

Eternal: English Teaching Journal

Vol. 17, No. 2, pp. a-b, August 2026

<https://doi.org/10.26877/eternal.v17i2.3636>

Received Apr 2, 2026; Revised Aug 4, 2026; Accepted Aug 9, 2026

Implementing Virtual Simulations to Support English Language Learning in EFL Context

^{*1}Erfina Maulidah Khabib, ²Suci Muliana, ³Vilya Lakstian Catra Mulia,
⁴Paulina Deby Putri Indrawati

^{1,2,3,4}Politeknik Assalaam Surakarta, Sukoharjo, Jawa Tengah, Indonesia.

erfinamaulida@gmail.com, sucimuliana2404@gmail.com,

v_lakstian@politeknikassalaam.ac.id, putripaulinadeby@gmail.com

Abstract. This study investigated students' responses toward the implementation of virtual simulations in English language learning within an English as a Foreign Language (EFL) context. The primary objectives were to explore the dimensions of student responses, analyse the factors influencing their engagement, and identify the language components most significantly affected during the simulation process. Adopting a qualitative case study design, the research was conducted with 10 participants at Pasadena Hotel College. Data were collected through classroom observations, semi-structured interviews, documentation, and supplementary questionnaires to ensure comprehensive data triangulation. The data were analysed using qualitative content analysis consisting of data reduction, data display, and conclusion drawing to identify affective, cognitive, and psychomotor response patterns. The virtual simulations included web-based platforms, game-based simulations, and the PRAKTIKA application within hospitality-related learning scenarios. The findings revealed that students demonstrated predominantly positive affective, cognitive, and psychomotor responses toward the use of virtual simulations. The simulations increased students' motivation, confidence, and classroom engagement, while speaking and vocabulary were identified as the language components most significantly enhanced. Furthermore, perceived realism, ease of use, and instructional guidance emerged as the main factors influencing students' responses and engagement throughout the learning process. These findings contribute to the growing literature on technology-enhanced language learning by demonstrating that virtual simulations function as interactive learning environments that support meaningful language learning in vocational EFL contexts and provide practical implications for educators integrating digital technologies into English language instruction.

Keywords: virtual simulation, English language learning, English for hospitality, EFL.

Corresponding author: Erfina Maulida Khabib: erfinamaulida@gmail.com

©Authors

This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (CC BY-NC-SA 4.0).

Introduction

The rapid evolution of technology has fundamentally transformed the landscape of modern education, providing a diverse array of tools designed to heighten student engagement and optimize learning experiences. Among these emerging digital instruments, virtual simulations have gained prominence across various academic disciplines. These simulations create interactive digital environments that allow learners to explore complex processes through visual, dynamic, and hands-on experiences without the constraints of physical laboratory equipment. While traditionally associated with science education, virtual simulations offer significant potential within the domain of English language learning, particularly in English as a Foreign Language context (Lou, 2025). By interacting with simulation-based tasks, students are naturally prompted to utilize English to describe, explain, predict, and reflect upon their observations, thereby fostering meaningful and contextual language acquisition (Marunevich et al., 2021).

Despite these technological advancements, many EFL classrooms continue to rely on traditional, teacher-centred instruction and textbook-based exercises. Such conventional methods frequently result in diminished student motivation and limited classroom participation. Integrating virtual simulations into the curriculum can render English lessons more interactive and visually engaging, which may encourage students to engage more actively in the learning process (Tai & Choi, 2025). However, the efficacy of any pedagogical innovation is contingent upon the students' responses. Positive affective reactions, such as increased interest and enjoyment, can enhance learning outcomes, whereas negative responses may obstruct the effectiveness of the digital tool. (Van Der Meulen & De Vries, 2023).

Currently, research specifically addressing how students respond to virtual simulations in English language learning remains limited. Existing literature often prioritizes high-end technologies like Virtual Reality (VR) or Augmented Reality (AR) that necessitate specialized equipment, leaving a gap in the study of accessible, web-based simulations. Furthermore, previous studies have largely utilized quantitative designs to measure learning outcomes, often overlooking the nuanced affective, behavioural, and cognitive responses of learners within a single-class context. There is also a lack of investigation into which specific language components are most significantly influenced from the learners' perspectives. This study addresses these identified gaps by conducting an in-depth case study at Pasadena Hotel College to explore students' responses and the factors that shape them.

Although technology-enhanced language learning has been widely investigated, previous studies on virtual simulations in EFL have primarily emphasized learning outcomes through experimental or quasi-experimental approaches, particularly using Virtual Reality (VR) and Augmented Reality (AR). Consequently, limited attention has been given to how students experience virtual simulations from affective, cognitive, and psychomotor perspectives, especially in vocational EFL settings. In addition, most previous research has examined a single type of simulation, while accessible digital tools such as web-based simulations, game-based simulations, interactive videos, and AI-supported applications remain underexplored within a unified learning context.

