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Teachers' Perceptions and Intentions toward AI Integration in Education: Insights from the UTAUT Model

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Abstract

The integration of artificial intelligence (AI) into education is rapidly influencing teaching and learning practices worldwide. Yet, the perspectives of minority educators—particularly Arab teachers in Israel—remain underexplored. This study investigates Arab teachers' perceptions toward AI integration in education and identifies key predictors of their behavioral intention to adopt such tools, using the Unified Theory of Acceptance and Use of Technology (UTAUT) as a guiding framework. A mixed-methods approach was employed, involving (N= 100) Arab teachers from elementary, middle, and high schools in Israel. Quantitative data were collected through an online survey measuring five UTAUT constructs: performance expectancy, effort expectancy, social influence, facilitating conditions, and behavioral intention. Qualitative data were gathered through open-ended question to enrich the analysis. The overall perception of AI integration was positive, with the highest score observed for behavioral intention, indicating a strong willingness among teachers to adopt AI tools. Performance expectancy followed closely reflecting confidence in AI's potential to enhance instructional quality and learning outcomes. Effort expectancy received a moderate, suggesting that while teachers view AI tools as generally accessible, some challenges remain. Social influence scored slightly lower pointing to mixed perceptions of support from colleagues and institutions. Facilitating conditions received the lowest rating highlighting concerns about inadequate infrastructure, resources, and training. Regression analysis revealed that performance expectancy and facilitating conditions were significant predictors of behavioral intention to use AI, underscoring the importance of both perceived usefulness and the availability of supportive environments in influencing teachers' readiness to integrate AI into their practice. This study highlights that while Arab teachers in Israel exhibit motivation and openness toward adopting AI in education, sustainable implementation requires targeted investment in infrastructure, culturally responsive AI tools, and systemic support mechanisms. These insights contribute to

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the discourse on inclusive and equitable technology integration in education, particularly within underrepresented communities.

Keywords: Artificial intelligence, behavioral intention, mixed method, perceptions

1. Introduction

In recent years, the integration of innovative technologies into education has attracted considerable scholarly attention (Watted, 2023; Watted & Barak, 2024). In particular, the use of artificial intelligence has sparked widespread public debate (Ali & Okon, 2024; Almasri, 2024). The increasing reliance on AI tools and digital platforms is reshaping teaching and learning processes, offering new opportunities for personalized instruction, content generation, and data-driven decision-making. At the same time, these developments present complex pedagogical, ethical, and organizational challenges for educators (Altinay et al., 2024; Eden et al., 2024)."

Teachers play a pivotal role in determining the success of technological innovations in education (Hadad, Watted, & Blau, 2023). Their perceptions, acceptance, and preparedness directly influence the extent to which AI tools are meaningfully integrated into classroom practice (Eden et al., 2024; Xu & Ouyang, 2022; Yim & Wegerif, 2024; Zhai, 2024). As AI continues to evolve and find applications across a wide range of educational contexts, it becomes increasingly important to investigate the factors that shape teachers' willingness and ability to adopt these tools.

One of the most widely used theoretical models to examine technology acceptance is the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003). The UTAUT model identifies four core constructs that influence an individual's intention and behavior regarding technology adoption: performance expectancy, effort expectancy, social influence, and facilitating conditions. Performance expectancy refers to the degree to which teachers believe that using AI will enhance their teaching effectiveness. Effort expectancy reflects perceptions of ease of use. Social influence concerns the extent to which teachers perceive support from colleagues, administrators, and the broader school environment. Facilitating conditions encompass the infrastructure, professional development, and technical support available to teachers to assist in the adoption of new technologies (Xue et al., 2024; Zhai, 2024).

While numerous studies have investigated technology adoption among teachers using the UTAUT framework (Benicio et al. 2024; Pérez, 2024.), much of the existing literature has focused on general digital tools or specific platforms within majority populations or technologically advanced educational systems. Limited attention has been given to teachers in minority or underrepresented communities, such as Arab minority teachers in Israel, whose

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contexts may include unique linguistic, cultural, and infrastructural factors influencing their engagement with AI.

This study seeks to address this gap by examining Arab minority teachers' perceptions of AI technologies in education and identifying the key factors that predict their behavioral intention to use these tools in teaching, based on the UTAUT model. Through this investigation, the study aims to contribute a more context-sensitive understanding of AI adoption in education, with implications for policy, practice, and teacher professional development.

2. Literature Review

2.1 The Transformative Role of Artificial Intelligence in Education

Artificial Intelligence (AI) refers to the simulation of human cognitive functions—such as reasoning, learning, and problem-solving—by machines (Xu & Ouyang, 2022). In the field of education, AI has emerged as a transformative force, with the potential to reshape teaching methodologies, enhance learning experiences, and improve educational outcomes. Increasingly, AI is being utilized to support personalized learning, improve student engagement, and streamline administrative tasks (Almasri, 2024; Daskalaki et al., 2024).

