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Research Article

Navigating the game-changer: ChatGPT's influence on in-service teachers' self-regulation and teaching practices in the UAE

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ABSTRACT

Research on artificial intelligence (AI) in education has revealed a significant gap in understanding the complex relationship between AI, self-regulation, and teachers' pedagogical practices in the United Arab Emirates (UAE). The study adopts a cross-sectional study that uses exploratory survey aimed at investigating ChatGPT's role in the future of UAE education by examining (1) how in-service teachers use ChatGPT in daily teaching, (2) its impact on their self-regulation abilities, and (3) potential changes in teaching practices resulting from ChatGPT integration. Data were collected from 311 in-service teachers from public and private schools, using a self-report questionnaire. The findings showed disparities in the perspectives of participants at both public and private schools, as well as gender levels. Public school teachers mainly used ChatGPT to generate instructional materials and facilitate classroom dialogue, whereas private school teachers focused on its application in lesson design. Private school teachers found ChatGPT easier and more effective than their public counterparts. Private school male teachers outperformed public school males by 0.56 points, and private school female teachers scored 0.52 points higher than their public-school counterparts. Regardless of educational background, private school teachers experienced better self-regulation with ChatGPT than public school teachers. The impact of ChatGPT on self-regulation varied according to teaching experience, affecting novice and experienced teachers differently from those with moderate experience. However, the findings on the impact of age are inconclusive and require further research. These results are discussed in the context of the current AI integration policies in UAE education.

Keywords: self-regulation, ChatGPT, in-service teachers, science education, UAE

INTRODUCTION

Research projects on artificial intelligence (AI) conducted in the United Arab Emirates (UAE) and addressed educational aspects have concluded that many critical issues exist, such as lack of clarity regarding the interplay of AI, teacher self-regulation, the major model of the metacognition skeleton, and their pedagogies. Self-regulation, as emphasized by many metacognitive researchers, is an ongoing process of learning how to learn that requires continuous reflection, modifications, adjustment, and improvement to increase teaching effectiveness (Mcdonald, 2019; Zapata et al., 2016). Bong and Skaalvik (2003) described self-efficiency as a concept that forms part of Bandura's social cognitive theory (SCT) and can be defined as the perception of someone's belief, confidence, and faith in how capable they are of achieving a particular assignment or developing new skills. Regarding academic self-efficacy. This is how individuals or learners believe that they can ensure academic achievement and meet learning outcomes (Hassan & Tairab, 2012). According to Bong and Skaalvik (2003), desire to achieve an aim or goal, emotions, cognition, non-cognitive outcomes, and impulse control are all factors in the analysis. Positive student outcomes and effective teaching practices occur when in-service teachers' self-regulation is evident (Alabidi et al., 2022; Lawson et al., 2018; Vosniadou et al., 2021). Self-regulation encompasses every strategy and process employed to coordinate and arrange the educational system to address learners learning issues, needs and future readiness to be independent learners. Optimizing the teaching process requires constant reflection, modification, and innovation (Hall & Götz, 2013).

Today's in-service teachers have nearly infinite proportions of information available. As such, the days in which they limited them to a few books or other library-related items have long gone. A significant milestone on the way to a new era of AI is the ChatGPT (Elliott, 2019; Richta, 2018). Through such technology, in-service teachers can develop more flexible learning environments (Al Mansoori et al., 2022; Bhatia, 2023; Gregorcic & Pendrill, 2023; Hadi et al., 2023). The hardest-working teacher or student will be shocked by how much ChatGPT can process information in several minutes, draw conclusions, and demonstrate it logically (Bahrini et al., 2023; Bin-Nashwan et al., 2023). This might save time on research, provide multiple views on complex issues, and quickly solve problems (Bahrini et al., 2023). This is most effective when the teacher organizes, produces, and presents lessons and instructional content. With the help of ChatGPT, students can receive personalized learning, which involves the modification of the source material and the type of help that a particular student requires (AlArabi et al., 2023; Ishmuradova et al., 2025; Korzynski et al., 2023). As an AI tool, ChatGPT can provide student-oriented lessons by adapting the content and resources to each learner's profile (Alabidi et al., 2023). Murgia et al. (2023) and Biswas (2023) confirmed that ChatGPT can also assist young learners in completing cognitive-based activities. Moreover, Alzyoudi and Al Mazroui (2024) stated that ChatGPT can help the elderly feel lonely. Therefore, in-service teachers can have a boundless wellspring of knowledge at their fingertips (Benson, 2014; Fawns et al., 2021). It can create a mutually beneficial relationship in which teachers facilitate student discovery and surpass their role as dispensers of information (Hadi et al., 2023; Korzynski et al., 2023). However, Rudolph et al. (2023) suggested that teachers must advance their knowledge and form positive beliefs about using the ChatGPT in teaching. Platforms operating on AI, as Rudolph et al. (2023) note, hold great promise in terms of triggering radical transformations in academic environments. AI can improve teachers' self-efficacy in educational settings using technology that boosts their abilities.

ChatGPT can help provide information about student performance and the learning process in the educational environment and relieve the burden of instruction and learning (Bin-Nashwan et al., 2023; Rudolph et al., 2023; Tlili et al., 2023). It can assist academic creativity in assessments, piracy detection, oversight, and student feedback (Alsalhi et al., 2023; Bahroun et al., 2023; Baidoo-Anu & Leticia, 2023; Rudolph et al., 2023).

Employing AI tools such as ChatGPT in UAE education settings has become a new trend in education systems, especially in course syllabi, and is being used as a cross-cutting theme with many subject matter topics and pedagogical support tools. This is related to its perceived usefulness and huge potential to rescue teachers and relieve them of their burden. In addition, Hashem et al. (2024), ChatGPT, a teacher ally, can play a role in improving the teaching and learning environments that have led to this teaching and learning reform movement (Tlili et al., 2023). With the help of ChatGPT, students can receive personalized learning; they can

employ it to increase their engagement, which involves modifying and refining learning materials and tailoring the type of help that a particular student requires (Abu Khurma et al., 2024; Rasul et al., 2023; Yu, 2023).

ChatGPT can develop student-centered lessons using specific action verbs that address students and adapt content and learning resources to each learner's profile. Simultaneously, ChatGPT enhanced the teaching practices of in-service teachers in the UAE and self-regulation strategies (Hashem et al., 2024). In-service teachers have recently been used as instructors in the education system (Alabidi et al., 2023; Kervinen et al., 2022). The ChatGPT is anticipated to be a social shift to education in the UAE (Bahroun et al., 2023). This revolutionary wave should rejuvenate education by helping teaching methods, educational resources, and assessment practices innovate by incorporating fresh ideas (Bhatia, 2023; Gregorcic & Pendrill, 2023). In-service teachers can harness AI tools to set up more autonomous-based and adaptive student-centered classrooms (Hadi et al., 2023; Niyozov et al., 2023). It provides access to vast information and resources, making it easier for teachers to enhance their lessons and enrich their teaching materials (Bin-Nashwan et al., 2023). As relatively few research studies have investigated the effect of academic self-regulation and AI tools such as ChatGPT, the current study seeks to address this research gap. As per the declarations above, ChatGPT can help teachers become more competent in their profession and overcome workplace difficulties (Lo, 2023).