The novelty of the present study lies in three aspects. First, it investigates students' responses holistically by integrating affective, cognitive, and psychomotor dimensions into a single analytical framework rather than focusing solely on learning achievement. Second, it examines the implementation of multiple virtual simulation platforms including web-based simulations, game-based simulations, interactive video scenarios, and the PRAKTIKA application in an English for Hospitality classroom, providing a broader understanding of simulation-based language learning in vocational education. Third, by employing an in-depth qualitative case study, this research explores how learner characteristics, technological features, and classroom context interact to shape students' engagement and perceptions, an aspect that has received relatively little attention in previous EFL studies.

Academically, this case study contributes to the literature on technology-enhanced language learning by extending the discussion beyond the effectiveness of digital tools. It proposes that virtual simulations should be viewed not merely as instructional media but as interactive learning environments where students' affective, cognitive, and psychomotor responses collectively influence language learning. This perspective provides a more comprehensive understanding of learner engagement and offers a conceptual framework for future qualitative research on simulation-based language learning, particularly in vocational EFL contexts.

Therefore, this study aims to explore students' responses to the implementation of virtual simulations in an English for Hospitality classroom, identify the factors influencing those responses, and examine the language components that students perceive to be most significantly enhanced through simulation-based learning. By addressing these objectives, the study contributes both practical implications for English language teaching and theoretical insights into learner responses within technology-enhanced EFL instruction.

Virtual Simulations in EFL Context

In the context of this research, virtual simulation is defined as the use of digital, interactive environments that allow students to experience simulated situations and perform tasks related to learning content through technological media (Kefalis et al., 2025). These tools present realistic or semi-realistic scenarios requiring active learner interaction. Specifically, this study utilizes various formats: web-based simulations accessed via browsers, game-based simulations requiring problem-solving, and video-based interactive scenarios. Additionally, the PRAKTIKA application is employed as a structured platform for guided practice and reflection.

Dimensions of Student Response

To comprehensively evaluate the impact of these tools, students' responses are examined through three distinct dimensions: 1) Affective Responses: these encompass emotional and attitudinal reactions during learning activities, including interest, motivation, enjoyment, and confidence. 2) Cognitive Responses: these refer to mental processes related to understanding, thinking, and the perceived usefulness of the simulations for language development. 3) Psychomotor Responses: these involve physical and behavioural engagement, such as navigating the simulation interface and completing digital tasks (Zhong et al., 2026).

Language Components in Technology-Enhanced Learning

The study further categorizes language components to determine where the simulations have the greatest impact. These include speaking, particularly the ability to express ideas and respond to situations orally; vocabulary, especially topic-related and functional terms; grammar; and reading or listening skills related to interpreting instructions within the simulation (Gao et al., 2024). The study focuses on identifying which component is perceived by students as the most significantly influenced by the use of these digital tools.

Factors Influencing Learner Engagement

Several factors are identified as potential influences on student responses during the implementation of virtual simulations. These include internal factors such as student motivation and familiarity with technology, as well as cognitive factors like the perceived cognitive load and the sense of immersion provided by the digital environment (Edgar et al., 2022). Understanding these factors is crucial for teachers to decide whether virtual simulations can be effectively integrated into English instruction.

Research Purpose

The primary objectives of this research are to explore and describe students' responses toward the use of virtual simulations in English language learning. Furthermore, the study aims to analyse the factors that shape or influence those responses during implementation. Finally, the research seeks to identify the specific language components that appear to be most influenced by the use of virtual simulations within a specific English classroom context.

Method

This study adopts a qualitative case study design to provide an in-depth exploration of student responses to virtual simulations. The case study approach is selected because it allows for a detailed examination of a contemporary phenomenon within its real-life context, specifically focusing on the interaction between students and digital technology in a single classroom setting (Bogusevski et al., 2020). This design is used to describe and interpret students' responses toward the use of virtual simulations in English language learning (Takada et al., 2022).

The research instruments were designed to capture students' responses across three dimensions: affective, cognitive, and behavioural. Classroom observations focused on students' engagement and participation during simulation activities, interviews explored students' perceptions and experiences, while the questionnaire provided supporting data regarding students' attitudes toward the use of virtual simulations.

To ensure credibility of the findings, data triangulation was applied by comparing information obtained from classroom observations, student interviews, documentation, and questionnaires (Schlunegger et al., 2024). This approach allowed the researcher to capture a comprehensive picture of students' responses toward the implementation of virtual simulations.

