Perception and Attitudes towards AI (ChatGPT) in Education: A Focus on TESL Students in Perak

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ARTICLE INFO	ABSTRACT
	In this study, we examine how TESL (Teaching English as a Second Language) students think and feel about an AI-based educational tool called ChatGPT. Based on the extant literature drawing from Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT), this study utilized a systematic review to integrate research studies within both global and local contexts with respect AI in education. The results highlight elements including perceived usefulness, Ease of use, facilitating conditions, Social influences and cultural context that affect TESL students' acceptance of AI. The study offers suggestions for educators and legislators, shedding light on the possible advantages and difficulties of incorporating AI into TESL curricula.

1. Introduction

The rapid advancements in artificial intelligence (AI) and machine learning have transformed many industries, including education [4,12,16]. One of the recent innovations in this area is ChatGPT, a large language model developed by OpenAI. ChatGPT has generated considerable interest among educators and students for its potential to assist in language learning and teaching, especially among Teaching English as a Second Language (TESL) students. Many researchers have explored AI applications in educational contexts [9], yet there remains limited research specifically on the use and acceptance of ChatGPT among TESL students in Malaysia.

Research on technology acceptance often applies theoretical frameworks such as the Technology Acceptance Model (TAM) [5] and the Unified Theory of Acceptance and Use of Technology (UTAUT) [13]. These models propose that factors like perceived usefulness and perceived ease of use significantly influence users' acceptance of new technologies. For instance, Park *et al.,* [17] emphasized that students' attitudes toward technology play a critical role in the success of technology-enhanced learning. Therefore, understanding TESL students' perceptions, attitudes, and

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acceptance of ChatGPT is essential for educators and policymakers aiming to integrate AI tools into Malaysian TESL curricula effectively.

Previous studies on language learning technologies have shown that AI-based tools can enhance the learning experience by providing immediate feedback, personalized assistance, and diverse learning materials [18-20]. However, it remains unclear to what extent TESL students are ready to adopt AI-driven tools like ChatGPT in their educational journey [6]. This study aims to fill this gap by investigating TESL students' perceptions, acceptance, and potential barriers to using ChatGPT in Malaysian educational institutions.

This study is significant for two reasons. First, it provides insights into TESL students' readiness to adopt AI technologies, which may inform educators and curriculum designers. Second, the findings contribute to the broader discourse on AI acceptance in education, particularly in non-native English-speaking regions where TESL education is critical. Therefore, the objectives of this study are: To identify factors influencing TESL students' acceptance of ChatGPT [9] and to assess the perceived impact of ChatGPT on TESL learning outcomes [11].

1.1 Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) The TAM developed by David, 1989 which states that an individual's psychological state and predicts technology acceptance aimed at perceived usefulness are enabled as usability-centered variables. It has been applied to a wide range of educational technologies and studies reported the model is capable enough in predicting user acceptance. Consequently, it is evident that a user's attitude toward the system is crucial, as it determines whether the user will indeed utilize the system or abstain from doing so [14]. Widely cited in the field of technology acceptance, TAM has garnered substantial empirical support over the decades.

1.2 Unified Theory of Acceptance and Use of Technology (UTAUT)

UTAUT developed by previous study [10] has extended the TAM with constructs of social influence and facilitating conditions. The model is a well-structured base of information about adopting technology, which relates through different circumstances and domains such as learning education.

Over the years, researchers and scholars have been interested in understanding the factors that influence individuals' acceptance of technology. This interest has led to the development of various models and theories. Earlier models, such as the Technology Acceptance Model (TAM), focused on key constructs like perceived usefulness and perceived 82 eases of use. These models paved the way for a deeper understanding of user behaviour towards technology. The Unified Theory of Acceptance and Use of Technology (UTAUT) is a comprehensive model that consolidates and builds upon the strengths of earlier models. It was developed to provide a more complete explanation of why individuals accept or reject technology [5]. UTAUT incorporates key factors such as performance expectancy, effort expectancy, social influence, and facilitating conditions. These factors contribute to users' behavioural intentions and actual use of technology.