This study distinguishes itself from previous studies by focusing on the integration of AI, and in this situation, the ChatGPT tool, into the self-regulation practices as part of the metacognitive kills of in-service teachers in the Emirati context, as this relationship has not previously been explored in depth within public and private sector schools. It also addresses differences based on gender, experience, and age, providing a new analytical dimension that can contribute to the design of more personalized training policies.

Problem Statement

ChatGPT's arrival revolutionized how newly employed teachers in the UAE approach classroom instruction. In addition to offering vast information and motivation, it supports teachers in refining their instructional methods through intensive self-reflective assessments (OECD, 2020). However, a crucial gap exists in our understanding of how teachers can leverage this tool to enhance emotional self-regulation. While ChatGPT facilitates the faster generation of lesson plans and teaching strategies, concerns remain regarding its user-friendliness and the possible implications for teacher independence (Chan et al., 2023). Overdependence on AI may contribute to unethical practices, including the violation of academic standards, cheating, and biased treatment of students. Although some scholars suggest that ChatGPT enables teachers to become more specialized and navigate professional challenges (Lo, 2023), its successful implementation requires thoughtful professional input and responsible use of technology (Bekeš & Galzina, 2023; Lo, 2023).

Despite its growing presence in classrooms, the influence of ChatGPT on teaching processes, self-organization, and self-regulation among in-service teachers in the UAE remains underexplored. Moreover, existing studies do not sufficiently differentiate between public and private school contexts, nor do they explore gender-based variations. Therefore, this study sought to investigate how in-service teachers integrate ChatGPT into their classroom practices, its effects on their self-regulation competencies, and the strategies they employ to maintain professional autonomy. Through this exploration, the current study is conducted to generate critical insights into the broader educational influence of AI tools such as ChatGPT within the UAE context.

Significance of Study

This study is significant in several ways. First, the study may offer specifics on how potential harms could be minimized and how the benefits of applying ChatGPT in learning contexts could be enhanced. Specifically, understanding how in-service teachers adopt and use the ChatGPT will help provide insights into the possible advantages and disadvantages of applying the tool. Second, the study's value lies in understanding the complex dynamics of how ChatGPT interacts with UAE teachers in teaching. Third, the study offers guidance on adopting AI in education while focusing on strengths and weaknesses. Finally, this study offers fresh perspectives on how teachers apply and integrate ChatGPT for self-management and learning, which is valuable information for decision makers in this area.

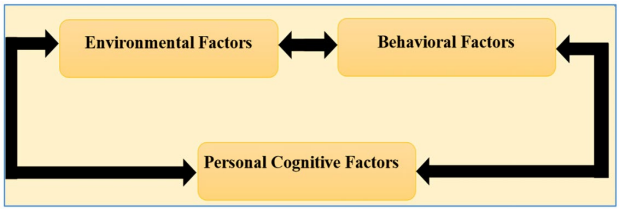

Figure 1. SCT theory for technology adoption (Source: Authors' own creation)

It is still unclear how the Chat GPT affects in-service teachers' teaching strategies and capacity for self-regulation in the UAE. Given the limited research in this area, this study seeks to provide new perspectives on how in-service teachers embrace and employ the ChatGPT in their self-regulation and teaching practices in the UAE. It is hoped that the findings will guide decision-makers and developers in the field of Information Systems, enhancing the integration of AI in education. To address the extent to which ChatGPT influences teachers' self-regulation and practices, the following questions were investigated:

1. What is the level of use of ChatGPT by in-service teachers in their practice?
2. How does the use of the ChatGPT affect in-service teachers' self-efficacy in the UAE educational context?
3. To what extent does the use of ChatGPT influence self-regulation among public and private in-service schoolteachers in the UAE?

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Deciphering how individuals embrace and incorporate new technologies is critical in the rapidly evolving world. SCT highlights this complex process (**Figure 1**). The amalgamation of SCT insights is a guiding resource for researchers, developers, and policymakers, as they navigate the dynamic terrain of technology integration.

SCT is recognized as a potent framework for understanding human behavior (Bin-Nashwan et al., 2023). SCT posits that learners' intentions or the way they think about how to act are influenced by their actions and personal, cognitive, and environmental factors (Chen et al., 2013). An individual's behavior is molded by perceptions, attitudes, beliefs, and expectations, meaning that their thought processes and emotions are intertwined with behavioral intentions (Bin-Nashwan et al., 2023). Another component of SCT is behavior, which can be defined by individuals' ways of responding to a given condition, specific response, or towards specific things or objects (Cooper & Lu, 2016). This concept also includes the way individuals interact with technological innovations. These three factors interact to predict individual actions. In-service teachers' interactions with ChatGPT can be analyzed through this framework to understand how they acquire new teaching strategies, adapt their practices, and employ self-regulation in AI-assisted education.

SCT creates a powerful framework to understand how individuals adopt technology. SCT examines the cognitive and social factors that shape individual perceptions and intentions to develop more targeted interventions, improve technology design for better user experience, predict and manage technology adoption trends, and ultimately improve benefits for individuals and society.

According to Firmansyah and Saepuloh (2022) and Martin and Guerrero (2020), SCT provides a robust framework for explaining how learners learn and regulate their behavior within a social environment, emphasizing the interplay between the personal variable with both behavioral and environmental ones. In the context of ChatGPT, teachers' self-efficacy–their belief in their capability to effectively use the tool–is a critical personal factor that influences its integration into practice. Studies have found that teachers' attitudes towards ChatGPT are positively influenced by their perceived ease of use and usefulness (Almogren et al., 2024; Bhaskar et al., 2024). This suggests that if teachers find ChatGPT intuitive and beneficial for their teaching tasks, their self-efficacy in using it is likely to increase.