Research Setting and Participants

The research was conducted at Pasadena Hotel College involving students enrolled in the English for Hospitality course. The study involved ten students selected through purposive sampling based on their active participation in virtual simulation

activities during the research period. The participants consisted of six male and four female students who had recently graduated from senior high school and were in their first year of vocational higher education. Permission to conduct the research was obtained from the Head of the English for Hospitality Program before the study commenced, and the research followed the institution's ethical guidelines. All participants received an information sheet explaining the purpose of the study, research procedures, potential benefits, and their rights as participants. Written informed consent was obtained before participation, and students were informed that their participation was voluntary and that they could withdraw from the study at any time without academic consequences. To protect participants' privacy, pseudonyms (S1-S10) were used in all interview transcripts and reports. All interview recordings, questionnaires, observation notes, and other research data were stored in password-protected files accessible only to the researcher.

Research Duration and Procedure

The study was conducted over six weeks. During this period, data were collected in the English for Hospitality classroom at Pasadena Hotel College during the students' regular weekly English classes. One classroom observation was conducted each week, resulting in six observation sessions. Each session lasted approximately 90 minutes and took place in the college class rooms, where students used laptops or smartphones to access the virtual simulation platforms. Six classroom observation sessions were carried out, with one observation conducted each week while students participated in simulation-based learning activities. The implementation of virtual simulations follows a structured procedure designed to guide students through meaningful English language use within hotel-related contexts (Price-Howard & Lewis, 2023).

The stages are as follows: (1) Pre-Simulation Activities. This stage includes an orientation session to explain the purpose and expected outcomes. Students are introduced to *Hotel English Expressions*, covering key vocabulary for front-desk communication, reservations, and handling guest complaints. Technical preparation is also provided to ensure students can navigate the platforms comfortably (Chen et al., 2021), (2) Simulation Sessions. Students engaged directly with virtual simulation platforms such as the PRAKTIKA application and the Perfect Hotel simulation game. They completed hospitality-related tasks including welcoming guests, processing reservations, handling guest complaints, providing hotel information, and solving customer-service problems using English (Vu et al., 2021). During each simulation session, the researcher acted as a non-participant observer and used a structured observation checklist to record students' participation, engagement, confidence, communication, and collaboration. Field notes were written immediately after each session, and screenshots of simulation activities were collected as supporting documentation, and (3) Post-Simulation Activities. After the simulation, students participate in a reflection task to describe their experiences and difficulties. This is followed by a group discussion and semi-structured interviews to capture deeper insights into their perceptions (Shorey et al., 2020).

Data Collection Methods

To ensure the validity and reliability of the findings through triangulation, four primary data collection methods are employed (Hoter et al., 2024). Classroom observations were conducted during six weekly simulation sessions using a

structured observation checklist and field-note guide. The checklist focused on students' affective responses (e.g., motivation, confidence, enthusiasm), cognitive responses (e.g., understanding of tasks, language use, and problem-solving), and behavioural responses (e.g., participation, interaction, and collaboration). Field notes were written immediately after each observation to record contextual information that could not be captured by the checklist.

Semi-structured interviews were conducted individually with each participant after the completion of the six-week intervention. Each interview lasted approximately 15–20 minutes and was conducted in a quiet room on campus. With participants' permission, all interviews were audio-recorded and later transcribed verbatim. The interviews explored students' learning experiences, perceptions of virtual simulations, motivation, language development, challenges encountered, and suggestions for improvement. Documentation included students' reflective writings, researcher field notes, screenshots of simulation activities, classroom photographs, attendance records, and students' learning products generated during the simulations. These documents were used to verify and support the observational and interview findings. At the end of the six-week implementation, a student response questionnaire consisting of Likert-scale and open-ended questions was administered as a supplementary instrument. The questionnaire gathered descriptive information regarding students' engagement, motivation, perceived usefulness, ease of use, and perceived language improvement, thereby strengthening the triangulation process. The observation checklist, interview protocol, and questionnaire are presented in Appendix 1.

Data Analysis Procedures

Data were analysed using qualitative content analysis, supported by descriptive quantitative analysis for supplementary purposes (Roller, 2019). Interview recordings were transcribed verbatim, observation notes were compiled, and documentary evidence was organized before analysis. The coding process was conducted manually without qualitative data analysis software. The analysis follows three main stages, namely data reduction, data display, and conclusion drawing and verification. During data reduction, meaningful units of data were identified and assigned initial codes. Similar codes were then grouped into broader categories before being synthesized into overarching themes. For example, statements such as *"the simulation was interesting," "I enjoyed the activities,"* and *"learning was fun"* were coded as Positive Affective Response. Responses indicating *"I learned many new hotel vocabulary items"* were categorized as Vocabulary Development, whereas comments such as *"the application was difficult to operate"* were classified under Technology Challenges. These categories were subsequently organized into broader themes representing affective responses, cognitive responses, psychomotor responses, factors influencing learner engagement, and perceived language development. The categorized data were then displayed in descriptive narratives and supporting tables to facilitate interpretation of relationships among themes. Finally, conclusions were drawn by comparing findings across observations, interviews, documentation, and questionnaires to ensure consistency and answer the research questions.