1.3 The Public View of Artificial Intelligence: In Education
1.3.1 Global perspectives

Research on worldwide perceptions of AI in Education Some students value the tailored learning experience and instant feedback of AI tools, whereas others are skeptical about the reliability or

privacy issues; there is even evidence that human social factors contribute to furthering confusion [7].

1.3.2 Local perspectives

A study conducted on Malaysian students showed a generally good attitude towards educational technologies, which included AI. Yet, technology infrastructure deficient, cultural educational perspectives and language function in English [11] influence those perceptions. The study will then examine those determinants which influence the acceptance of AI technology in TESL.

1.4 Factors Influencing AI Acceptance in TESL
1.4.1 Perceived usefulness

Perceived Usefulness The value that TESL students place upon how ChatGPT can add to their language learning experience is very important. Studies indicated that perceived usefulness is a significant factor when adopting technology [8].

1.4.2 Perceived ease of use

Ease of Interaction: The easier ChatGPT is to use, the more likely it will be used as a tool by students. By making the interface user friendly and functionalities more intuitive, acceptance can be largely increased [20].

1.4.3 Social influence

Social Influence in the context of AI language learning tools refers to the impact of social factors on individuals' attitudes and intentions towards using these technologies [2]. It encompasses various aspects, including peer discussion, tutor/lecturer recommendations and online communities [3].

1.4.4 Facilitating conditions

Facilitating conditions refer to the factors that support and enable individuals to effectively use technology, particularly in educational contexts. In the realm of AI language learning tools, these conditions can significantly impact teachers' and students' intentions to adopt and continue using such technologies [19].

1.4.5 Cultural and educational context

Cultural, Educational Context in Malaysia cultural attitudes towards technology and the educational environment contribute in shaping students' perceptions. Similarly, respect for teachers and traditional learning practices can influence the adoption of AI tools [1].

While numerous studies have explored AI tools in educational contexts globally, there is a lack of research focusing specifically on the acceptance and integration of AI-driven tools like ChatGPT among TESL students in Malaysia. Particularly, no comprehensive investigation has considered the cultural and educational nuances unique to this region [21-24].

2. Methodology

This study employed a quantitative survey-based research design to examine TESL students' acceptance of ChatGPT in Malaysia. The survey instrument was developed based on the TAM and UTAUT models, which offer a comprehensive framework for assessing users' attitudes and behavioural intentions regarding new technologies.

2.1 Participants

The target population for this study consisted of TESL students enrolled in Malaysian universities and teacher training institutes. A total of 50 students were sampled using a stratified sampling approach to ensure representation across different institutions.

2.2 Survey Instrument

The survey instrument was developed as an online questionnaire distributed through institutional channels. The questions were designed to capture data on demographic information, awareness and usage of AI tools, perceived usefulness, perceived ease of use, social influence, facilitating conditions, Cultural and Educational Context and Overall Attitude and Acceptance. Each question utilized a 5-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree.".

2.3 Data Collection

Data were collected over a period of three weeks, with reminders sent weekly to encourage participation. All responses were anonymized to maintain confidentiality, and participants were informed about the purpose of the study and their rights as research subjects.

2.4 Data Analysis

The collected data were analysed using statistical software (e.g., SPSS). Descriptive statistics were used to summarize demographic information, while inferential statistics, including correlation and regression and reliability analyses, were conducted to examine the relationships between variables such as perceived usefulness and acceptance of ChatGPT.