A central contribution of AI in education is its capacity to individualize learning. Through adaptive technologies and intelligent algorithms, AI can tailor instructional content to meet the pace, level, and learning style of each student. This allows for the creation of active, student-centered learning environments in which learners are encouraged to take ownership of their educational journey (Xu & Ouyang, 2022; Eden et al., 2024). Teachers have reported using AI-based tools such as ChatGPT to assist in lesson planning, develop creative teaching materials, and facilitate more interactive learning experiences (Shamir-Inbal et al., 2024). These applications support a shift from traditional teacher-centered instruction to more innovative, flexible, and technology-integrated pedagogies aligned with 21st-century learning goals (Kuleto et al., 2022).

Furthermore, AI tools empower educators to monitor student progress in real-time through data analytics and automated feedback systems. Such technologies enable early identification of learning gaps and allow teachers to offer timely, targeted interventions (Almasri, 2024; Su & Yang, 2023). For example, adaptive platforms can analyze patterns in student performance and suggest personalized resources or tasks aimed at addressing specific areas of difficulty. This capability is particularly valuable for supporting diverse learners, including those with learning disabilities or from marginalized backgrounds, by providing equitable and customized learning support (Eden et al., 2024).

In light of the aforesaid, and despite the growing presence of AI in educational contexts, little is known about how minority educators—specifically Arab teachers in Israel—perceive and

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adopt such technologies. Given their unique sociocultural setting, exploring these perceptions is vital for promoting inclusive implementation. Guided by the Unified Theory of Acceptance and Use of Technology (UTAUT), this study aims to identify the key factors that influence Arab teachers' behavioral intention to integrate AI into their teaching practices, thereby addressing a critical gap in the literature.

2.2 The Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh et al. (2003), offers a comprehensive framework for understanding the key factors that influence individuals' behavioral intentions to adopt and utilize technology. It has become one of the most widely applied models in the field of technology adoption, including educational settings (Benicio et al., 2024; Shamir-Inbal et al., 2024).

The UTAUT model identifies four core constructs that shape users' technology adoption behaviors: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC). These constructs are moderated by variables such as age, gender, experience, and voluntariness of use (Xue et al., 2024), allowing for contextual sensitivity and adaptability across different populations and settings

Performance Expectancy (PE)

Performance Expectancy refers to the degree to which an individual believes that using a particular technology will improve his or her job performance. In educational contexts, PE is considered a key determinant of teachers' willingness to integrate AI technologies into their teaching. When teachers perceive AI tools as effective in enhancing instructional quality, increasing student engagement, and improving learning outcomes, they are more likely to adopt such tools (Cabero-Almenara et al., 2024; Zhai, 2024).

Recent studies have highlighted how AI tools, particularly adaptive learning platforms and intelligent tutoring systems, contribute to personalized instruction by adjusting content to students' individual needs and learning paces (Zhai, 2024; Al-Abdullatif, 2024). These systems not only support improved academic outcomes but also encourage teachers to embrace AI by providing clear, observable benefits in classroom performance. For instance, real-time feedback mechanisms embedded in AI-powered assessment tools enable timely interventions that help address student learning gaps (Benicio et al., 2024).

Moreover, the automation of administrative tasks through tools such as ChatGPT has further strengthened teachers' perceptions of AI's usefulness. These tools assist in lesson planning, grading, and content generation, reducing educators' workload and freeing up time for more student-centered and innovative teaching strategies (Budhathoki et al., 2024). As a result, teachers increasingly view AI as a means to enhance both instructional quality and professional efficiency.

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Effort Expectancy (EE)

Effort Expectancy (EE) refers to the degree to which an individual perceives a particular technology as easy to use. Within the Unified Theory of Acceptance and Use of Technology (UTAUT), EE is considered a crucial predictor of users' willingness to adopt technological innovations. In educational contexts, teachers are more likely to engage with AI tools when they perceive them as intuitive, accessible, and require minimal effort to learn and integrate into their existing pedagogical practices (Velli & Zafiropoulos, 2024).

One of the primary contributors to high effort expectancy is the user-friendly design of AI applications. Tools such as ChatGPT, which feature simple interfaces and streamlined functionalities, help minimize the cognitive load for users and facilitate faster adoption (Shamir-Shamir-Inbal et al., 2024). Teachers can use these platforms to generate lesson plans, design interactive learning activities, and automate routine tasks without needing advanced technical expertise. This ease of use is particularly important for educators who may have limited digital literacy but are nonetheless eager to enhance their instructional practices (Walter, 2024).

Another important dimension of EE is the compatibility of AI tools with existing teaching workflows. Technologies that align with current practices and require minimal disruption are more likely to be embraced. For instance, adaptive learning systems and automated grading platforms are often designed to complement rather than replace teachers' routines, thereby facilitating smoother integration (Benicio et al., 2024). This compatibility reduces perceived effort and fosters a sense of continuity, which can be critical in encouraging adoption (Eden et al., 2024).