Trustworthiness of the Study

To ensure the trustworthiness of the findings, several strategies were employed throughout the research process. First, methodological triangulation was

applied by comparing data obtained from classroom observations, semi-structured interviews, documentation, and questionnaires to enhance the credibility of the findings. Second, member checking was conducted by sharing summaries of the interview interpretations with participants to verify that their views had been accurately represented and to minimize researcher misinterpretation. Third, researcher reflexivity was maintained throughout the study by acknowledging the researcher's dual role as both instructor and investigator and by continuously reflecting on potential biases during data collection and analysis (Olmos-Vega et al., 2023). An audit trail consisting of observation notes, interview transcripts, coding records, and analytical memos was maintained throughout the study to enhance the dependability and confirmability of the findings.

Findings and Discussion

Findings

Student Responses toward Virtual Simulations

To provide a clearer overview of the findings, the main patterns of student responses observed during the implementation of virtual simulations are summarized in Table 1.

Table 1. Summary of Student Responses toward Virtual Simulations

Response Dimension	Key Findings	Data Sources
Affective Response	Students reported increased motivation, enjoyment, and reduced anxiety when practicing English through simulations.	Interview, Questionnaire
Cognitive Response	Students perceived the simulations as useful tools for understanding hospitality procedures and remembering vocabulary.	Interview
Behavioural Response	Students demonstrated active engagement, repeated tasks voluntarily, and explored simulation features independently.	Observation

This table provides an overall answer to the research question concerning students' responses toward the use of virtual simulations in EFL learning. Across all three dimensions, the findings indicate predominantly positive responses. Students demonstrated positive affective responses through increased motivation and reduced speaking anxiety, cognitive responses through improved understanding of hospitality concepts and vocabulary, and behavioural responses through active participation and self-directed learning. These findings suggest that virtual simulations support not only language learning but also learner engagement, thereby fulfilling the main objective of this study. The results of this study are presented based on the three dimensions of student response: affective, cognitive, and behavioural, followed by an analysis of the language components affected and the factors influencing these responses.

Student responses toward the use of virtual simulations can be categorized into three main aspects: (1) affective responses, (2) cognitive responses, and (3) behavioural responses. In terms of affective responses, data from interviews and observations indicated a high level of student enthusiasm throughout the implementation of virtual simulations. Participants consistently reported that the use of the PRAKTIKA application and hotel-based simulators helped reduce their anxiety when practicing English, particularly in speaking activities that would

normally be perceived as stressful. The learning environment was described as more relaxed and less intimidating compared to traditional classroom settings.

Many students highlighted that the gamified elements embedded in the simulations contributed to a more enjoyable learning experience, making the activities feel “less formal and more enjoyable.” This shift in emotional response was evident not only in students’ verbal reflections but also in their classroom behaviour, where they appeared more willing to participate and take risks in using the target language. In the questionnaires, nine out of ten students agreed that virtual simulations increased their motivation to engage in speaking activities compared to traditional role-play, suggesting that interactive and game-like features can positively influence students’ emotional engagement. This finding was also reflected in students’ interview responses. One participant stated, *“I usually feel nervous when speaking English in front of my classmates, but the simulation made me feel more relaxed because I could practice without worrying about making mistakes”* (Student 8). Another participant explained, *“The activities felt more like playing than studying, so I became more motivated to finish every task”* (Student 9). These findings directly answer the first research question by demonstrating that students responded positively at the affective level. The reduction of speaking anxiety and the increase in motivation indicate that virtual simulations create a psychologically supportive environment for language learning. This finding is particularly important because speaking anxiety has frequently been identified as a major obstacle in EFL classrooms.

In terms of cognitive responses, students’ perceptions primarily focused on the usefulness and clarity of the simulation as a learning tool. They reported that the simulations helped them better understand procedural knowledge in hospitality contexts, such as handling guest interactions and performing check-in processes. The visual and interactive design of the simulation provided a structured and concrete representation of abstract concepts typically presented in textbooks, enabling students to build clearer mental models of real-world practices.

In addition, the presence of immediate or real-time feedback within the simulation supported students in identifying and correcting their mistakes during the activity, encouraging reflection and self-monitoring. As noted by one participant, the simulation *“made abstract concepts in the textbook become visible and easier to remember”* (Participant 4). This suggests that virtual simulations function as an effective bridge between theoretical knowledge and practical application, while also promoting deeper cognitive engagement. Students also described how the simulations helped them understand hospitality concepts more clearly. As one participant commented, *“I understood the hotel procedures better because I could see each step while doing the activity, not just reading about it”* (Student 2).