Literature Review

Traditionally, education has been confined to physical classrooms, thus limiting students to a specific location (Aljifri & Hussainey, 2007). Technology has broken down these constraints by creating virtual learning

environments in which learners can connect through digital platforms. ChatGPT could greatly assist teachers in managing these crucial aspects of the classroom; it supports the development of formative assessments (Hadi et al., 2023). Teachers can learn more about understanding students' levels by creating assessments, brief response questions, and discussion starters. The tools provide immediate feedback and real-time coaching on teaching techniques to keep students engaged and on track with the lessons learned (Hadi et al., 2023). Javaid et al. (2023) argue that in-service teachers effectively address learning gaps between individuals and groups because of this focused approach. However, ChatGPT can help in-service teachers come up with other issues or tasks for higher-level learners. These children could better understand the subjects and engage in pleasure. ChatGPT serves the needs of in-service teachers. According to Sallam et al. (2023), this helps teachers design enthralling and individualized learning experiences for their students. However, for ChatGPT to yield the desired results, its implementation must be strategic, with proper planning and features aligned to a particular set of course outcomes.

ChatGPT can help create a well-organized course outline by offering focused recommendations for the theme, subject matter, or topic (Bahroun et al., 2023). Cooper (2023) proposed that AI instructional goals, operations, resources, and evaluation methodologies for every class or curriculum segment would significantly reduce the time and effort required. ChatGPT can readily create instructions for various learning objectives in a case-based, hands-on, or lecture format. Ahmad et al. (2023) argue that teachers can utilize the functions of ChatGPT to generate material specific to their lesson plans aimed at fulfilling the intended objectives, subjects, and education needs of their students. As stated by Memarian and Doleck (2023), there is an assertion made based on the fact that AI can create assessments of the works and tests, projects, and how the material is delivered in the curriculum. ChatGPT is ideal for answering questions regarding differentiation and fostering substantive ideas in a classroom context.

In Bandura's SCT, the term "self-efficacy" describes one's trust in their capability to carry out specific tasks or gain up new abilities (Bong & Skaalvik, 2003). It commonly pertains to academic self-efficacy, an individual's confidence to ensure learners' academic success and meet educational objectives (Bong & Skaalvik, 2003). This involves motivation, achievement, emotions, cognitive processes, and self-regulation. Since the introduction of Chat GPT, the educational community has experienced a wave of engagement and concern (Adarkwah et al., 2023). There are both proponents and critics of their integration in teaching.

Nevertheless, it is valuable for teachers to obtain insights and make informed evaluations regarding Chat GPT's relevance in education (Oates & Johnson, 2025). Aldoseri et al. (2024) also argued that AI tools hold high potential for catalyzing transformative changes in students' achievement. Incorporating AI into the teaching profession can enhance academic self-efficacy by providing teachers with a sophisticated tool that augments their capabilities (Yang et al., 2024). Using Chat GPT in academic settings may also alleviate the burdens of teaching and learning, offer insights into students' progress, and foster innovation in the classroom by simplifying tasks like grading, plagiarism detection, supervision, and feedback (Chan, 2023). However, there is a scarcity of empirical research that studied the effect of academic self-efficacy on using Chat GPT, which necessitates investigation in this study. Drawing from previous arguments, Chat GPT can empower teachers to master their skills and overcome work-related challenges (Fahad et al., 2024; Hashem et al., 2023).

Beyond self-efficacy, the influence of the ChatGPT on teacher self-regulation is an area of growing importance. Self-regulation in teaching encompasses teachers' ability to monitor, evaluate, and adjust instructional strategies and professional development. For example, a recent study highlighted that ChatGPT utilization had a significant positive impact on pre-service mathematics teachers' self-efficacy and self-regulatory learning, suggesting a potential for AI tools to foster stronger influence over their learning and become more effective educators (Getenet, 2024; Kaplan, 2024). This aligns with the idea that, by automating certain tasks, ChatGPT could free up teachers' cognitive load, allowing them to allocate more mental resources to higher-order planning, reflection, and adaptation of their teaching methodologies. However, this also poses a crucial question: Does reliance on ChatGPT foster genuine self-regulatory skills or does its risk diminishing them by externalizing certain cognitive processes? The nuanced relationship between AI use and the development of intrinsic self-regulatory capacity requires further investigation.

The UAE tops the list of countries with the most advanced education systems in the Middle East (Ahmad et al., 2023). The use of technology in advancing education as a good instrument for increasing access to

education has become more popular (Sallam et al., 2023). Recently, digital technologies have improved in-service teachers' teaching procedures, including AI and sensor-based Internet of things. Notably, the global pandemic has accelerated the digital initiatives of 72% of Gulf educational institutions in the UAE, advancing their plans by at least a year (Abu Khurma et al., 2023). To open the door to cutting-edge approaches to education, EdTech companies in the UAE are actively implementing digital transformation initiatives. Cooper (2023) pointed out that the education sector will continue to adopt new tools and techniques to build learning environments that align with the present digital landscape in an ever-evolving world, where technology is becoming increasingly integral to many sectors. Although the UAE's prior experience with chatbots has been favorable, the education sector must address parents' and teachers' concerns about deploying generative AI (Kasneci et al., 2023). These concerns frequently concern academic integrity problems, specifically how students finish their exams and homework (Abu Khurma et al., 2023).

Understanding in-service teachers' actual use, their self-efficacy in navigating these tools, and how these factors influence their self-regulation in the face of evolving policies and student practices is therefore a critical and timely inquiry within the specific UAE context. This study contributes to this emerging discourse by providing empirical data on how teachers in this rapidly evolving educational landscape adapt to and integrate generative AI.

Previous studies have shown that studies on the relationship between in-service teachers' self-regulation and ChatGPT are limited in scope and inclusion, certainly in the context of the present study, where there is no evidence linking in-service teachers' self-regulation and AI applications. For this reason, this study contributes to closing the current gap in literature.

METHODOLOGY

Design and Sample of the Study

This study employed a cross-sectional survey (**Appendix A**) to delineate the characteristics of the community, rather than establishing causal relationships between different variables (Ohk & Lee, 2019; Zheng, 2015). Using a cross-sectional survey approach, data was gathered through questionnaires administered to human participants. This technique provides information about a population or community at a specific moment. The study targeted teachers of private and public schools in the UAE during the academic year 2023–2024.

The focal group for this study was comprised of in-service male and female teachers. Convenient sampling was chosen based on availability and consent, ensuring alignment with predetermined criteria related to teaching the language and pedagogical strategy. The sample included 311 teachers who participated in an electronic survey. These teachers were enrolled in professional postgraduate diploma programs across various disciplines. Their participation offered valuable insights into how educators from diverse educational backgrounds and subject areas engage with emerging technologies in their teaching practice. Including participants from multiple fields enriched the findings and provided a more comprehensive understanding of the influence of ChatGPT across subject domains. This diversity also allowed the analysis of variations in self-regulation and technology integration based on specialization, helping to uncover discipline-specific challenges and opportunities. In **Table 1**, the distribution of in-service teachers is based on their demographic characteristics (including years of experience, gender, and professional development).