Social Influence (SI)

Social Influence (SI) refers to the extent to which an individual's decision to adopt technology is shaped by the opinions, behaviors, and expectations of others within their social or professional environment (Venkatesh et al., 2003). In educational settings, SI is particularly relevant, as teachers often look to colleagues, supervisors, and institutional leaders when forming attitudes toward technological innovation (Budhathoki et al., 2024). The collaborative nature of teaching and the role of shared norms within school culture can intensify the impact of social dynamics on educators' willingness to adopt new tools (Velli & Zafiropoulos, 2024).

Within the UTAUT framework, SI is recognized as a key predictor of behavioral intention (BI) to use technology. In institutional contexts, the approval and practices of trusted peers or authority figures can serve to legitimize new technologies and reduce uncertainty regarding their use. Empirical findings on the influence of SI in AI adoption remain mixed. Studies conducted in higher education contexts (e.g., Cabero-Almenara et al., 2024; Pérez, 2024) have found SI to be a significant factor in shaping faculty members' adoption of AI tools.

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Conversely, Andrews et al. (2021) reported no significant relationship between SI and librarians' intention to adopt AI. In primary and secondary education, SI appears to play a more consistent role. Yao and Halim (2023) identified SI, alongside performance expectancy, as a primary driver of AI acceptance among schoolteachers. Notably, their study also found that teachers' educational backgrounds moderated this relationship, suggesting that the influence of social norms is more pronounced among educators with greater technological or pedagogical training.

Facilitating Conditions

Facilitating Conditions refer to the resources, infrastructure, and support systems available to educators when adopting new technologies. In the Unified Theory of Acceptance and Use of Technology (UTAUT), this construct is considered a critical determinant of successful technology adoption, including AI tools in educational settings. The availability of robust technical support, professional development opportunities, and reliable infrastructure significantly influences teachers' ability to integrate AI effectively into their practices (Cabero-Cabero-Almenara et al., 2024).

Reliable infrastructure forms the backbone of AI adoption in schools. Studies emphasize that institutions with access to high-speed internet, AI-compatible devices, and advanced computing facilities report higher rates of successful AI integration (Benicio et al., 2024). For instance, Zhai (2024) highlights how schools equipped with modern digital tools not only enhance teachers' confidence but also reduce technical challenges that could hinder adoption. Without these foundational elements, even the most user-friendly AI tools can fail to deliver their potential benefits.

Training and professional development are integral components of facilitating conditions, as they equip educators with the necessary skills to navigate and utilize AI technologies effectively. Walter (2024) underscores the importance of structured training programs that demonstrate the practical applications of AI tools in teaching. Such initiatives not only demystify AI for teachers but also foster a sense of competency and readiness. Su et al. (2023) report that schools offering hands-on workshops and tutorials see significantly higher adoption rates, as these programs address teachers' concerns and build their confidence.

Consistent technical assistance ensures that educators can troubleshoot issues promptly, thereby minimizing disruptions to their workflow. Shamir-Inbal et al. (2024) stress that schools providing continuous support, such as IT helpdesks or dedicated AI coordinators, experience smoother integration of AI technologies. This is particularly critical during the initial stages of adoption when teachers may encounter technical challenges or uncertainties.

Facilitating conditions also extend to financial and policy-level support. Cabero-Almenara et al. (2024) argue that government funding and institutional policies prioritizing digital

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transformation play a pivotal role in creating an enabling environment for AI adoption. For example, subsidies for purchasing AI tools or grants for professional development can significantly lower the barriers to adoption, especially in under-resourced schools.

Collaboration among teachers and institutions further strengthens facilitating conditions. Budhathoki et al. (2024) highlighted the effectiveness of resource-sharing models, where schools pool their technological assets and expertise to support broader adoption. This approach not only optimizes resource utilization but also fosters a culture of collective learning and innovation.

While facilitating conditions provide a strong foundation for AI adoption, challenges such as unequal access to resources, lack of training opportunities, and insufficient technical support persist. Zhang and Wareewanich (2024) note that rural and underprivileged schools often face significant disparities in infrastructure, which can exacerbate educational inequities. Addressing these gaps through targeted interventions, such as government programs or public-private partnerships, is essential to ensure equitable access to AI technologies.

3. Methodology

Research goals and questions

The purpose of this study was to examine Arab teachers' perceptions and practices regarding the use of artificial intelligence (AI) tools in education. Specifically, the study aims to analyze these perceptions through the lens of the Unified Theory of Acceptance and Use of Technology (UTAUT), and to identify the key factors that predict teachers' behavioral intention to integrate AI tools into their instructional practices. This goal raised the following research questions:

1. How do Arab teachers perceive and use artificial intelligence (AI)tools in their educational practice?

2. How do Arab teachers utilize artificial intelligence (AI) tools in education, as reflected in the five dimensions of the Unified Theory of Acceptance and Use of Technology (UTAUT)

3. What are the key predictors of Arab teachers' behavioral intention to use AI tools in teaching, as defined by the UTAUT model?