Another student remarked, *“When I made a mistake, the application showed me what to do next, so I learned from my errors immediately”* (Student 10). This finding suggests that virtual simulations facilitate meaningful learning by enabling students to connect theoretical knowledge with authentic professional practice. Rather than simply memorizing vocabulary or procedures, students constructed their understanding through contextualized experiences. Therefore, the simulations appear to promote deeper cognitive processing, which aligns with the study’s objective of exploring students’ cognitive responses.

With regard to behavioural responses, observational data revealed a high level of student engagement during the simulation sessions, as indicated by sustained attention to tasks and active involvement in completing the assigned activities. Initially, some students demonstrated hesitation, particularly when navigating the simulation interface or responding to unfamiliar scenarios; however, this gradually shifted into more confident and exploratory behaviour as students became more familiar with the system. A notable behavioural pattern was students' tendency to repeat simulation scenarios multiple times in order to improve their performance or achieve better outcomes, indicating the emergence of self-directed learning.

At the same time, minor challenges related to technical issues, such as navigation difficulties or unclear instructions, were observed to occasionally disrupt students' focus, although these did not significantly hinder overall participation. These behavioural patterns indicate that virtual simulations not only promote active engagement but also encourage persistence, experimentation, and autonomous learning. This behavioural change was evident in students' reflections. One participant explained, *"I repeated the same scenario several times because I wanted to improve my performance and get better results"* (Student 3). Another student stated, *"I tried different responses to see which one worked best with the guest"* (Student 5). These behavioural patterns indicate that students were not merely completing assigned tasks but were actively regulating their own learning. Their willingness to repeat simulation activities voluntarily suggest that the simulations encouraged self-directed learning and sustained engagement, which are essential characteristics of effective language learning.

Affected Language Components

The findings revealed that *speaking* and *vocabulary* were the two language components most significantly influenced by the use of virtual simulations. This can be understood from how the simulation environment positioned students as active participants in realistic communicative situations, requiring them to produce language meaningfully rather than simply recall it. The tasks embedded in the simulations encouraged the use of functional expressions, such as greeting guests, handling complaints, and offering solutions, all of which reflect authentic language use in hospitality contexts.

Students demonstrated noticeable improvement in their willingness to speak and their overall oral performance. The virtual simulation appeared to create a psychologically safe learning environment where students could experiment with language without the immediate pressure of face-to-face interaction. This sense of safety reduced fear of making mistakes, which is often a major barrier in speaking activities. In addition, the interactive nature of the simulation required students to respond spontaneously to different scenarios, promoting more natural and fluid communication. Rather than relying on memorized dialogues, students engaged in situational speaking, where they had to adapt their language based on the context. This helped them develop not only fluency but also pragmatic competence, such as choosing appropriate expressions, adjusting tone, and maintaining polite interaction. As a result, speaking became a more meaningful and less intimidating activity for the learners.

Vocabulary development was strongly supported by the contextual and visual nature of the simulation. The hospitality-themed environment exposed

students to specific, job-related terminology that was directly tied to actions and situations within the simulation. This contextualization allowed students to infer meaning more effectively and retain new words more easily.

Unlike traditional vocabulary learning, which often relies on lists or isolated definitions, the simulation embedded vocabulary within meaningful tasks. For example, students encountered and used terms while performing actions such as checking in guests, explaining room facilities, or responding to service requests. This experiential exposure helped students connect words with their practical use, leading to deeper understanding and longer retention.

Furthermore, repeated interaction with similar scenarios allowed students to recycle vocabulary naturally, reinforcing their learning without explicit memorization. The combination of visual cues, contextual usage, and task-based repetition made vocabulary acquisition more intuitive and relevant to their future professional needs.

To further support these findings, students' responses during the learning process and post-activity reflections also highlighted their positive experiences with virtual simulations. Several students expressed that the simulation environment helped them feel more confident and less anxious when speaking. One student stated, *"I feel more confident speaking in the simulation because I can try without being afraid of making mistakes in front of my friends"* (Student 1). Another student added, *"The situations feel real, so I try to respond like in real life, not just memorize sentences"* (Student 3).

In terms of vocabulary, students emphasized the role of visual and contextual support in helping them understand and remember new words. As one student explained, *"When I see the objects and actions in the simulation, I understand the vocabulary faster"* (Student 5). Similarly, another student noted, *"It is easier to remember the words because I use them directly in the activity"* (Student 7). These responses were consistent with classroom observations, which showed that students were actively engaged, frequently experimenting with new expressions, and gradually using more varied and appropriate vocabulary throughout the simulation sessions (Field Notes, Session 2; Session 3).