Demographic Data

Demographic data collected from in-service teachers, as presented in **Figure 2**, indicates a significant gender gap in the survey sample. Female teachers constituted a substantial majority, with 69.8% participation compared to 30.2% male representation. Furthermore, the examination of **Table 1** indicates a noteworthy gender gap in survey participation in both public and private schools. In private schools, female teachers responded at a rate of 39.0%, which is more than twice the 15.7% participation rate of male teachers. Similarly, in public schools, female teachers responded at a significantly higher rate (30.8%) than did male teachers (24.5%).

Table 1. In-service teachers' sample characteristics

Characteristics		Public school		Private school	
		N	Percentage (%)	N	Percentage (%)
Total sample		141	45.3	170	54.7
Gender	Female	96	30.8	121	39.0
	Male	45	14.5	49	15.7
The educational level	Bachelor	97	31.2	125	40.2
	M A	25	8	31	10
	PhD	16	5.1	17	5.5
Age	Under 25	16	5.1	15	4.8
	25–34	59	19.0	56	18.0
	35–44	44	14.1	39	12.5
	45–54	17	5.5	21	6.8
	55 and above	19	6.1	15	4.8
Years of experience	< 1 year	60	19.3	31	9.6
	From 1 to 5 years	29	9.3	32	10.3
	From 6 to less than 10 years	19	6.1	29	9.3
	More than 10 years	71	22.8	40	12.9
Received any training or professional development on using ChatGPT	Yes	98	31.5	82	26.4
	No	77	24.8	54	17.4
How frequently do you use ChatGPT in your teaching?	Rarely	57	18.3	35	11.3
	Daily	34	11.0	26	8.4
	Weekly	54	17.4	40	12.9
	Monthly	37	12.0	28	9.0

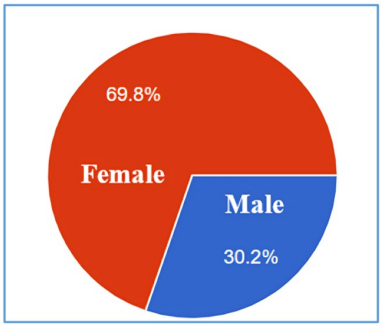

Figure 2. Distribution of in-service teachers by gender percentage (Source: Authors' own creation)

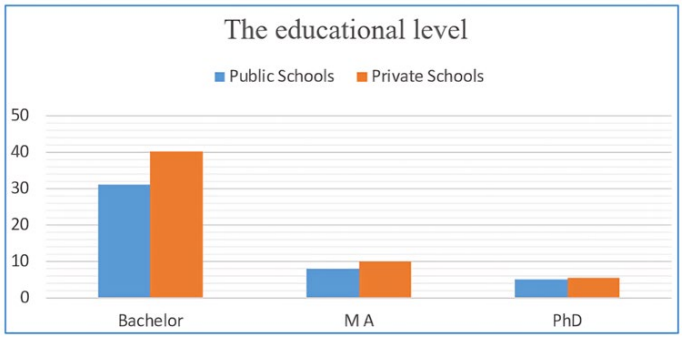

Figure 3. In-service teachers' academic qualifications percentage distribution (Source: Authors' own creation)

An examination of **Figure 3** reveals the distribution of teacher qualifications between the public and private schools. The data indicate that bachelor's degrees are the most prevalent qualification, held by 31.2% of the teachers in public schools and 40.2% of the teachers in private schools.

Furthermore, **Figure 3** highlights a significant difference in the proportion of teachers holding master's degrees: 10.0% of private school teachers possess an MA, compared to 8.0% of public school teachers. Notably, PhDs remain uncommon in both sectors, with only 5.0% of the teachers in each category holding this advanced qualification.

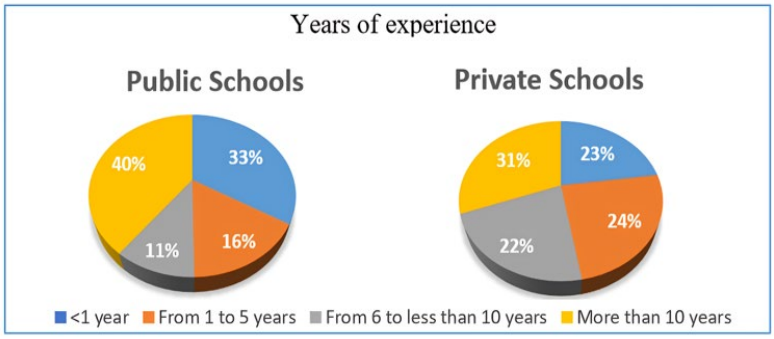

Figure 4. In-service teachers' experience in percentage: Public vs. private (Source: Authors' own creation)

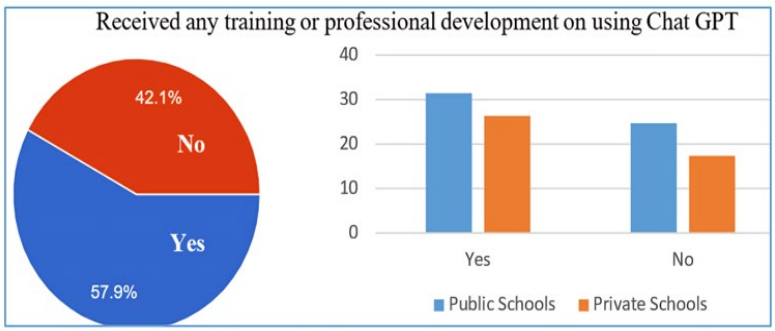

Figure 5. In-service schoolteachers' ChatGPT training percentage (Source: Authors' own creation)

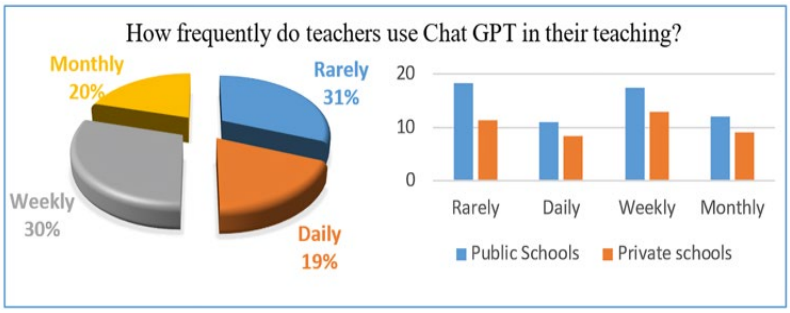

Figure 6. In-service teachers' percentage in using ChatGPT (Source: Authors' own creation)

Figure 4 presents an analysis of teachers' experiences based on their responses to questions regarding their teaching and learning journey. The data indicates that a limited number of teachers (9.6% in public schools and 19.3% in private schools) had less than one year of teaching experience. Conversely, most teachers in both public and private school settings exhibited substantial experience, with 12.9% and 22.8%, respectively, having taught for over ten years.