Research participants

The study included a sample of (N = 100) Arab minority teachers from various regions in Israel. The gender distribution showed that 83% of the participants were female and 17% were male. In terms of age, 38% of the teachers were between 25 and 35 years old, 37% were aged 36 to 45 years, and 25% were over the age of 46.

Regarding academic qualifications, 42% of the participants held a bachelor's degree, while 58% held a master's degree or higher. In terms of the educational levels at which they taught, 46%

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were employed in elementary schools, 22% in middle schools, 25% in high schools, and 7% in comprehensive schools.

Teaching experience varied across the sample: 17% reported less than 5 years of experience, 19% had 6 to 10 years, 27% had 11 to 15 years, 17% had 16 to 20 years, and 20% had more than 21 years of teaching experience.

In terms of geographic distribution, 19% of the participants worked in the Southern District, 54% in the Northern District, and 27% in the Central District. Regarding professional development in digital learning, 45% of the teachers reported having participated in relevant training programs, while 55% had not received any training in this area.

Research Methods

This study employed a mixed-methods descriptive approach, combining quantitative and qualitative techniques to explore Arab teachers' perceptions of using AI tools in education. The quantitative component involved statistical analysis of numerical data, while the qualitative component focused on interpreting non-numerical data such as opinions and perceptions. This integrated approach enabled a comprehensive understanding of the research topic and strengthened the validity of the findings (Creswell & Clark, 2017).

Research tools

The research instrument was a structured, online questionnaire developed using Google Forms. It consisted of three main sections:

1. AI Usage and Familiarity

The first section focused on exploring the extent to which teachers use AI tools in their teaching practice and the purposes for which these tools are employed. This section included five questions: four closed-ended questions examining the frequency of use, level of familiarity, and pedagogical goals, and one open-ended question inviting participants to name specific AI applications they had used.

2. Behavioral Intention and UTAUT Dimensions

The second section examined teachers' behavioral intention to use AI tools and the factors influencing their adoption, based on the Unified Theory of Acceptance and Use of Technology (UTAUT) framework (Venkatesh et al., 2003). This section comprised 17 items rated on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). The items were distributed across five UTAUT constructs: Performance Expectancy (4 items), e.g., "Using AI tools is beneficial in teaching"; Effort Expectancy (4 items), e.g., "It is easy for teachers to become skilled in using AI tools"; Social Influence (3 items), e.g., "The school supports teachers in learning to use AI tools"; Facilitating Conditions (3 items), e.g., "Teachers have access to the

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necessary resources to practice using AI tools"; Behavioral Intention (3 items), e.g., "I intend to use AI tools in teaching whenever possible."

3. Demographic Information

The third section collected demographic data to examine potential correlations between teachers' backgrounds and their perceptions of AI. It included 13 questions covering variables such as age, gender, teaching subject, academic qualifications, teaching level, years of experience, and participation in professional development in digital learning.

Content validity was ensured through expert review and professional translation from English to Arabic, followed by a back-translation process to confirm conceptual accuracy and cultural relevance. Internal consistency was assessed using Cronbach's alpha. Reliability coefficients indicated high internal consistency for the overall perception scale ($\alpha = 0.90$), as well as for performance expectancy ($\alpha = 0.79$), effort expectancy ($\alpha = 0.66$), social influence ($\alpha = 0.79$), facilitating conditions ($\alpha = 0.85$), and behavioral intention ($\alpha = 0.86$). These results confirm that the instrument is both valid and reliable for investigating teachers' perceptions and intentions regarding AI integration in education.

4. Finding

4.1. Teachers' Perceptions and Use of AI Tools in Education

To address the first research question, which explored Arab teachers' perceptions of AI tools in education, descriptive statistics were calculated for variables related to AI usage, including experience, frequency, familiarity, and purpose.

The findings revealed that most participants (77%) reported having used AI tools in their teaching practice, while 23% indicated no prior use (see Figure 1).

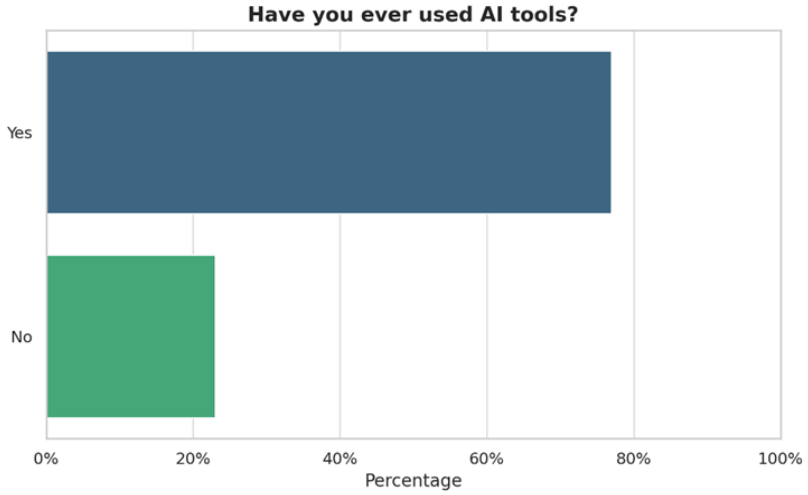

Figure 1. Use of AI Tools Among Arab Teachers(N=100)

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When asked about the frequency of use, half of the teachers (50%) stated that they used AI tools regularly, and 20% reported using them extensively to the point of reliance. In contrast, 23% had never used them, and 7% reported only occasional use (see Figure 2).