Further analysis of interview and questionnaire data indicates that the improvement in speaking skills was closely related to the interactive nature of the simulations. Students were required to respond to situational prompts, such as greeting guests, handling complaints, or explaining hotel services, which encouraged spontaneous oral production. In addition, vocabulary development occurred naturally as students repeatedly encountered hospitality-related terms within the simulation interface. Words such as reservation, check-in, complaint handling, and room service became more memorable because they were directly connected to visual actions and simulated tasks.

Overall, these findings indicate that speaking and vocabulary were the language components most strongly influenced by the virtual simulations. This directly addresses the second research objective by demonstrating that simulation-based learning supports communicative competence through contextualized language use rather than isolated language practice. The findings also suggest that authentic learning environments can facilitate both language acquisition and learner confidence simultaneously.

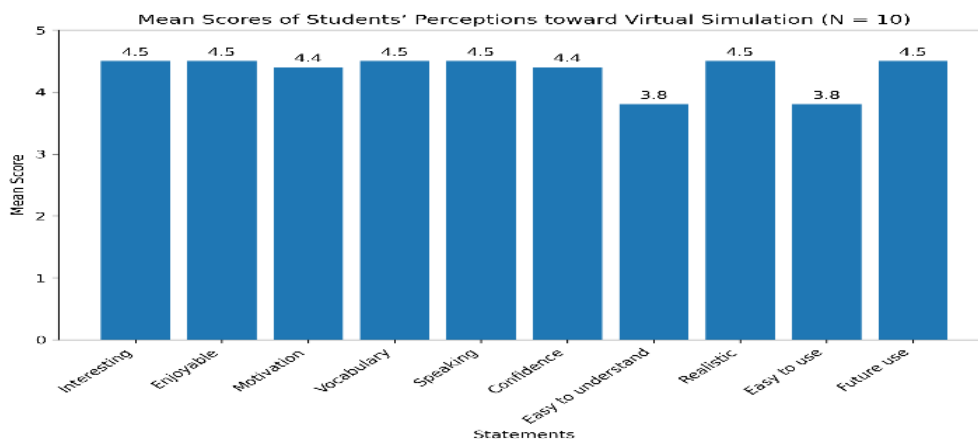


Chart 1. Mean Scores of Students' Perceptions toward the Use of Virtual Simulation

The bar chart illustrates the mean scores of students' perceptions toward the use of virtual simulation in English learning. Overall, the results show a highly positive evaluation across most items, with mean scores ranging from 3.8 to 4.5 on a five-point Likert scale. The highest scores ($M=4.5$) were found in several aspects, including *interest*, *enjoyment*, *vocabulary development*, *speaking practice*, *realism*, and *future use*, indicating that students perceived the simulation as engaging, relevant, and beneficial for language learning. In addition, the aspects of *motivation* and *confidence* also received high ratings ($M=4.4$), suggesting that the use of virtual simulation contributed positively to students' affective factors, particularly in increasing their willingness to participate and reducing anxiety in speaking activities.

However, slightly lower mean scores were observed in *ease of understanding* and *ease of use* ($M=3.8$). This indicates that while students generally responded positively to the simulation, some experienced minor challenges related to instructions or technical usability. In summary, the findings suggest that virtual simulation is perceived as an effective and engaging learning tool that supports both students' language development and their overall learning experience, although improvements in usability and clarity of instructions may further enhance its effectiveness. The questionnaire findings also corroborate the qualitative data obtained from classroom observations and interviews. The consistency across these data sources strengthens the credibility of the findings, indicating that students' positive perceptions were reflected not only in their self-reports but also in their actual classroom behaviours.

Factors Influencing Student Responses

Analysis of the interviews identified three primary factors shaping student responses, namely perceived realism, ease of use, and instructional guidance. These factors played a crucial role in determining how students engaged with and benefited from the virtual simulation. Overall, students' experiences were not only influenced by the features of the simulation itself but also by how the learning environment was structured and supported by the teacher.

With regard to perceived realism, students' engagement was strongly influenced by how closely the simulation resembled real-life hotel operations. The authenticity of tasks, such as interacting with guests, managing reservations, and handling service-related issues, allowed students to immerse themselves in the

learning experience. This sense of realism encouraged students to take the activities more seriously and respond as they would in actual workplace situations. One student noted, *"The simulation feels like working in a real hotel, so I try to speak and act professionally"* (Student 2). Another participant shared, *"The situations were similar to what I expect to face in the hospitality industry, so I tried to communicate seriously"* (Student 8). This was also supported by observational data, which showed that students were more focused and actively involved when the scenarios reflected familiar or realistic contexts (Field Notes, Session 2).