In **Figure 5**, in-service teachers' responses regarding training on utilizing Chat GPT effectively in teaching are shown. The analysis revealed that a minority of teachers (42.1%) did not undergo training or professional development, with 17.4% and 24.8% of private and public school teachers, respectively. Notably, a higher proportion of public school teachers (31.5%) received training than their counterparts in private schools (26.4%).

Figure 6 depicts teachers' responses to the question, "How frequently do you use Chat GPT in your teaching?" Most teachers from both public and private schools reported using ChatGPT weekly (17.4% and 12.9 %, respectively). Conversely, in the category of "they used ChatGPT rarely," the average percentage of public school teachers exceeded that of their private school counterparts, registering at 18.3% and 11.3%, respectively. This suggests that a significant number of teachers allocate substantial time to using ChatGPT during school days.

Table 2. Breakdown of survey items by ChatGPT-related topics and CIIT survey reliability coefficients

Variable	Items number	Question	Cronbach's alpha
Use of ChatGPT	4	9, 10, 11, 12	.90
Perceived ease of use	6	13, 14, 15, 16, 17, 18	.82
Perceived usefulness	6	19, 20, 21, 22, 23, 24	.88
Behavioral intention	5	25, 26, 27, 28, 29	.79
Expected risks	4	30, 31, 32, 33	.76

Instrument and Procedures

This study used a specially designed online self-report survey tool to collect information about teachers' experiences of working in the UAE using ChatGPT. An online survey titled "ChatGPT's influence on in-service teachers (CIIT)" investigated how ChatGPT affects in-service teachers' self-regulation and teaching practices. We customized a 33-item CIIT survey employing Likert scale of 5-levels for the study. **Table 2** describes the distribution of the questions within these categories. To ensure high construct validity, the CIIT survey was critically revised and reviewed by a panel of academic, psychological, and research experts for clarity, knowledge, and conciseness. Experts provided valuable information, including recommendations for removing, adding, or rearranging specific items. We carefully incorporated most of the recommendations into the final version of the survey.

A pilot study was conducted involving 22 in-service teachers, focusing solely on the wording of the survey items to ensure that the participants accurately understood each question and responded appropriately. Notably, all participants confirmed their responsibility for using ChatGPT. Finally, we calculated Cronbach's alpha coefficient to confirm the reliability of the CIIT survey for the main study, and the results are presented in **Table 2**. As noted in **Table 2**, the CIIT demonstrates high reliability, exceeding the established internal consistency standards. The overall alpha coefficient of 0.86, as well as subscale scores ranging from 0.76 to 0.90, provides compelling evidence of the instrument's trustworthiness as a measure of CIIT.

Data Analysis

This study utilized a 5-point Likert scale, with response options distributed in equal intervals of 0.80 across the total scale (AlArabi et al., 2022). The rating system classified scores from "very little" (1.00–1.80) to "very high" (4.21–5.00). For data analysis, descriptive statistics, including mean (M), standard deviation (SD), and percentages (%), were calculated for each item. Additionally, an independent-sample t-test was conducted to examine potential differences in M self-regulation scores between public and private school teachers following the use of ChatGPT in their teaching practices.

The limitation of this study is the use of questionnaires, which may be influenced by teachers' subjective perceptions rather than actual classroom practices. Additionally, the findings are limited to 311 teachers in the UAE, where technology access, school infrastructure, and teacher training levels vary. Broader generalizations require replication across diverse methodologies, more varied samples, and objective performance measures. Convenience sampling made data collecting more efficient, but it also made the results less generalizable, as the participants may not represent the wider population of UAE in-service teachers. Future research should employ stratified or random sampling methods to ensure broader representation across school types, experience levels, and demographics. This would enhance the validity and applicability of the results and inform more inclusive educational policies and practices.

FINDINGS

Findings Related to RQ1

To explore how private and public-school teachers utilize ChatGPT in their teaching, the responses were analyzed (see **Figure 7**). The findings indicated variations in usage patterns between the two groups. A notable contrast emerged in the primary uses of ChatGPT between public and private school teachers. Public schools predominantly employed it to generate instructional materials (19.0%) and facilitate classroom dialogue (20.1%), whereas private schools prioritized their application in lesson design (24.4%) and fostering engaging learning experiences (19.3%). Public school teachers reported a relatively lower frequency of *using ChatGPT to*

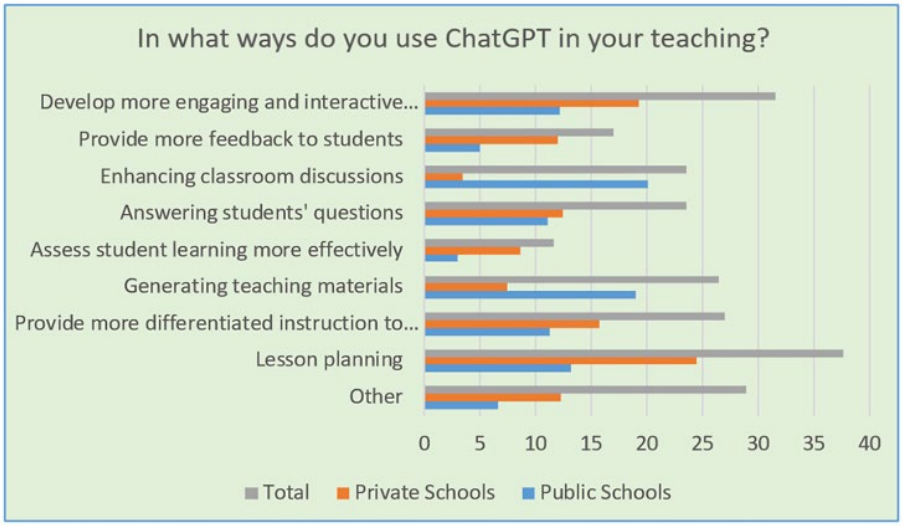

Figure 7. How in-service teachers utilize ChatGPT in their teaching (Source: Authors' own creation)

Table 3. Descriptive statistics of the in-service teachers' ChatGPT ease in two school groups

Perceived ease of use	Public school teachers			Private school teachers		
	M	SD	Degree*	M	SD	Degree*
ChatGPT was understandable & clear for different teaching purposes.	3.06	1.10	Moderate	4.64	0.45	Very high
It was easy for me to integrate ChatGPT into my teaching.	3.54	0.77	High	4.43	0.79	Very high
It was easy for me to become skillful at using ChatGPT for teaching purposes.	3.20	1.11	Moderate	4.04	0.98	High
Using ChatGPT for teaching is effortless.	4.66	0.68	Very high	4.76	1.12	Very high
ChatGPT benefits me in addressing students' questions and needs quickly and easily.	3.86	1.28	High	4.65	1.03	Very high
I can complete tasks on ChatGPT quickly and easily.	4.55	1.09	Very high	4.67	0.62	Very high
Overall scores	3.77	1.01	High	4.51	0.83	Very high

* Very high: 4.21–5.00; High: 3.41–4.20; Moderate: 2.61–3.40; Little: 1.81–2.60; Very little: 1.00–1.80

assess student learning more effectively and provide more feedback to students, accounting for 3.0% and 5.0%, respectively, compared to private school teachers, who reported using ChatGPT for this purpose at 8.5% and 12%. Similarly, in the context of generating teaching materials and enhancing classroom discussions, private school teachers exhibited a slightly lower utilization rate of ChatGPT (20.1% and 3.4%, respectively) than their public school counterparts (19.0% and 20.1%, respectively).