3. Result

3.1 Demographic Characteristic

The sample consisted of 50 TESL students, with 52% aged between 18 and 21 and 42% between 22 and 27. The sample was evenly split between males (50%) and females (50%). This demographic information in Table 1, suggests that our findings may be more applicable to younger TESL students. This even gender distribution and the focus on younger age groups align with the typical demographic of TESL programs, potentially enhancing the relevance of findings for this cohort

Table 1
Demographic information of participants

		Count	Column N %
Age	18-21	26	52.0%
	22-27	21	42.0%
	28-30	3	6.0%
Gender	Male	25	50.0%
	Female	25	50.0%

The results in the Table 2, indicate that a significant majority of respondents (92%) are familiar with ChatGPT, a popular AI language learning tool. This suggests that AI language learning tools are becoming increasingly well-known among students

Table 2
Frequency distribution of respondents' familiarity with AI language learning tools

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	46	92.0	92.0	92.0
No	4	8.0	8.0	100.0
Total	50	100.0	100.0	

The results in Table 3 below, indicate that AI tools like ChatGPT are being used with varying frequency by students for study purposes. While a significant proportion (42%) use them on a weekly basis, a smaller but still substantial group (22%) use them daily. This suggests that AI tools are becoming increasingly integrated into students' study habits

Table 3
Frequency of chatgpt usage for study purposes

	Frequency	Percent	Valid Percent	Cumulative Percent
Daily	11	22.0	22.0	22.0
Weekly	21	42.0	42.0	64.0
Monthly	12	24.0	24.0	88.0
Rarely	6	12.0	12.0	100.0
Total	50	100.0	100.0	

The high familiarity and frequent usage of ChatGPT (Table 2 and Table 3) address the second objective by demonstrating its perceived impact on TESL learning outcomes.

3.2 Reliability Test

The internal consistency reliability of the scale was assessed using Cronbach's alpha as shown in the Table 4 below. The Cronbach's alpha coefficient was found to be .903, indicating excellent internal consistency among the 14 items. This suggests that the scale is reliable and measures a consistent construct. The high Cronbach's alpha (.903) indicates that the survey instrument is reliable, enhancing confidence in the data's validity.

Table 4

Cronbach Alpha for Internal Consistency

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.903	0.908	14

3.3 Descriptive Analysis

The results shown in Table 5 indicate that participants had a positive overall perception of the technology. The mean scores for all constructs were above 3, suggesting a favourable attitude towards the technology. The standard deviations were relatively low, indicating that the responses were relatively homogeneous. The skewness values were generally negative, suggesting a slight left skew in the distribution of responses, with most participants providing positive ratings

Table 5

Descriptive Statistics of the UTAUT Constructs

	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Perceived Usefulness	4.05	1.028	-1.168	0.337	1.36	0.662
Perceived Ease of Use	4.09	0.946	-0.857	0.337	0.154	0.662
Social Influence	3.91	1.178	-0.776	0.337	0.323	0.662
Facilitating Conditions	3.63	1.010	-0.333	0.337	-0.446	0.662
Cultural and Educational Context	3.92	1.078	-1.056	0.337	0.971	0.662
Overall Attitude and Acceptance	4.02	0.821	0.002	0.337	-0.769	0.662

The negative skewness observed in most constructs suggests a strong inclination towards positive perceptions of AI tools, highlighting students' openness to adopting such technologies in their learning processes.

3.4 Multiple Regression Analysis

Based on the analysis in Table 6 and Table 7 below, the regression model is statistically significant, $F(5, 44) = 2.615$, $p = .037$. This indicates that the independent variables, collectively, explain a significant portion of the variance in the dependent variable, Attitude and Acceptance. The R-squared value of .229 suggests that approximately 22.9% of the variance in Attitude and Acceptance is accounted for by the model.

Table 6

Modal Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.479[a]	0.229	0.141	0.52981

a. Predictors: (Constant), CaEC, SI, PU, FC, PEoU

Examining the coefficients in Table 8 below, it identifies the significant predictors of Attitude and Acceptance. Cultural and Educational Context (CaEC) emerged as a significant negative predictor ($β = -.349$, $p = .069$). This suggests that as Cultural and Educational Context increases, Attitude and Acceptance tends to decrease. The other independent variables, Perceived Usefulness (PU), Perceived Ease of Use (PEoU), Social Influence (SI), and Facilitating Conditions (FC), were not found

to be statistically significant predictors of Attitude and Acceptance. The regression analysis identifies Cultural and Educational Context as a significant factor influencing attitudes.