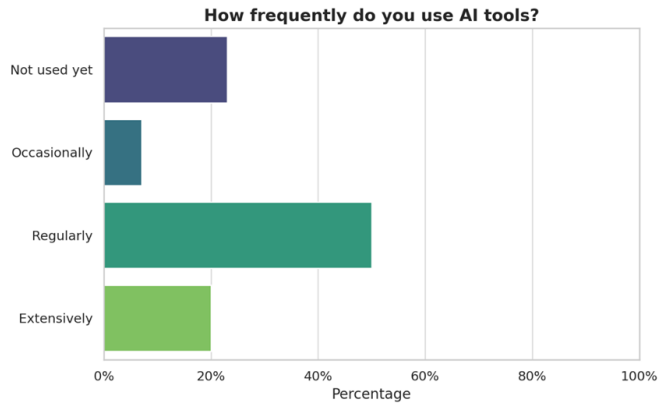

Figure 2 Frequency of AI Tool Usage Among Arab Teachers (N=100)

In terms of self-assessed familiarity and confidence, responses indicated a developmental progression in teachers' engagement with AI technologies. While 23% of participants reported being aware of AI tools without having used them, others demonstrated various levels of involvement: 15% attempted to learn the basics, 10% had begun to understand how to use AI in teaching, and 22% expressed feeling comfortable using AI tools. Moreover, 15% stated that they used AI as a supportive educational tool, and another 15% described their use as creative and innovative (see Figure 3).

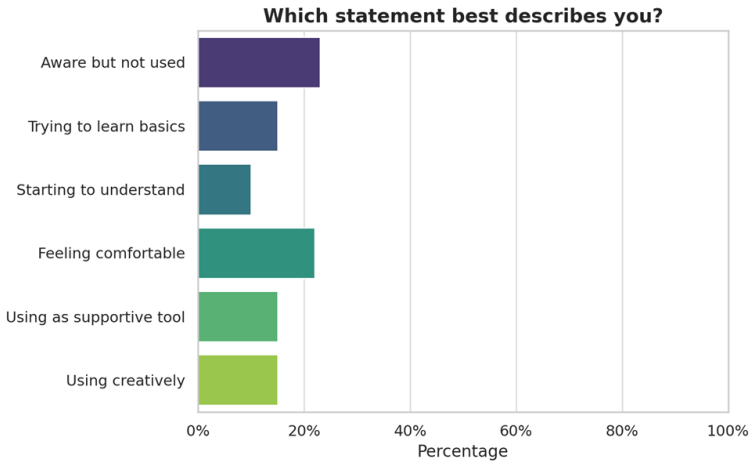

Figure 3 Self-Reported Proficiency Levels in Using AI Tools(N=100)

Regarding the purposes of AI usage, most teachers (51%) reported using AI tools for educational objectives, such as lesson planning or instructional support. A smaller proportion

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used AI for research (11%) or personal tasks like writing emails (10%). Interestingly, 23% indicated that they had never used AI tools for any specific purpose (see Figure 4). This suggests that while a majority recognize the educational value of AI, a significant minority remain disengaged from its practical applications.

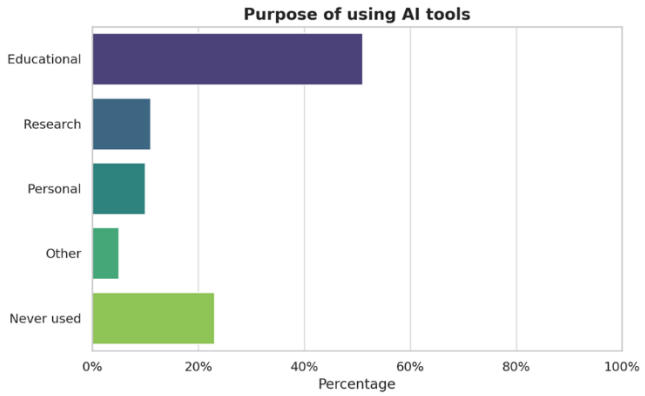

Figure 4 Purposes for Using AI Tools in Education(N=100)

Overall, these findings indicate that Arab teachers hold generally positive perceptions of AI technologies in education and are increasingly integrating them into their teaching practices. However, levels of usage and familiarity vary, reflecting both emerging enthusiasm and existing gaps in training and access.

Types of AI Technologies Used by Teachers

As part of the investigation into teachers' perceptions and practices, participants were asked to identify the specific AI tools they use in their educational and professional activities. The results are presented in Figure 5.

