

Integrating Chatgpt Voice Chat As “Virtual Guest” In Enhancing Communication Skill Using Technology Acceptance Model (TAM): A Preliminary Study

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ABSTRACT

This preliminary study explores the integration of ChatGPT Voice Chat as a “Virtual Guest” to enhance communication skills among hospitality students, using the Technology Acceptance Model (TAM) as a guiding framework. The objective was to address skill gaps in communication, critical thinking, and problem-solving within hospitality education by implementing AI-driven simulation in a Front Office module. Using the design thinking process, two emotionally varied guest scenarios were developed and tested with 17 students. Quantitative data were analyzed using Spearman’s correlation, while qualitative insights were gathered through open-ended reflections. Findings revealed very strong, significant correlations between Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and communication skill enhancement. Thematic analysis further confirmed gains in confidence, clarity, empathy, and real-world readiness. This study provides novel evidence that AI-based voice simulations can meaningfully enhance soft skills training and support the relevance of TAM in evaluating educational technology adoption. The approach offers a scalable, interactive, and emotionally engaging alternative to traditional role-play, potentially transforming how communication skills are taught in hospitality education.

1.0

Introduction

The hospitality industry increasingly demands well-developed soft skills, particularly effective communication, critical thinking, and adept problem-solving abilities, as essential components of professional competence (Baum, 2019; Dede & Richards, 2020). Community colleges, as integral educational institutions, offered TVET courses and are tasked with equipping students with these essential skills to ensure they are industry-ready upon graduation (Hora et al., 2020). However, traditional pedagogical approaches in hospitality education often

inadequately address the practical and dynamic nature of industry requirements, resulting in skill gaps among graduates (Chidebe et al., 2023), particularly in community colleges. ChatGPT Voice Chat act, as the natural language processing tool from the integration of artificial intelligence (AI), represents a novel instructional approach aimed at addressing these educational challenges. Studies from Brown et al. (2020) and Huang and Rust (2018) indicate AI-driven technologies can significantly enhance student engagement, learning efficiency, and practical skill application through immersive and interactive learning environments. Therefore, this study aims to bridge this research gap by investigating the potential of ChatGPT Voice Chat as “Virtual Guest” integration within a Front Office hospitality module using the design thinking model. Specifically, the study addresses the following research problem: despite the recognized need for enhanced communication, critical thinking, and problem-solving skills among hospitality students (Alexakis & Jiang, 2019), current educational methods have been insufficient in developing these competencies effectively (Eslit, 2023). Hence, this research systematically examines the effectiveness of AI-driven instructional methods in overcoming these pedagogical shortcomings.

2.0 Literature review

2.1 TAM in Hospitality and Tourism Education

In 1989, Davis developed the Technology Acceptance Model (TAM) as the dominant framework. This framework is to understand how individuals adopt and use technological innovations. Two critical constructs in TAM, which are Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) are continuing to shape contemporary research in education and simulation-based learning. In this recent trend with the rise of artificial intelligence (AI) tools like ChatGPT, TAM has also been adapted and emphasized its relevance in higher education and simulation contexts. The Simulation-Based Learning Acceptance Model (SBL-AM) for hospitality education has been introduced by Lefrid et al. (2023). In their study, researchers affirm that computer self-efficacy significantly influences both PU and PEOU, which in turn impact attitudes and behavioral intention to use educational technologies. Moreover, the rapid growth of integrated AI and digital tools into learning in the hospitality field was also validated by researchers using TAM's applicability in this domain. Previous TAM-based studies such as Zuraida et al. (2023) found that while Perceived Ease of Use (PEOU) significantly influenced both Perceived Usefulness (PU) and Behavioural Intention (BI). This suggests that the ease of system usage may play a more dominant role in shaping user behaviour. These findings provide a useful contrast to the current study, where both PU and PEOU were found to significantly influence communication outcomes. From the study by Zhu et al. (2024), researchers looked at how tourism and hospitality students use ChatGPT, and they found that authenticity, perceived usefulness (PU), and perceived ease of use (PEOU) all had a positive effect on students' attitudes and their intention to use AI-driven simulations. Furthermore, these findings also suggest that perceived realism and usability are essential in influencing student engagement. Similarly, Goh and Wen's study (2020), demonstrated that hospitality students' interaction with electronic discussion boards was significantly shaped by their perceptions of usefulness and ease of use. These findings support the argument that well-designed, intuitive platforms promote deeper learning and participation.