In terms of ease of use, the usability of the platform significantly affected students' overall experience. Simulations that were intuitive and easy to navigate enabled students to focus more on language use rather than technical aspects. When the platform functioned smoothly, students were more confident in exploring different features and completing tasks independently. As one student explained, *"If the system is easy to use, I can focus on speaking, not thinking about how to operate it"* (Student 4). However, another participant expressed a different opinion, *"Sometimes I was confused about which button to click first, so I needed help from my classmates"* (Student 9). Minor difficulties in understanding instructions or navigating certain features occasionally disrupted the learning process, particularly for students who were less familiar with digital tools.

Although the majority of students considered the platform easy to use, a few participants expressed different opinions. One student reported, *"Sometimes I spent too much time figuring out the buttons, so I lost concentration on the English task"* (Student 10). Observation notes from Session 1 similarly recorded that two students frequently asked for assistance when navigating the interface before becoming familiar with the platform. These findings suggest that technical usability may temporarily influence students' engagement, particularly during the initial implementation of virtual simulations.

Finally, instructional guidance emerged as a key factor in shaping meaningful learning experiences. The pre-simulation orientation provided by the teacher helped students understand the objectives of the activity and how to interact effectively within the simulation. Clear instructions and modelling of tasks enabled students to shift their perspective from merely "playing" the simulation to actively using it as a learning tool. One student stated, *"At first, I thought it was like a game, but after the teacher explained the task, I understood what I needed to practice"* (Student 6). Another participant similarly explained, *"The teacher's explanation before the simulation helped me understand what I should pay attention to during the activity"* (Student 7). These findings were reinforced by classroom observations, which indicated that students who received clearer guidance were more purposeful in their interactions and more consistent in using target language during the simulation (Field Notes, Session 1; Session 3). These findings suggest that the effectiveness of virtual simulations is not solely determined by the technology itself, but also by the level of realism, usability, and instructional support provided. These factors collectively shape how students perceive, engage with, and benefit from the learning experience. These findings suggest that the success of virtual simulations depends not only on technological features but also on appropriate pedagogical implementation. Realistic scenarios, user-friendly interfaces, and effective teacher guidance collectively shape students' learning

experiences. Therefore, technology should be viewed as a tool that supports learning rather than as a replacement for instructional practice.

Finally, the findings answer the research questions by demonstrating that students responded positively to the use of virtual simulations across affective, cognitive, and behavioural dimensions. Interview, observation, questionnaire, and documentation data consistently showed that virtual simulations increased students' motivation, reduced speaking anxiety, enhanced vocabulary learning, promoted active participation, and encouraged autonomous learning. These findings indicate that virtual simulations provide a meaningful learning environment that supports both language development and learner engagement in English for Hospitality contexts.

Discussion

The present study sought to explore students' responses toward the use of virtual simulations in English for Hospitality learning. Three key findings emerged from the analysis. First, students demonstrated consistently positive responses across affective, cognitive, and behavioural dimensions, indicating that virtual simulations supported both emotional engagement and active participation in language learning. Second, speaking and vocabulary were identified as the language components most positively influenced by the simulations, largely because students were required to use English in authentic hospitality scenarios. Third, students' responses were shaped not only by the technology itself but also by pedagogical factors, particularly the realism of the simulation, the usability of the platform, and the instructional guidance provided by the teacher. These findings collectively suggest that the effectiveness of virtual simulations lies in the interaction between technological affordances and instructional design rather than in the technology alone.

The findings of this study reinforce the theory that technology-enhanced environments can significantly boost learner engagement in an EFL context. The positive affective responses observed align with the findings of Takada et al. (2022), who suggested that digital simulations provide a low-stress environment for language practice. By reducing the "affective filter," virtual simulations allow students to focus more on communication rather than the fear of grammatical errors.

The present findings are consistent with previous studies reporting that technology-enhanced learning environments increase learners' motivation and confidence (Takada et al., 2022; Mahdi & Dewi, 2025). However, unlike many earlier studies that primarily examined overall learning achievement through experimental designs, the present research demonstrates that students' responses extend beyond affective outcomes. By exploring affective, cognitive, and behavioural dimensions simultaneously, this study reveals how these dimensions interact to support meaningful language learning. This broader perspective suggests that learner engagement should be understood as a multidimensional construct rather than merely an emotional reaction to technology.

Although the findings generally support previous research on simulation-based learning, several differences also emerged. Previous studies have frequently examined immersive technologies such as Virtual Reality or Augmented Reality, whereas this study demonstrates that comparable positive responses can also be

achieved using accessible web-based simulations and AI-supported applications. This finding suggests that high levels of learner engagement do not necessarily depend on sophisticated technologies but may instead be influenced by how authentically learning tasks are designed and integrated into classroom instruction. This finding also contributes to the growing discussion on technology-enhanced language learning by suggesting that accessibility may be more important than technological sophistication. While previous studies have frequently emphasized immersive technologies such as virtual reality, the present findings indicate that readily available AI-assisted applications and web-based simulations can generate comparable levels of learner engagement when accompanied by authentic learning tasks and appropriate instructional support. This extends previous research by highlighting pedagogical design as a more influential factor than technological complexity.