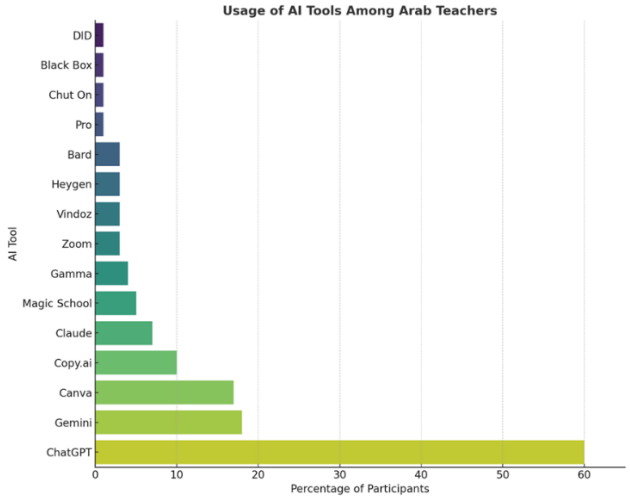

Figure 5. Types of AI tools Used by Teachers

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Figure 5. reveals a clear preference for widely known and accessible technologies. ChatGPT emerged as the most used tool, with 60% of participants reporting its use in various educational contexts. This was followed by Google Gemini, used by 18% of teachers, and Canva, reported by 17% of participants as part of their instructional toolkit.

Other tools were used to a lesser extent. Copy.ai was mentioned by 10% of respondents, Claude by 7%, Magic School by 5%, and Gamma by 4%. A number of applications were used by only 3% of teachers, including Bard, Heygen, Vindoz, and Zoom. Finally, several less familiar platforms—such as DID, Black Box, Chut On, and Pro—were reported by just 1% of participants.

These findings highlight a clear tendency among teachers to adopt well-known AI tools that are user-friendly and readily available. ChatGPT appears to be highly favored due to its versatility in generating educational content and assisting with instructional tasks. While the data indicates a certain diversity in the range of tools used, it also reveals a strong reliance on a small number of platforms.

This pattern suggests a potential gap in awareness and training regarding lesser-known AI applications. Expanding professional development opportunities could help educators explore and adopt a broader range of AI tools, thereby enriching their instructional practices and enhancing the integration of AI in the classroom.

4.2 Teachers' Perceptions According to UTAUT Dimensions

To explore the factors influencing Arab teachers' intention to use artificial intelligence (AI) tools in education, participants' responses were analyzed based on the five dimensions of the Unified Theory of Acceptance and Use of Technology (UTAUT) model (Venkatesh et al., 2003). These dimensions include performance expectancy, effort expectancy, social influence, facilitating conditions, and behavioral intention. In addition, an overall perception score was calculated to reflect participants' general attitudes toward AI integration. Table 1 presents means and standard deviations for UTAUT constructs related to teachers' perceptions of AI use in education

Table 1: Means and Standard Deviations for UTAUT Constructs Related to Teachers' Perceptions of AI Use in Education

UTAUT Dimension	Mean (M)	Standard Deviation (SD)
Performance Expectancy	3.67	0.63
Effort Expectancy	3.44	0.91
Social Influence	3.30	0.78
Facilitating Conditions	3.14	0.88
Behavioral Intention	3.73	0.76
Overall Perception	3.47	0.61

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As shown in Table 1, the overall perception of AI integration among participants was positive, with a mean score of (M = 3.47, SD = 0.61). The highest score was recorded for behavioral intention (M = 3.73, SD = 0.76), indicating a strong willingness among teachers to incorporate AI tools into their teaching. This was followed by performance expectancy (M = 3.67, SD = 0.63), reflecting teachers' belief in the potential benefits of AI to improve teaching effectiveness and learning outcomes. Effort expectancy received a moderate score (M = 3.44, SD = 0.91), suggesting that teachers perceive the learning curve associated with AI tools as manageable but not without challenges. Social influence was rated slightly lower (M = 3.30, SD = 0.78), pointing to mixed perceptions regarding institutional and peer support for AI adoption. Notably, facilitating conditions received the lowest score (M = 3.14, SD = 0.88), highlighting a perceived lack of resources, infrastructure, and technical support necessary for the effective implementation of AI in educational settings. These findings indicate a generally favorable orientation toward AI use among Arab teachers, while also underscoring the importance of addressing systemic barriers to ensure sustainable and meaningful integration.

4.3 Predictors of Behavioral Intention to Use AI Tools in Teaching

To address the third research question, which aimed to identify the factors that predict teachers' behavioral intention to use AI tools in teaching, a linear regression analysis was conducted. The analysis examined the contribution of the four UTAUT constructs—performance expectancy, effort expectancy, social influence, and facilitating conditions—as predictors of behavioral intention.

The results, presented in Table 2, indicate that the regression model explained 46% of the variance in behavioral intention (R^2 = 0.46, $p < 0.01$), suggesting that teachers' perceptions of AI tools play a significant role in shaping their readiness to adopt them.