2.2 AI Tools Impact on Communication and Soft Skills

Recent literature highlights the potential of ChatGPT in enhancing communication skills in hospitality and tourism education. A study done by Zhang et al. (2024) showed that ChatGPT can improve learning outcomes, educational equity, and efficiency in curriculum design and delivery. Its implementation strategies show promise in preparing students for global business communication challenges (Mustafa et al., 2024). Furthermore, studies have expanded TAM's focus beyond technology usage to examine how AI tools impact learning outcomes, especially soft skills like communication, empathy, and critical thinking. A study conducted by Yu (2018) found that students using simulation software in merchandising improved their critical thinking and communication capabilities. This happens when they perceive the tools as useful and

enjoyable. Zhang and Lyu (2023) showed that EFL learners responded positively to an AI speech evaluation program. With this AI-assisted language learning, it's citing improvements in speaking confidence and fluency when the tool was deemed useful and easy to use.

2.3

Experiential Learning Theory (Kolb, 1984)

A structured framework has been provided from Kolb's Experiential Learning Theory (1984) to enhance students' practical communication skills in hospitality settings through immersive simulations.

- i. During the **Concrete Experience** stage, students will engage directly with ChatGPT voice chat as a "Virtual Guest" that realistically replicates front office interactions, such as handling requests from polite guests seeking early check-ins when rooms are unavailable or managing emotionally charged scenarios involving upset guests due to delays. The authentic voice-based interactions not only mimic real-life situations but also heighten emotional engagement, enabling students to experience genuine workplace challenges firsthand.
- ii. Following these experiences, the **Reflective Observation** phase encourages students to critically assess their performance by examining their professionalism, clarity, empathy, and responsiveness to varying emotional contexts. This reflection is often facilitated through structured journaling, peer discussions, or teacher-led evaluations, highlighting the nuances in managing calm versus emotional interactions.
- iii. Transitioning into **Abstract Conceptualization**, students actively connect their practical experiences to theoretical principles learned in class. They evaluate their effectiveness against established hospitality communication strategies, politeness frameworks, active listening skills, and customer service standards, internalizing theories such as conflict resolution techniques and standard operating procedures (SOPs).
- iv. Finally, the **Active Experimentation** stage prompts students to re-engage with the simulations, implementing improved approaches informed by previous reflections and theoretical insights. They experiment with different communicative strategies, adapt their tone, proactively suggest solutions, and practice conflict de-escalation, ultimately refining their abilities and building greater confidence for future professional interactions. By guiding students through Kolb's experiential cycle, this innovation transforms passive learning into active, reflective, and adaptive skill development. The use of ChatGPT Voice Chat as a "Virtual Guest" does not just simulate front office tasks — it immerses students in complex human interactions, challenges them to think critically, and prepares them for real-world guest service through repeated, feedback-rich cycles of experience. Figure 1.1 shows the experiential learning cycle.

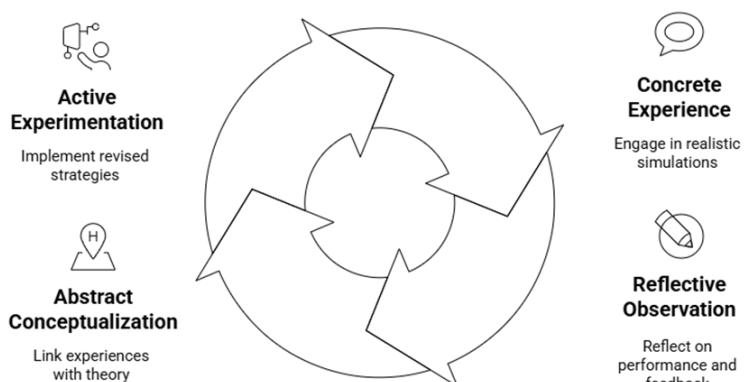


Figure 1.1: Experiential learning cycle

Methodology

This study was guided through the five stages of the Design Thinking process (Müller-Roterberg, 2018) to develop the prompt and scenarios in ChatGPT Voice Chat as “Virtual Guest”. In the first phase - Empathize, researchers began to identify the real-world challenges that the students faced in doing front office practical. These challenges particularly focus on communication, problem-solving, and critical thinking when dealing with unpredictable guest behavior. Furthermore, researchers observed that traditional role-plays (students do with students) were often too scripted and failed to simulate the emotional dynamics of real hospitality settings because they only doing the surface of role-play without touching the critical and problem-solving elements.