Table 7
Anova Analysis

Modal		Sum of Square	df	Mean Square	F	Sig.
1	Regression	3.669	5	0.734	2.615	.037[b]
	Residual	12.351	44	0.281		
	Total	16.020	49			

a. Dependent Variable: Attitude Acceptance
b. Predictors: (Constant), CaEC, SI, PU, FC, PEoU

Table 8
Individual Predictor effects

Model		Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B	
							Lower Bound	Upper Bound
1	(Constant)	1.853	0.418		4.431	0.000	1.010	2.696
	PU	0.175	0.142	0.296	1.232	0.224	-0.111	0.461
	PEoU	0.122	0.166	0.175	0.734	0.467	-0.212	0.456
	SI	0.081	0.095	0.138	0.857	0.396	-0.110	0.273
	FC	0.092	0.118	0.151	0.778	0.441	-0.146	0.330
	CaEC	-0.217	0.117	-0.349	-1.865	0.069	-0.452	0.018

In conclusion, the findings suggest that Cultural and Educational Context is the primary factor influencing Attitude and Acceptance among the studied variables [15]. The negative relationship suggests that cultural and educational mismatches may hinder students' acceptance of AI tools, warranting further investigation into localized adaptations of these technologies. The findings address the first objective by identifying Cultural and Educational Context as a critical factor influencing acceptance. The second objective is also addressed through the positive perception and usage patterns observed in descriptive analyses The model, while statistically significant, explains a relatively modest proportion of the variance in the dependent variable. Future research may consider exploring additional factors or refining the measurement of the variables to enhance the model's predictive power.

Table 9
Summarized findings

Objectives	Key Findings
Identify factors influencing acceptance	Cultural and Educational Context negatively impacts attitudes.
Assess perceived impact on outcomes	Positive perceptions and frequent usage indicate a strong perceived impact.

4. Conclusion

This study aimed to investigate the factors influencing TESL students' attitudes and acceptance of AI language learning tools. The findings revealed that a significant majority of the respondents were familiar with AI tools like ChatGPT and utilized them for study purposes. However, the frequency of usage varied, with a substantial portion using them weekly or even daily.

The regression analysis indicated that the model was statistically significant, suggesting that the independent variables collectively contribute to the prediction of attitudes and acceptance. Among the variables, Cultural and Educational Context emerged as a significant negative predictor. This implies that a higher alignment between the technology and the cultural and educational context may lead to a more negative attitude towards AI language learning tools.

It is important to note that the model explained a relatively modest proportion of the variance in attitudes and acceptance. This suggests that other factors not included in the study may also influence students' perceptions. Future research may consider exploring additional variables such as perceived risk, self-efficacy, and prior experience with technology to gain a more comprehensive understanding of the factors influencing attitudes and acceptance.

Furthermore, longitudinal studies could be conducted to track changes in attitudes and behaviours over time as AI language learning tools continue to evolve. By identifying the key factors influencing attitudes and acceptance, educators and developers can tailor their interventions to promote positive perceptions and encourage the effective use of AI tools in language learning. Table 9 shows the objectives and key findings of this research. The study identified Cultural and Educational Context as a key factor influencing TESL students' acceptance of ChatGPT, directly addressing Objective 1. Furthermore, the descriptive statistics showing positive perceptions and high frequency of usage align with Objective 2, suggesting that ChatGPT has a substantial perceived impact on TESL learning outcomes.

This study provides valuable insights into TESL students' attitudes towards ChatGPT and highlights areas for improving its adoption. The negative influence of Cultural and Educational Context suggests the importance of tailoring AI tools to better align with students' cultural and educational needs.

