concepts to my students.	☐1 ☐2 ☐3 ☐4 ☐5
13	I know the difference between AI and other educational technologies.	☐1 ☐2 ☐3 ☐4 ☐5
14	I am aware of current research on AI in language education.	☐1 ☐2 ☐3 ☐4 ☐5

Section C: Attitudes toward AI Integration

No.	Statement	Response
15	AI can enhance personalized learning for students.	☐1 ☐2 ☐3 ☐4 ☐5

16	AI tools can improve student engagement in English lessons.	☐1 ☐2 ☐3 ☐4 ☐5
17	AI can provide immediate feedback to language learners.	☐1 ☐2 ☐3 ☐4 ☐5
18	Using AI in teaching helps develop 21st-century skills.	☐1 ☐2 ☐3 ☐4 ☐5
19	AI can accommodate diverse learning styles effectively.	☐1 ☐2 ☐3 ☐4 ☐5
20	I am willing to integrate AI tools in my English teaching.	☐1 ☐2 ☐3 ☐4 ☐5
21	AI can reduce teachers' workload by automating routine tasks.	☐1 ☐2 ☐3 ☐4 ☐5
22	AI integration aligns with my teaching philosophy.	☐1 ☐2 ☐3 ☐4 ☐5
23	I worry that AI might replace human teachers. (Reverse scored)	☐1 ☐2 ☐3 ☐4 ☐5
24	AI use might decrease human interaction in learning. (Reverse scored)	☐1 ☐2 ☐3 ☐4 ☐5
25	Students will benefit from AI-enhanced English instruction.	☐1 ☐2 ☐3 ☐4 ☐5
26	AI technology is appropriate for the Iraqi educational context.	☐1 ☐2 ☐3 ☐4 ☐5

Section D: Current AI Use and Practices

No.	**Item**	**Response Options**
27	I currently use AI tools in my English teaching.	☐ Yes ☐ No
28	If yes, how frequently?	☐ Daily ☐ Weekly ☐ Monthly ☐ Rarely
No.	**Item**	**Options**
29	Which AI tools do you use?	☐ Language learning apps ☐ Grammar checkers

		☐ Translation tools ☐ Conversational AI/Chatbots ☐ Intelligent tutoring systems ☐ Automated writing evaluation ☐ Other: _____
30	For what purposes do you use AI?	☐ Homework assignments ☐ Vocabulary practice ☐ Grammar exercises ☐ Speaking practice ☐ Writing practice ☐ Reading comprehension ☐ Assessment ☐ Differentiated instruction ☐ Student motivation ☐ Other: _____

Section E: Challenges and Barriers

Please rate how much each factor challenges AI integration in your teaching: 1 = Very Low Challenge, 5 = Very High Challenge

No.	Challenge	Rating
31	Limited internet connectivity	☐1 ☐2 ☐3 ☐4 ☐5
32	Insufficient computer devices/hardware	☐1 ☐2 ☐3 ☐4 ☐5
33	Outdated technology infrastructure	☐1 ☐2 ☐3 ☐4 ☐5
34	Frequent electricity disruptions	☐1 ☐2 ☐3 ☐4 ☐5
35	Lack of training in AI tools	☐1 ☐2 ☐3 ☐4 ☐5
36	Lack of training in pedagogical integration of AI	☐1 ☐2 ☐3 ☐4 ☐5
37	Limited technical support	☐1 ☐2 ☐3 ☐4

		☐5
38	High costs of AI software/licenses	☐1 ☐2 ☐3 ☐4 ☐5
39	Insufficient school budget for technology	☐1 ☐2 ☐3 ☐4 ☐5
40	Lack of administrative support	☐1 ☐2 ☐3 ☐4 ☐5
41	Absence of clear policies on technology use	☐1 ☐2 ☐3 ☐4 ☐5
42	Inflexible curriculum structure	☐1 ☐2 ☐3 ☐4 ☐5
43	Large class sizes	☐1 ☐2 ☐3 ☐4 ☐5
44	Colleagues' resistance to new technology	☐1 ☐2 ☐3 ☐4 ☐5
45	My own anxiety about using new technology	☐1 ☐2 ☐3 ☐4 ☐5