Next is the Define stage; researchers clarified that the core issue faced by students was that they were not adequately exposed to dynamic and emotionally charged guest interactions that would truly test their communication, and problem-solving abilities. With this issue, it's helped to frame the objective which is to design an instructional solution that would replicate the complexity and unpredictability of real front office encounters when students are doing their role-playing.

During the Ideate phase, researchers explored various possibilities such as using guest speakers or static videos. However, these options lacked interactivity. Researchers then generated the idea of using ChatGPT Voice Chat, where students could engage in live, responsive conversations with AI playing the role of a guest; either calm or angry, allowing for a rich, varied practice environment.

In the Prototype stage, researchers developed two distinct scenarios. In the first, the guest arrives early with a reservation but is calm despite the room not being ready. In the second, the guest becomes emotional and angry over the same issue. Researchers programmed ChatGPT with these role-specific instructions, enabling it to simulate realistic and emotionally varied guest responses.

Finally, in the test phase, researchers implemented these scenarios with students who enrolled in the Front Office subject at Polytechnic of Tuanku Syed Sirajuddin. The total number of students involved in the study is 17. Researchers observed significant differences in how students handled each situation, especially under emotional pressure. The interaction demanded real-time thinking, empathy, and clear communication; offering students a meaningful, reflective learning experience. This stage also allowed researchers to assess their readiness for real-world front office challenges and refine the innovation further based on their performance and feedback. The questionnaire as an instrument was adopted and modified from previous studies by Davis (1989) (Perceived usefulness and Perceived Ease of Use) and Rees et al. (2002) (Communication skills). An open-ended question also has been asked to the students regarding “in what ways did the FrontDesk AI session impact your communication skills?” Figure 1.2 shows the design thinking process for this study.

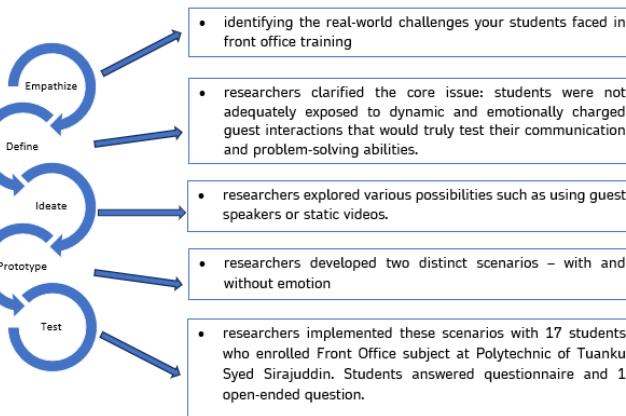


Figure 1.2: Design thinking process

Here are examples of instructions in scenarios 1 and 2 that have been given to ChatGPT to interact with users. Instructions in scenario 1 are situations where guests come to check in with a reservation and request early check-in, but the room is not yet ready, and *the Front Office Assistant* needs to resolve the issue (Figure 1.3). Whereas instructions in scenario 2 are situations where guests come to check in with a reservation and ask for early check-in, but the room is still not ready, and the guest starts to go berserk with emotion at the front office counter, and *the Front Office Assistant* must solve the problem (Figure 1.4). Here, the response from ChatGPT as a guest is not the same compared to scenarios 1 and 2. In such situations, students need to be prepared with knowledge and communication skills as well as high problem-solving skills to solve the problem. Figure 1.5 shows the voice chat display from ChatGPT on the phone version.