Furthermore, beyond core teaching tasks, nearly 30% of teachers are interested *in exploring ChatGPT for administrative support such as scheduling, report generation, and personalized parent communication*. Notably, private school teachers underscored the utility of ChatGPT for crafting customized instructional materials, whereas public school teachers emphasized its role in fostering collaborative learning activities and encouraging student participation. Despite these potential benefits, some teachers in both sectors may be reluctant to adopt ChatGPT, expressing concerns about its limitations, potential for bias, or its impact on student learning.

The analysis suggests that private and public schools adopt complementary approaches to ChatGPT, aligning its application with their respective instructional philosophies and the desired learning outcomes.

Findings Related to RQ2

Table 3 addresses the second research question: the influence of using ChatGPT on in-service teachers' self-efficacy in the UAE educational context. M, SDs, and degrees of agreement were calculated for in-service teachers' responses and presented to each group based on their perceptions. In **Table 3**, the perceived ease of use of ChatGPT is notably higher for the public-school teachers' group. The M values for all items range from 3.06 and 4.66. Notably, four items scored above 3.20, and only two items surpassed 4.21, indicating a high level of ease of use for ChatGPT. The aspect with the highest perceived ease of use and effectiveness in the public-school teachers' group was *"ChatGPT was understandable and clear for different teaching purposes"*,

Table 4. t-test analysis of gender differences between the two groups

Groups	N	M	SD	t	df	Significance
Female-public	96	3.60	1.43			.042
Female-private	121	4.12	0.89	0.304	215	
Male-public	45	3.32	1.22			.061
Male-private	49	3.88	1.01	0.091	92	

with an M of 4.66. Conversely, the aspects with the lowest perceived ease of use and effectiveness were the same, with an M of 3.06. In the private school teachers' group, a remarkably high perceived ease of use and effectiveness of ChatGPT was observed (M = 4.51). Specifically, one item stood out with a high frequency of perceived ease of use and effectiveness, registering an M of 4.04. The M values for all items in this group fell within the range of 4.04 and 4.76.

This discrepancy suggests that the concept of "clarity" may relate to the clarity of the language or instructions, while "ease of use" may reflect the user's overall experience with the tool. Public school teachers may have relied on their theoretical understanding or prior experience in assessing clarity, while private school teachers, with better technology infrastructure, focused on the fluidity of the actual interaction with the tool.

In summary, private school teachers found ChatGPT significantly easier to use and more effective than their public school counterparts. This could be attributed to several reasons. Private schools often have more flexible budgets, allowing for better and more up-to-date technological infrastructure. This means that teachers are likely to have access to newer devices and more reliable Internet, making their experience with online tools such as ChatGPT smoother. Moreover, private schools might offer more tailored professional development, specifically focused on integrating AI tools, giving their teachers a head start in understanding and using them effectively. Additionally, private schools often emphasize innovation and individualized instruction, which may encourage experimentation with emerging technologies, leading to higher perceived ease of use and effectiveness among their teachers. Finally, smaller class sizes in private schools could also mean that teachers have more time to experiment with and become comfortable with new technologies. This suggests that factors specific to private schools, such as access to resources or technology, may influence teachers' perceptions of AI tools.

Findings Related to RQ3

"To what extent does the use of ChatGPT influence self-regulation among public and private school in-service teachers in the UAE?" To ensure the validity of our statistical analysis, we tested for normality and equal variances. The Kolmogorov-Smirnov test indicated normality ($p > .05$), and Levene's test confirmed homogeneity of variances ($p > .05$). This allowed us to proceed with the parametric statistical tests for data analysis.

The effect size (Cohen's d) was calculated to measure the practical significance of the differences, ranging from 0.45 to 0.65 across different demographic comparisons, indicating a medium to high effect. These results reinforce the importance of using ChatGPT as a tool that has a tangible impact on developing self-regulation among teachers.

Findings Related to Differences in Gender

The outcomes of an independent sample t-test (**Table 4**) indicated a statistically significant difference at the $p < .05$ level between the two groups of female in-service teachers ($t [215] = 0.304$, $p = .042$). Conversely, no statistically significant difference was observed for male in-service teachers ($t [92] = 0.091$, $p = .061$). These findings suggest that among female in-service teachers, the utilization of ChatGPT led to a more significant enhancement in self-regulation for private school teachers compared to their public school counterparts. However, for male teachers in both school types, the use of ChatGPT did not result in a noticeable improvement in self-regulation.

In summary, a statistically significant difference in self-regulation among female in-service teachers, with female private school teachers showing greater enhancement, suggests that factors beyond access to the tool may play a role for female teachers. For example, private schools might foster environments where female

Table 5. t-test analysis of educational level differences between the two groups

Educational level	Groups	N	M	SD	t	df	Significance
Bachelor	Private school	125	4.01	0.87	9.350	220	.004
	Public school	97	3.95	1.12			
MA	Private school	31	4.22	0.95	3.198	54	.032
	Public school	25	4.01	1.01			
PhD	Private school	17	3.62	1.22	2.167	31	.041
	Public school	16	3.30	1.31			

Table 6. t-test analysis of age differences between the two groups

Age	Groups	N	M	SD	t	df	Significance
Under 25	Private school	15	3.44	0.89	2.670	29	.763
	Public school	16	3.13	1.04			
25–34	Private school	56	4.46	0.64	6.767	115	.042
	Public school	59	3.71	0.45			
35–44	Private school	39	4.62	0.97	5. 674	81	.037
	Public school	44	3.84	0.77			
45–54	Private school	21	4.10	1.20	3.865	36	.086
	Public school	17	4.10	0.92			
55 and above	Private school	15	3.76	1.05	3.323	32	.123
	Public school	19	3.15	1.44			

teachers feel more empowered to explore and integrate new technologies, such as ChatGPT, into their teaching practices, leading to greater self-regulation benefits. This could stem from more personalized professional development, readily available technical support, or even a school culture that actively encourages innovation. However, the lack of a significant difference between male in-service teachers in both public and private schools is also noteworthy. This could imply that male teachers might already possess higher baseline levels of technological self-efficacy or self-regulation when it comes to adopting new digital tools, thus leading to a less pronounced "enhancement" from ChatGPT use. Alternatively, this study might not have captured specific nuances in how male teachers engage with AI tools that could influence self-regulation.