Table 2 Linear Regression Analysis Predicting Behavioral Intention to Use AI Tools (N = 100)

Predictor	β	R^2
Performance Expectancy	0.37**	0.46**
Effort Expectancy	0.13	
Social Influence	0.09	
Facilitating Conditions	0.25*	

**p<0.01, *P<0.05

Among the predictors, performance expectancy emerged as the strongest and most significant factor (β = 0.37, $p < 0.01$). This finding suggests that teachers who perceive AI tools as beneficial and capable of enhancing teaching effectiveness are more likely to intend to use them in practice. Facilitating conditions also showed a significant positive effect on behavioral

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intention ($\beta = 0.25$, $p < 0.05$), indicating that access to technological resources and institutional support increases the likelihood of teachers adopting AI tools. In contrast, effort expectancy ($\beta = 0.13$) and social influence ($\beta = 0.09$) were not statistically significant predictors, suggesting that ease of use and social encouragement are less influential in shaping teachers' intentions in this context.

These results highlight the importance of strengthening teachers' awareness of the practical benefits of AI and improving the availability of supportive infrastructure. Together, these strategies may significantly enhance the successful integration of AI technologies into educational practice.

5. Discussion

Teachers' Perceptions and Use of AI Tools in Education

The findings of this study reveal that Arab teachers in Israel generally hold positive perceptions toward the use of artificial intelligence (AI) tools in education. Most participants indicated that they had prior experience using such tools, and many reported integrating them into their teaching practices with varying levels of frequency and purpose. These results suggest an increasing openness among educators to engage with emerging technologies as part of their pedagogical approach. These findings are in line with previous research that has documented positive teacher attitudes toward AI (Robby et al., 2024; Şenel, 2024; Uygun, 2024), particularly when its benefits are clear and the tools are perceived as accessible and supportive of teaching goals (Yim & Wegerif, 2024; Ali & Okon, 2024).

A closer look at usage patterns shows a spectrum of engagement, ranging from basic awareness to innovative and creative application. Some teachers expressed initial familiarity or exploratory use, while others demonstrated confidence and routine implementation of AI tools in their classrooms. This progression suggests that AI adoption is not uniform, but rather evolves according to individual exposure, confidence, and perceived relevance to teaching objectives.

One of the key insights from the data is that teachers primarily employ AI tools for educational purposes, particularly in lesson planning, instructional support, and classroom management. This focus reflects a practical orientation, where AI is viewed as a means to enhance teaching efficiency and enrich student learning experiences. The use of AI for research and personal productivity, while present, appears to be secondary, indicating that educators perceive these tools first and foremost as pedagogical assets.

The most frequently used AI applications were those that are widely accessible, intuitive, and already integrated into the broader digital landscape. Tools such as ChatGPT and Canva stood out as preferred options, likely due to their ease of use and immediate applicability in the

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classroom. The popularity of these tools also reflects the influence of global technology trends, and the growing availability of AI-based platforms tailored to educators' needs.

Despite the overall positive outlook, the findings also point to a substantial portion of teachers who remain either unfamiliar with AI or hesitant to adopt it fully. The concentration of usage around a small number of tools suggests a limited awareness of the broader ecosystem of AI applications available to educators. This may stem from a lack of targeted training or institutional support, as well as uncertainty about how to effectively integrate AI into specific subject areas.

These findings resonate with previous studies emphasizing the need for structured professional development and institutional readiness in order to bridge the gap between awareness and effective implementation (Al-Farany & Al-Hujaili, 2020; Lunenberg et al., 2023).

In contexts where educational infrastructure is limited, AI has the potential to serve as a cost-effective alternative to traditional tools, such as physical labs or printed materials. Simulation software and content generators, for instance, can provide students with access to interactive learning experiences that would otherwise be unavailable. Teachers who recognize this potential are more likely to adopt AI not only as a novelty but as a strategic solution to pedagogical challenges.

Ultimately, the findings from this study highlight both the promise and the limitations of AI adoption among Arab teachers. While many are enthusiastic and already incorporating AI into their practices, there remains a clear need for expanded training, increased access to diverse tools, and stronger institutional support. These steps are essential for ensuring that the integration of AI in education is both meaningful and sustainable.

Arab teachers' utilization of artificial intelligence (AI) tools in education, as reflected in the Unified Theory of Acceptance and Use of Technology (UTAUT)

The analysis of Arab teachers' perceptions toward the use of artificial intelligence (AI) tools in education, as interpreted through the UTAUT framework, indicates a generally positive orientation across all five dimensions. Notably, *behavioral intention* received the highest mean score, suggesting a strong willingness among teachers to incorporate AI into their instructional practices. This reflects a growing recognition of the relevance and potential of AI to enhance educational quality and innovation—findings that are consistent with previous research in broader international contexts (Cabero-Almenara et al., 2024; Yim & Wegerif, 2024).