Arahan ChatGPT:

I will use ChatGPT to simulate various guest interactions such as check-ins, check-outs, handling complaints, and special requests. Students can practice their responses and receive instant feedback from you (ChatGPT). I will provide the hotel information, scenarios, and instructions for you to act as guest to response with students act as Front Office Assistant.

Upload room information pdf

Hotel Information:

RoseQ Boutique Hotel is a boutique hotel located in Lengkok Cempaka, Sungai Petani, Kedah. This hotel has a total of 44 rooms which are Standard Room (10 rooms); Deluxe Room (10 rooms); Studios (10 rooms); Superior Family (10 rooms); Executive (2 rooms); and Presidential Suite (2 rooms). The hotel also has facilities such as a swimming pool; Children Playground; Business centre; Game Center and Restaurant/ Coffee House.

Scenario: The situation is where the guest requested early check in (early book) but of course subject to availability. This guest name Grace is from Singapore. During the high peak of checking out... the guest came and wanted to check in. she arrived at 8.30 am. The housekeeping will only start their work at 9am... And hotel is fully booked the day before. The guest was dissatisfied and said that she asked early to check in and should the room be ready for her.... Kind of noisy at counter and you are busy checking out other guests.

Instruction: You will act as the guest according to the above scenarios and complete the dialogues with Front Office Assistant. If you understand reply yes. Front Office Assistant will start the conversation first. Then you continue. The conversation will be conducted in English. Please reply using English language.

ChatGPT

Yes.

Conversation starts:

FOA

Good morning, welcome to RoseQ Boutique Hotel. I'm Quah, how may I assist you?

ChatGPT

Good morning, Quah. My name is Grace, and I have a reservation. I requested an early check-in, and I was hoping my room would be ready. I arrived at 8:30 am, but it seems there is a problem. I don't understand why the room isn't prepared yet since I asked in advance.

FOA

Good morning, Madam. I understand you are upset and I apologize for any inconvenience this has caused you. I can assure you that it is not yet time to check in as the room is not ready for early check-in. We will do our best to accommodate early check-in, but it is subjective to room availability and readiness. So while we prepare the room for you, may I suggest you relax in our lounge area? We can offer you complimentary coffee or tea. I can also store your luggage securely so you can explore the located area using our facility.

ChatGPT

I understand the situation, Quah, but I specifically requested an early check-in well in advance. It's quite frustrating to arrive here and not have the room ready. I have plans today and need to freshen up. Is there really no way to expedite this?

FOA

I will prioritize ensure the housekeeping prioritizes your room as soon as possible. They start at 8 am and I will keep you updated the progress and aim to have you check in as soon as possible. As an apology for the wait, I like to offer you a complimentary breakfast voucher or a discount on your room rate for today.

ChatGPT

Thank you, Quah. I appreciate your effort to prioritize my room. A complimentary breakfast would be nice. I hope the room will be ready soon.

FOA

Thank you for your patience, Madam. I will be here to assist you and I will update you as soon as possible when your room is ready. If there is anything else I can do to make you wait more comfortable, please let me know.

ChatGPT

Thank you, Quah. I'll wait here for your update. I'll let you know if I need anything else in the meantime.

FOA

Okay, thank you.

ChatGPT

You're welcome.

Figure 1.3: Example command in scenario 1 and example dialog from voice chat

Second scenario:

Arahan ChatGPT:

I will use ChatGPT to simulate various guest interactions such as check-ins, check-outs, handling complaints, and special requests. Students can practice their responses and receive instant feedback from you (ChatGPT). I will provide the hotel information, scenarios, and instructions for you to act as guest to response with students act as Front Office Assistant.

Upload room information pdf

Hotel Information:

RoseQ Boutique Hotel is a boutique hotel located in Lengkok Cempaka, Sungai Petani, Kedah. This hotel has a total of 44 rooms which are Standard Room (10 rooms); Deluxe Room (10 rooms); Studios (10 rooms); Superior Family (10 rooms); Executive (2 rooms); and Presidential Suite (2 rooms). The hotel also has facilities such as a swimming pool; Children Playground; Business centre; Game Center and Restaurant/ Coffee House.