5. Future Directions

Given students' high familiarity and positive perceptions of ChatGPT, curriculum designers could consider incorporating AI tools into TESL lesson plans, focusing on activities that leverage ChatGPT for grammar correction, writing practice, or conversational skills. Educators should aim to align AI tool features with local cultural and educational contexts. For instance, incorporating culturally relevant content or offering tutorials tailored to students' educational backgrounds may enhance acceptance. Professional development workshops could be designed to familiarize TESL educators with the capabilities and limitations of AI tools, enabling them to effectively integrate these technologies into their teaching practices. Policymakers should consider supporting the development and deployment of localized AI tools for TESL education, ensuring that they are accessible and culturally appropriate. Future studies could investigate variables such as self-efficacy, perceived risks, or prior technological exposure. Expanding the sample to include TESL educators or students from different educational levels could also yield richer insights. Future research should aim to include a larger and more diverse sample size, incorporating TESL educators and students from various regions and educational levels. Such inclusivity will enhance the generalizability of findings and provide a broader perspective on AI acceptance. To complement the quantitative findings, qualitative approaches such as interviews or focus groups can provide richer insights into students' perceptions and attitudes. This will allow a nuanced understanding of cultural and educational factors influencing acceptance. These steps will significantly enhance our understanding of AI acceptance in TESL education.

References

[1] Mohd Adnan, Airil Haimi, Mohamad Syafiq Ya Shak, Rafidah Abd Karim, Mohd Haniff Mohd Tahir, and Dianna Suzieanna Mohamad Shah. "360-degree videos, VR experiences and the application of Education 4.0 technologies in Malaysia for exposure and immersion." *Advances in Science, Technology and Engineering Systems Journal* 5, no. 1 (2020): 373-381.

[2] Amanat, Asma, Ashiq Hussain, and Muhammad Usman Tariq. "Major Influencing Factors in the Learning of Saraiki, Punjabi, Urdu, and English Languages in the Punjab, Pakistan." *Pakistan Journal of Social Research* 3, no. 4 (2021): 630-640. https://doi.org/10.52567/pjsr.v3i4.323

[3] Bashiri, Masoud, and Kamran Kowsari. "Transformative influence of llm and ai tools in student social media engagement: Analyzing personalization, communication efficiency, and collaborative learning." *arXiv preprint arXiv:2407.15012* (2024).

[4] Meniado, Joel C. "The Impact of ChatGPT on English Language Teaching, Learning, and Assessment: A Rapid Review of Literature." *Arab World English Journal* 14, no. 4 (2023). https://doi.org/10.24093/awej/vol14no4.1

[5] Dwivedi, Yogesh K., Nripendra P. Rana, Anand Jeyaraj, Marc Clement, and Michael D. Williams. "Re-examining the unified theory of acceptance and use of technology (UTAUT): Towards a revised theoretical model." *Information systems frontiers* 21 (2019): 719-734. https://doi.org/10.1007/s10796-017-9774-y

[6] Godwin-Jones, Robert. "Evolving technologies for language learning." (2021).

[7] Graf-Vlachy, Lorenz, Katharina Buhtz, and Andreas König. "Social influence in technology adoption: taking stock and moving forward*." Management Review Quarterly* 68 (2018): 37-76. https://doi.org/10.1007/s11301-017-0133-3

[8] Haleem, Abid, Mohd Javaid, and Ravi Pratap Singh. "An era of ChatGPT as a significant futuristic support tool: A study on features, abilities, and challenges." *BenchCouncil transactions on benchmarks, standards and evaluations* 2, no. 4 (2022): 100089. https://doi.org/10.1016/j.tbench.2023.100089

[9] Hummel, Dietrich J. "The international vortex flow experiment 2 (VFE-2): background, objectives and organization." *Aerospace science and technology* 24, no. 1 (2013): 1-9. https://doi.org/10.1016/j.ast.2012.08.008

[10] Karthikeyan, V., G. Kirubakaran, R. Varun Prakash, and Y. Palin Visu. "Trends and Research Potential with the Use of ChatGPT and Other AI Tools: Application and Challenges of Generative AI Tools." In *Applications, Challenges, and the Future of ChatGPT*, pp. 30-55. IGI Global, 2024. https://doi.org/10.4018/979-8-3693-6824-4.ch002

[11] Kohnke, Lucas, Benjamin Luke Moorhouse, and Di Zou. "ChatGPT for language teaching and learning." *Relc Journal* 54, no. 2 (2023): 537-550. https://doi.org/10.1177/00336882231162868