Further qualitative investigations could clarify how gender-specific roles, school culture, and technological confidence shape ChatGPT adoption and impact.

Findings Related to Differences in Educational Level

Table 5 presents a compelling picture of ChatGPT's impact on self-regulation across educational levels. Independent sample t-tests revealed statistically significant differences ($p < .05$) in favor of private school teachers at all levels (bachelor's, MA, and PhD). This suggests that regardless of their educational background, in-service teachers in private schools experienced better self-regulation while using ChatGPT in their teaching compared to their public school counterparts.

Findings Related to Differences in Age

Table 6 shows that ChatGPT impacted self-regulation differently, depending on the teacher's age in private and public schools. Independent sample t-tests revealed statistically significant differences ($p < .05$) in favor of private school teachers aged 25–34 and 35–44. Notably, no significant differences were observed at the other age levels. These findings warrant further investigation into the potential age-related factors that influence self-regulation in response to this technology.

Findings Related to Differences in Years of Experience

Table 7 sheds light on a potentially impactful factor in ChatGPT's influence on self-regulation: Teacher experience within school types. Independent-sample t-tests revealed statistically significant ($p < .05$) differences favoring private school teachers with both limited (less than one year) and extensive experience (more than 10 years). This raises questions about the nuanced interplay between teacher experience, the school environment, and technology integration in shaping student self-regulation.

Table 7. t-test analysis of years of experience between the two groups

Experience	Groups	N	M	SD	t	df	Significance
<1 year	Private school	31	4.63	0.76	4.985	89	.011
	Public school	60	4.10	0.56			
From 1 to 5 years	Private school	32	3.38	0.95	4.481	59	.452
	Public school	29	3.43	1.41			
From 6 to less than 10 years	Private school	29	4.04	1.62	4.721	56	.693
	Public school	19	3.25	1.68			
More than 10 years	Private school	40	4.74	0.63	8.834	109	.033
	Public school	71	4.21	0.85			

DISCUSSION

These findings provide a theoretical examination of the adoption of ChatGPT by in-service teachers. Using SCT, the conclusions developed and validated a comprehensive model to understand the patterns of ChatGPT usage in teaching settings. The study found that integrating ChatGPT into UAE education significantly impacted in-service teachers' self-regulation. The findings revealed that teachers who used ChatGPT reported a notable improvement in their ability to refine pedagogies and reflect on how they could address students' diverse needs. This was particularly evident in their capacity to create personalized and adaptive learning experiences. ChatGPT is crucial for helping teachers manage their workload and time more efficiently (Ishmuradova et al., 2025; Javaid et al., 2023). Teachers could rely on ChatGPT to generate formative assessment tools such as quizzes and discussion prompts, which facilitate real-time adjustments to their teaching strategies. This improves their self-regulation skills and allows them to bridge individual and group learning gaps effectively. The findings showed that ChatGPT has a positive impact on in-service teachers' self-regulation, leading to more effective teaching practices. The results showed strong positive correlations between the two constructs, particularly self-esteem and self-efficacy, and ChatGPT use in the educational context. This highlights the importance of ChatGPT in positively influencing in-service teachers' self-regulation, timesaving, self-efficacy, and self-esteem in their academic work, which aligns with the study conducted by Ishmuradova et al. (2025). It emphasizes its ability to improve timeliness and streamline the process of content creation, task completion, productivity, and goal attainment. Furthermore, the analysis shows that academic self-esteem has a significant impact on the adoption of ChatGPT in academia, which aligns with the findings of Javaid et al. (2023) and Ahmad et al. (2023). It is associated with a reduction in work-related stress, the development of positive behaviors, and the hope of achieving high-quality academic results in research, teaching, and assessment by automating the labor-intensive aspects of these tasks (Javaid et al., 2023).

Likewise, implementing ChatGPT in academic activities requires academic self-efficacy and self-confidence in academics' performance and accomplishment goals (Thorp, 2023). ChatGPT has been adopted in academics to enhance academic self-efficacy by providing a powerful enhanced tool that improves ability and thus reduces the burden of research, teaching, and learning, which is consistent with the findings of Bin-Nashwan et al. (2023), Seebut et al. (2024), and Thorp (2023). ChatGPT is beneficial for academic individuals with problems with time management, task completion, work overload, and productivity in general (Bin-Nashwan et al., 2023; Montenegro-Rueda et al., 2023). In this context, the ability of ChatGPT to offer prompt and efficient text-based interaction with people can significantly reduce and alleviate anxiety, stress, depression, discomfort, and anxiety associated with academic performance.

These findings are consistent with international studies such as Bhaskar et al.'s (2024) study in India, which indicated that private school teachers demonstrated greater openness to AI technologies as a result of targeted training, and Chan's (2023) study in Hong Kong, which highlighted the importance of integrating professional development with emerging technologies to ensure the successful adoption of generative tools. This consistency enhances the reliability of the findings and allows for broader generalization.

Furthermore, the results reveal a clear disparity in the use of ChatGPT between public and private school teachers. While public school teachers relied on the tool to produce educational materials and foster classroom discussion (19–20%), private school teachers focused on designing personalized lessons and learning experiences (approximately 24%). These differences are not neutral, as they reflect expected sector-specific variations: In public schools, there is a greater reliance on pre-packaged content due to the centrality

of curriculum development. Despite the UAE's pioneering and significant efforts to keep pace with this technological field, skills tailored to the local context must be enhanced. In private schools, the greater reliance is associated with the potential for uncontrolled expansion of individualization, which could marginalize the human-centered, interactive dimension of teaching. These findings highlight an urgent need for differentiated policies: public school training programs focused on digital proficiency and ethical use, versus private school training focused on innovative use, with controls in place to mitigate over-reliance. Formulating such policy and training interventions will support a more balanced integration of AI into UAE education, while narrowing the gap between the two sectors.