Scenario: The situation is where the guest requested early check in (early book) but of course subject to availability. This guest name Alice is from Australia. During the high peak of checking out... the guest came and wanted to check in. she arrived at 8.30 am. The housekeeping will only start their work at 9am... And hotel is fully booked the day before. The guest was dissatisfied and said that she asked early to check in and should the room be ready for her.... Kind of noisy at counter with anger emotional and you are busy checking out other guests. Instruction: You will act as the guest according to the above scenarios and complete the dialogues with Front Office Assistant. If you understand reply yes. Front Office Assistant will start the conversation first. Then you continue. The conversation will be conducted in English. Please reply using English language.

ChatGPT

Yes, I understand. The Front Office Assistant will start the conversation, and I will respond as the guest, Alice.

FOA

Good morning. Welcome to RoseQ Boutique Hotel. I am Quah. How may I assist you?

ChatGPT

Good morning. I'm Alice, and I requested an early check-in. I arrived here at 8:30 am, but my room isn't ready. I asked for this early check-in in advance. Why isn't my room prepared yet?

I completely understand your frustration. Unfortunately, our housekeeping team starts at 9 a.m. and because we are fully booked last night, rooms are not ready for early check-in. I always try to accommodate early check-in, but it depends on the room availability and readiness.

ChatGPT

But I specifically asked for early check-in when I made my booking! I traveled all the way from Australia, and I'm really tired. There should be some way to get my room ready. Can you do something about it?

FOA

I truly apologize for this inconvenience. While we prepare your room, may I suggest you relax in our lounge area? We can offer you complimentary coffee or tea if you like. I will also store your luggage securely so that you can explore the located area or use our facility. And I will personally ensure the housekeeping prioritize your room as soon as possible when they start at 9 a.m. And I will keep you updated the progress and aim to have you check in as early as soon as possible.

ChatGPT

I appreciate the offer, but I'm really exhausted and just want to rest. Is there any way you can prioritize my room right now?

FOA

I understand and as an apology for the wait, I will offer you a complimentary breakfast voucher or a discount for your room rate for today.

ChatGPT

Fine, I guess I can wait a bit if I get a discount. But please make sure my room is ready as soon as possible. I really need to rest.

FOA

Okay, I will update you and let you know everything in the meantime.

ChatGPT

Abrill, thank you. I'll be in the lounge area then, waiting for your update.

FOA

Thank you for the patient.

ChatGPT

You're welcome. I'll be waiting for your call.

Figure 1.4: Example of commands in scenario 2 and example of dialogue from voice chat

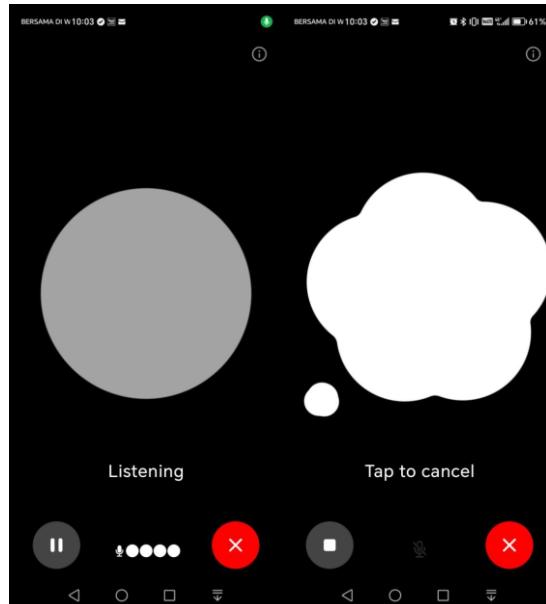


Figure 1.5: Voice chat display from ChatGPT on the phone version

4.0

Discussion of analysis and findings

The demographic analysis of the study sample, consisting of 17 hospitality students, revealed that a slight majority of participants were female (58.8%, n = 10), with males comprising the remainder (41.2%, n = 7). Racial composition indicated that the majority of participants identified as Malay (70.6%, n = 12), followed by Indian participants (23.5%, n = 4) and a small representation from other racial backgrounds (5.9%, n = 1). Age distribution showed that most participants were between 20 and 21 years old (70.6%, n = 12), while those aged 22 to 23 constituted the remaining 29.4% (n = 5). Table 1.1 shows demographic profile.