[12] Lo, Chung Kwan, Philip Leung Ho Yu, Simin Xu, Davy Tsz Kit Ng, and Morris Siu-yung Jong. "Exploring the application of ChatGPT in ESL/EFL education and related research issues: a systematic review of empirical studies." *Smart Learning Environments* 11, no. 1 (2024): 50. https://doi.org/10.1186/s40561-024-00342-5

[13] Mat, Shabudin Bin, Richard Green, Roderick Galbraith, and Frank Coton. "The effect of edge profile on delta wing flow." *Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering* 230, no. 7 (2016): 1252-1262. https://doi.org/10.1177/0954410015606939

[14] Murillo, Gabriel Garcia, Pavel Novoa-Hernández, and Rocio Serrano Rodriguez. "Technology Acceptance Model and Moodle: A systematic mapping study." *Information Development* 37, no. 4 (2021): 617-632. https://doi.org/10.1177/0266666920959367

[15] Nizar, Nur Nabihah Mohamad, Hutkemri Zulnaidi, Annisaa Basar, and Siti Zuraida Maaruf. "A Structural Model of Pre-Service Teachers' Attitude, Acceptance, and Continuance Intention towards Mobile Augmented Reality." *Contemporary Educational Technology* 16, no. 4 (2024). https://doi.org/10.30935/cedtech/15160

[16] Pang, Samarnh, Engheang Nol, and Kimkong Heng. "ChatGPT-4o for English language teaching and learning: Features, applications, and future prospects." *Available at SSRN 4837988* (2024). https://doi.org/10.2139/ssrn.4837988

[17] Park, Ierei, Donggeun Kim, Jungwook Moon, Seoyong Kim, Youngcheoul Kang, and Sangseok Bae. "Searching for new technology acceptance model under social context: analyzing the determinants of acceptance of intelligent information technology in digital transformation and implications for the requisites of digital sustainability." *Sustainability* 14, no. 1 (2022): 579. https://doi.org/10.3390/su14010579

[18] Sharma, Yash, et al. "AI Chatbot Using Machine Learning." *International Journal for Research in Applied Science and Engineering Technology* 12, no. 1 (2024): 1500–1503. https://doi.org/10.22214/ijraset.2024.57932

[19] Siek, Michael, and Ivana Wijaya. "Investigating Cloud-Based Educational Technology Adoption in Advancing Learning Performance." In *2022 4th International Conference on Cybernetics and Intelligent System (ICORIS)*, pp. 1-8. IEEE, 2022. https://doi.org/10.1109/ICORIS56080.2022.10031577

[20] Tiwari, Chandan Kumar, Mohd Abass Bhat, Shagufta Tariq Khan, Rajaswaminathan Subramaniam, and Mohammad Atif Irshad Khan. "What drives students toward ChatGPT? An investigation of the factors influencing adoption and

usage of ChatGPT." *Interactive Technology and Smart Education* 21, no. 3 (2024): 333-355. https://doi.org/10.1108/ITSE-04-2023-0061

[21] Venkatesh, Viswanath, Michael G. Morris, Gordon B. Davis, and Fred D. Davis. "User acceptance of information technology: Toward a unified view." *MIS quarterly* (2003): 425-478. https://doi.org/10.2307/30036540

[22] Xu, Tianyuan, and Huang Wang. "The effectiveness of artificial intelligence on English language learning achievement." *System* 125 (2024): 103428. https://doi.org/10.1016/j.system.2024.103428

[23] Liang, Yihe. "Balancing: the effects of AI tools in educational context." *Frontiers in Humanities and Social Sciences* 3, no. 8 (2023): 7-10. https://doi.org/10.54691/fhss.v3i8.5531

[24] Luo, Tian, Pauline S. Muljana, Xinyue Ren, and Dara Young. "Exploring instructional designers' utilization and perspectives on generative AI tools: A mixed methods study." *Educational technology research and development* (2024): 1-26. https://doi.org/10.1007/s11423-024-10437-y