This study also found some issues and ethical dilemmas in which the ChatGPT has apparent advantages for schooling. One of the first is teachers' potential to increasingly rely on ChatGPT to apply the tool to every aspect of the educational process. This overdependence could compromise their capacity to respond to students' dynamism (Abu Khurma et al., 2023). While Chat GPT can expedite lesson planning and strategy development, its convenience raises questions regarding teachers' autonomy and independent thinking (Chan et al., 2023). There is a risk of over-reliance on technology, potentially leading to biased behavior towards some students and issues such as plagiarism and non-compliance with standards. Consider a scenario in which an in-service teacher relies on Chat GPT for lesson preparation. Teachers must exercise professional judgment, drawing on their expertise, knowledge, and life experience to make independent decisions. Integrating technology with professional judgment is key to effectively managing this process (Bekeš & Galzina, 2023). Despite these challenges, researchers strongly insist that ChatGPT should be adopted in the UAE education system. In-service teachers appreciated the positive impact of the tool on the learning and teaching processes. It is beneficial to understand how ChatGPT can reduce lengthy work and provide versatile learning opportunities. For this reason, while schools engaged in methods derived from AI resources while responding to concerns regarding misuse and academic integrity, the UAE paved the way for integrating technology into education. Thus, it is necessary to emphasize the need to provide training corresponding to the present learning environment to facilitate the incorporation of this tool. Therefore, proper technological training of in-service teachers should be ensured so that they can use this instrument in the classroom (Montenegro-Rueda et al., 2023).

The discovered differences suggest that educational policies should be designed to take into account the specificities of each type of school and focus on developing teachers' digital competence. The findings also underscore the need to develop training programs geared toward the effective use of generative technologies like ChatGPT, particularly in public schools and for less experienced teachers. These findings can serve as a basis for designing flexible training modules that take into account professional and demographic backgrounds.

CONCLUSION

In conclusion, this study emphasizes that the integration of generative AI tools such as ChatGPT into education in the UAE represents a long strategic opportunity to reshape teaching and learning practices in and within school settings. The results demonstrated that the conscious use of these technologies can contribute to raising teachers' efficiency, enhancing their ability to self-regulate which leads to more concrete metacognition practices as well, and providing more interactive and flexible learning experiences. However, optimal utilization requires the establishment of clear regulatory frameworks and specialized training programs that take into account the specificities of each type of school, along with policies that ensure ethical and responsible use. From this perspective, these recommendations represent a practical call for decision-makers and practitioners alike to adopt a balanced approach based on both empowerment and oversight, ensuring the use of ChatGPT as a tool that supports educational innovation without compromising professional values or teacher autonomy.

Implications

Although clear policies and guidelines for employing AI applications in teaching and learning settings are still lacking, this study provides important and timely empirical insights that may guide legislation and practices in educational settings, particularly for in-service teachers. The findings show that ChatGPT has

positively impacted teachers' learning styles and helped them refine their pedagogies to meet students' diverse needs. These findings highlight the motivations that lead in-service teachers to adopt ChatGPT. In-service teachers often face heavy workloads; thus, they see ChatGPT as a valuable tool for improving time management and relieving anxiety and stress. This implies the need to develop effective personalization and adaptive learning experiences. This study offers essential and timely findings as a reference for potential restrictive measures that can change policies and practices in academic organizations and can be helpful, particularly for in-service teachers, owing to the absence of clear rules and regulations that determine the use of AI in academic environments. In-service teachers see ChatGPT as an invaluable tool for enhancing time management and reducing stress and anxiety. This could lead to the creation of more customized and flexible learning experiences. They also see this method as a means of boosting their educational self-esteem, which reflects their assurance of their abilities and successes. From a wider perspective, the study's conclusions are consistent with the current digital revolution in education, highlighting the significance of equipping teachers with AI-driven resources. This will ultimately change the dynamics of learning in the UAE classrooms.

Recommendations

Regarding the recommendations, there is an inherent need for a comprehensive examination and validation of all educational content, especially for research purposes. While teachers aim to bolster their self-esteem and efficacy by achieving optimal performance metrics, it is imperative to acquaint them with the limitations associated with ChatGPT. These limitations include its potential to possess outdated knowledge, generate inaccurate or falsified information, and rely on data that may exhibit bias (Liu, 2023). To uphold research ethics, ensuring the ethical use of all AI-generated content platforms is paramount.

It is recommended that the creators of AI language models, publishers, academic institutions, and other pertinent groups work together to enhance the security of AI chatbots, such as ChatGPT and any further updates (Lo, 2023).

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APPENDIX A

Table A1. Research instrument (survey)

No	Statement
Section 1. Informed consent	
1	Do you wish to participate? Yes No
Section 2. Demographic data	
2	Gender: Male Female
3	Age: Under 25 25–34 35–44 45–54 55 and above
4	Educational qualifications: Bachelor's degree Master's degree PhD
5	Number of years of teaching experience: Less than 1 year 1–5 years 6–10 years More than 10 years
6	School type: Public Private
7	Subject(s) taught: .....
8	What grade level do you teach? .....
Section 3. Use of Chat GPT (goal setting)	
9	Have you used Chat GPT or similar AI-powered chatbots in your teaching practices?
10	How frequently do you use Chat GPT in your teaching?
11	Have you received any training or professional development on using Chat GPT effectively in your teaching?
12	In what ways do you use ChatGPT in your teaching? (select all that apply) Lesson planning. Provide more differentiated instruction to meet the needs of all learners. Generating teaching materials. Assess student learning more effectively. Answering students' questions. Enhancing classroom discussions. Provide more feedback to students. Develop more engaging and interactive lessons. Other (please specify)
Section 4. Perceived ease of use (stress management) (rate from strongly disagree to strongly agree)	
13	ChatGPT was understandable and clear for different teaching purposes.
14	It was easy for me to integrate ChatGPT into my teaching.
15	It was easy for me to become skillful at using ChatGPT for teaching purposes.
16	Using ChatGPT for teaching is effortless.
17	ChatGPT benefits me in addressing students' questions and needs quickly and easily.
18	I can complete tasks on ChatGPT quickly and easily.
Section 5. Perceived usefulness (time management) (rate from strongly disagree to strongly agree)	
19	Using ChatGPT had a positive impact on my teaching.
20	ChatGPT improves the learning experience in my classroom.
21	Integrating ChatGPT into my teaching enhances the learning environment and makes it more enjoyable.
22	The responses generated by ChatGPT are helpful for teaching.
23	I believe that ChatGPT can increase my efficiency in learning.
24	ChatGPT can help me to create a more positive and supportive learning environment.

Table A1 (Continued).

No	Statement
Section 6. Behavioral intention (emotional regulation) (rate from strongly disagree to strongly agree)	
25	I intend to continue incorporating ChatGPT into my teaching in the future.
26	I would introduce ChatGPT to fellow educators.
27	I would recommend ChatGPT to my students.
28	I am satisfied with ChatGPT as a useful tool for teaching.
29	I feel excited about using ChatGPT to complete tasks.
Section 7. Expected risks and concerns	
30	ChatGPT is not appropriate for all students.
31	ChatGPT is not aligned with my teaching curriculum.
32	ChatGPT is too difficult to learn how to use.
33	ChatGPT is a security risk.