Table 1.1: Result for each model

Item	Frequency	Percentage (%)
Gender		
Male	7	41.2
Female	10	58.8
Race		
Malay	12	70.6
Indian	4	23.5
Other	1	5.9
Age		
20 and 21 years	12	70.
22 to 23 years	5	29.46

Normality of the data was assessed using the Shapiro-Wilk test due to the small sample size ($n = 17$). The results showed that three variables (Perceived Usefulness, Perceived Ease of Use, and communication skills) were not normally distributed ($p < .05$). As such, Spearman's rank-order correlation was employed for subsequent analyses. A Spearman correlation analysis was conducted to examine the relationships between **Perceived Usefulness (USE)**, **Perceived Ease of Use (PEOU)**, and **Communication Skills (COM)** among students who used the *FrontDesk AI* simulation with ChatGPT Voice Chat as "Virtual Guest". The results indicate a **substantial and significant correlation** between perceived usefulness and communication skills ($rs = 0.828$, $p < .001$). With these findings, it suggests that students who found the ChatGPT Voice Chat as "Virtual Guest" useful and able to improve their communication abilities. In addition, perceived ease of use demonstrated a **very strong positive correlation** with communication skills ($rs = 0.874$, $p < .001$). This evidence shows that students who found the system easy to use were more likely to experience enhanced communication competence. Overall, these findings support the core assumptions of the **Technology Acceptance Model (TAM)**, particularly in explaining how ease of use and perceived usefulness contribute to students' learning outcomes, especially in communication skills. Table 1.2 shows the Spearman correlation analysis.

Table 1.2: Spearman correlation analysis

Item		Perceived Usefulness (USE)	Perceived Ease of Use (PEOU)
Communication Skills (COM)	Correlation	0.828**	0.874**
	Sig. (2-tailed)	.000	.000

**. Correlation is significant at the 0.01 level (2-tailed)

From the thematic analysis, the findings provided further insight into students' experiences. Several themes emerged from the findings which are an **increase in self-confidence**, improvements in **clarity and fluency**, development of **active listening and empathy**, gaining **practical communication experience**, and enhancing **critical thinking and problem-solving skills**.

The most frequently reported theme was an **increase in self-confidence**, with many students' expressing greater assurance when speaking. For example, one respondent stated:

"Yes, made self-confidence" (Respondent 1)

while another noted,

"Yes, AI session helped me ... I feel more confident when talking to others" (Respondent 12).

A similar sentiment was echoed by Respondent 15, who wrote,

“Yes... I be more confident,” indicating a boost in verbal confidence following the simulation.

Students also highlighted improvements in **clarity and fluency**, describing how the simulation helped them express their thoughts more clearly. Respondent 14 shared:

“The FrontDesk AI session helped me improve my communication skills to speak clearly,”

while Respondent 4 reflected, “Helped me communicate more clearly and listen more actively.”

A common theme was the development of **active listening and empathy**. For instance, Respondent 5 stated, “I learned to listen actively and respond thoughtfully ...,” indicating the simulation’s effectiveness in improving soft skills essential for hospitality roles.

Several respondents also mentioned gaining **practical communication experience** applicable to real-world front office scenarios. Respondent 10 noted:

“It gave me new experience... how to handle guest when guest become angry,”

while Respondent 6 remarked, “It is because we can know how to work [on] mental health in real industry work,” emphasizing the realism of the experience.

Furthermore, the simulation was credited with enhancing **critical thinking and problem-solving skills**. For example, Respondent 8 stated:

“Critical thinking, I can make fast decisions and solve guest problems,” demonstrating the system’s capacity to stimulate higher-order thinking.

A few students became more **self-aware of their communication styles**, which allowed them to refine their delivery. As Respondent 16 shared, “The session helped me become more conscious of how I communicate. It encouraged me to speak more clearly and listen actively to the simulated responses.”

Although the feedback was overwhelmingly positive, one student identified a **language-related challenge**, stating, “This AI speaking deep” (Respondent 13), suggesting that the vocabulary used by the AI was sometimes overly complex or difficult to fully understand. These qualitative findings complement the quantitative results and provide a **richer understanding** of how ChatGPT Voice Chat impacts communication skill development among hospitality students.