Performance expectancy, the second-highest rated dimension, also reflects a high level of belief among teachers that AI can contribute meaningfully to their work—whether by improving teaching effectiveness, increasing learner engagement, or supporting differentiated instruction. Similar to studies by Zhai (2024) and Eden et al. (2024), these findings underscore

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that when educators perceive AI tools as beneficial and aligned with their pedagogical goals, they are more inclined to adopt them.

Effort expectancy was rated moderately, suggesting that while AI tools are not perceived as overly difficult to use, they still present a learning curve. Many Arab teachers may be motivated to explore AI tools, but their ability to do so effectively depends on their digital literacy and access to training—areas where disparities often exist between majority and minority populations. This finding reflects the broader challenge of digital inequality faced by teachers in under-resourced contexts (Hadad, Watted, & Blau, 2023; Shamir-Inbal et al., 2024).

Social influence, though moderately positive, reveals a more complex picture. In many cases, Arab teachers operate within school systems where institutional leadership and peer collaboration around digital innovation may be limited. The cultural and organizational structures within Arab schools in Israel may not always promote or normalize the use of advanced technologies such as AI. This is in line with research suggesting that social support mechanisms are less effective in environments where professional development and digital discourse are underdeveloped (Yao & Halim, 2023).

The most critical finding concerns facilitating conditions, which received the lowest score. This reflects a broader, structural issue facing Arab educators in Israel: insufficient access to technological infrastructure, professional development, and ongoing technical support (Ganayem, 2018; Hadad, Watted, & Blau, 2023). Arab schools in Israel often contend with chronic underfunding, outdated infrastructure, and limited institutional investment in innovation (Da'as, 2017; Sharabi et al., 2021). These systemic disparities significantly constrain teachers' ability to translate their motivation and positive attitudes into concrete implementation.

In sum, the findings suggest that Arab teachers are motivated, forward-looking, and aware of the pedagogical value of AI tools. However, their ability to meaningfully integrate these tools is hindered by systemic inequities. Addressing these barriers requires a commitment to inclusive educational policies, targeted funding, and culturally responsive professional development programs that empower teachers in minority communities to fully participate in the digital transformation of education.

The key predictors of Arab teachers' behavioral intention to use AI tools in teaching

The findings of this study reinforce the central role of performance expectancy as a significant predictor of Arab teachers' behavioral intention to use AI tools in teaching. This observation aligns with a growing body of literature suggesting that when teachers perceive AI technologies as effective in enhancing instructional quality and student learning, their motivation to adopt such tools increases (Ballenas & Lasco 2024; Zhang, & Wareewanich, 2024). The assertion that performance expectancy drives intention is well supported. For instance, Ballenas and

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Lasco (2024) found a strong positive correlation between performance expectancy and behavioral intention among mathematics teachers, highlighting that perceived improvement in teaching performance was a key driver of AI acceptance. Similarly, in a study conducted in Jiangsu Province, preschool teachers reported that their willingness to adopt generative AI was significantly influenced by their expectations of its positive impact on teaching (Zhang & Wareewanich, 2024). These findings suggest that across educational levels and contexts, the belief in AI's instructional value is a consistent and robust motivator for integration.

The current study also underscores the importance of facilitating conditions—another construct within the UTAUT model—which refer to the perceived availability of institutional support, infrastructure, and professional resources. Arab teachers reported limited facilitating conditions, which reflects their broader reality as educators working within a minority educational system in Israel. Structural disparities in funding, access to technology, and institutional investment often constrain innovation in Arab schools. This aligns with previous research showing that facilitating conditions significantly influence teachers' readiness to adopt AI. For example, Ballenas and Lasco (2024) found that access to supportive environments positively predicted behavioral intention among mathematics teachers, and similar findings were reported among university educators, where institutional backing correlated with increased AI acceptance (Cabero-Almenara et al., 2024).

Conclusions and Implications

This study provides valuable insight into Arab teachers' perceptions and behavioral intentions regarding the integration of artificial intelligence (AI) tools in education, applying the UTAUT model as a theoretical framework. The findings indicate that teachers express a generally positive attitude toward AI, driven primarily by their belief in its potential to enhance teaching and learning. While teachers demonstrated readiness to adopt AI, their ability to implement it effectively was closely tied to the availability of supportive conditions such as infrastructure, training, and institutional backing. These enabling factors were particularly significant given the unique challenges faced by Arab teachers in Israel, who operate within an under-resourced minority education system. The limited impact of effort expectancy and social influence suggests that motivation to use AI is less dependent on ease of use or peer encouragement, and more closely linked to perceived value and access to essential resources.

The implications of these findings highlight the importance of addressing structural inequalities in educational technology access. To support meaningful and equitable AI integration, there is a need for targeted investment in technological infrastructure, culturally relevant professional development, and school environments that encourage innovation and collaboration. Future research should further investigate how contextual variables shape AI adoption over time, particularly in minority settings. Qualitative studies could enrich our understanding of teachers'

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experiences with AI, while comparative and student-centered research may offer additional insights into the broader impact of these technologies on teaching and learning.

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