From the findings of both the Spearman correlation analysis and thematic responses, this study supports the foundational elements of the Technology Acceptance Model (TAM) in the context of AI-based simulation learning, particularly the ChatGPT Voice Chat as “Virtual Guest”. These results contribute to a growing body of literature that emphasizes the impact of perceived usefulness (PU) and perceived ease of use (PEOU) on user satisfaction, behavioral intention, and learning outcomes. The quantitative results revealed very strong and statistically significant correlations between PU, PEOU, and communication skills. This aligns closely with previous research. For instance, a recent study found that PU and PEOU significantly predicted students’ intention to use ChatGPT in hospitality and tourism education (Zhu et al., 2024). Similarly, Lefrid et al. (2023) demonstrated that PEU significantly impacts PU and that both influence user attitude and intention to use simulation-based learning in hospitality education. The significant correlations between PU/PEOU and communication skills suggest that students who perceive the

system as beneficial and easy to use are more likely to develop vital communication competencies. Goh and Wen (2020) observed similar findings with digital learning platforms, where PU and PEOU influenced students' participation and communication engagement in discussion boards. The qualitative data enrich the interpretation of TAM by providing real-world context. Students reported enhanced confidence, clarity, fluency, and empathy—skills critical in hospitality. These findings are consistent with Yu (2018), who found that simulation software in education enhanced both critical thinking and communication in fashion merchandising students. The findings of this study mirror those of Zuraida et al. (2023), where PEOU had a stronger effect on user behavioural intention compared to PU. However, unlike their findings where PU was not significantly correlated with intention to use, our study found both PU and PEOU strongly correlated with communication skill improvement. This indicates that in the context of AI-based voice simulation, the perceived value of the system extends beyond ease of use to meaningful learning outcomes such as clarity, empathy, and real-time decision making.

5.0

Conclusion and Future Research

The integration of ChatGPT Voice Chat into simulation-based learning for hospitality students aligns well with the TAM framework. The very strong relationships between PU, PEOU, and communication outcomes are not only statistically significant but also supported by rich qualitative insights. These findings contribute to a deeper understanding of how AI tools can foster professional soft skills and highlight areas for further improvement in interface design and language accessibility. The findings provide strong empirical support for the Technology Acceptance Model (TAM), particularly its core constructs; perceived usefulness (PU) and perceived ease of use (PEOU) within the context of AI-driven simulations. The very strong correlations among PU, PEOU, and communication skills affirm that user-friendly, purposeful technologies can significantly impact student learning outcomes in hospitality training programs.

The results show that students not only accepted the ChatGPT Voice Chat simulation but also gained tangible improvements in their communication clarity, empathy, confidence, and critical thinking. These findings suggest that AI-based simulations can serve as a powerful pedagogical tool to complement traditional soft-skills training as an essential component in the service and hospitality industry. Educators and curriculum developers should consider integrating AI-based simulations like FrontDesk AI into hospitality programs to provide authentic, real-time communication practice. The reported increase in confidence and practical communication competence suggests that such tools can bridge the gap between theory and real-world application.

Future research should investigate the long-term impact of AI-based communication simulations on students' communication skills. Tracking skill retention and performance over multiple semesters or into internship placements could offer deeper insight into the sustained value of such tools. Since the current study focuses on a specific student population, future studies should explore cross-institutional and cross-cultural comparisons to determine whether similar patterns of acceptance and skill development are observed in different educational or national contexts. Further studies could explore the blended effects of AI simulations with other learning approaches such as role-plays, peer feedback, or instructor-guided reflection to understand how these combinations influence learning outcomes and student satisfaction.

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Author Contributions

W.B. Quah: Conceptualization, Data Curation, Supervision; Methodology, Software, Writing- Original Draft Preparation, Writing-Reviewing and Editing; **A.K. Roseline:** Data Curation, Writing-Reviewing and Editing;

N.H.A. Ismail: Data Curation, Writing-Reviewing and Editing.

Conflicts of Interest

The manuscript has not been published elsewhere and is not being considered by other journals. All authors have approved the review, agree with its Submission and declare no conflict of interest in the manuscript.

6.0

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