Furthermore, the transition from cognitive understanding to behavioural engagement observed in this study supports the use of situated learning theory. Students did not just memorize phrases; they used them to solve problems within a simulated professional reality. This is consistent with Vu et al. (2021), who argued that authentic contexts in simulations improve the retention of functional language. This finding can be explained through the lens of situated learning theory, which emphasizes that knowledge is constructed through active participation in authentic social and professional contexts. Rather than learning English as isolated vocabulary or grammatical structures, students developed their language skills while performing meaningful hospitality tasks, such as assisting guests and responding to workplace scenarios. The simulation therefore positioned students as active participants in a realistic professional community, allowing them to construct knowledge through experience rather than memorization. This helps explain why students demonstrated not only improved language use but also greater confidence and engagement throughout the learning process.

However, the study also highlights that technology is not a standalone solution. The role of the teacher in the "Pre-Simulation" and "Post-Simulation" stages remains vital. Without proper scaffolding and reflection, simulations risk becoming mere entertainment. This aligns with the findings of Alani et al. (2026), who argue that simulation-based learning requires structured instructional support and guided reflection to ensure that learners can meaningfully process their experiences and achieve deeper learning outcomes. The identified factors, such as ease of use and realism, suggest that the selection of the platform is a critical pedagogical decision that determines the success of the integration.

An unexpected finding of the study was that several students initially experienced confusion when navigating the simulation platforms despite being familiar with digital technology in their daily lives. This indicates that digital literacy does not automatically translate into effective use of educational technologies. Students still required explicit instructional guidance before they were able to focus on language learning rather than technical operation. This finding emphasizes the importance of structured orientation activities, which have received relatively limited attention in previous simulation-based EFL studies. This finding also suggests that being familiar with digital technology for everyday purposes does not necessarily mean that students are prepared to use educational technologies effectively. Students still required instructional support to understand

how the simulation could be used as a learning tool rather than simply as a digital application. Therefore, digital competence in language learning should be viewed as the ability to use technology strategically to achieve learning objectives, rather than merely possessing technical skills.

Building on these findings, it can be seen that the effectiveness of virtual simulations comes from their ability to bring together affective, cognitive, and behavioural aspects of learning into one experience. The improvement in speaking and vocabulary observed in this study appears to be the result of this combination, where reduced anxiety, clearer understanding, and repeated practice support each other. In this sense, virtual simulations are not simply tools, but learning environments that shape how students engage with the language. This is related with the statements of Mahdi & Dewi (2025) that students' experiences, engagement, and attitudes toward interactive technology have become crucial for understanding the direction of English education in the modern era.

In terms of speaking development, the findings show that opportunities for repeated, context-based interaction play an important role in improving students' communicative ability. Students were not only exposed to language input, but were also encouraged to produce language in meaningful situations. This reflects the principles of communicative language learning, where language is used for real purposes (Hashim, 2025). The simulation environment allowed students to take risks, try different expressions, and gradually become more fluent. This suggests that learning environments that focus on interaction and real-life context may be more effective than approaches that focus mainly on accuracy. One possible explanation for this finding is that the simulation reduced the social pressure often experienced during classroom speaking activities. Students were able to practise repeatedly, receive immediate feedback, and experiment with different expressions before communicating in new situations. This supportive environment encouraged greater willingness to communicate, which subsequently contributed to improvements in speaking confidence and fluency.

A similar pattern can be seen in vocabulary development. Students did not rely on memorization, but instead learned new words through direct use in specific tasks. This indicates that vocabulary learning becomes more effective when students can connect words with actions and real situations which aligns with Wang et al. (2025), emphasizing that vocabulary development is enhanced through multimodal and contextualized learning processes where meaning is constructed through interaction, experience, and the use of multiple semiotic resources. Repeated exposure to similar scenarios also helped reinforce their understanding, as students had the chance to reuse vocabulary in slightly different contexts. Another point that emerges from this study is the development of learner autonomy. The observation that students repeated tasks and tried to improve their performance on their own shows that the simulation encouraged independent learning. This is in line with previous research of Taylor et al. (2025) which highlights that technology-enhanced learning environments can promote learner autonomy by encouraging students to actively monitor and refine their own performance through iterative practice. When students are given interactive and goal-oriented activities, they tend to take more responsibility for their learning. However, this does not happen automatically, as it depends on how the tasks are designed and how clearly the objectives are explained. These findings indicate that

vocabulary learning became more meaningful because students encountered new words repeatedly within authentic communicative situations instead of memorizing isolated word lists. The combination of visual support, contextualized tasks, and repeated use enabled students to associate vocabulary with real actions and professional situations, thereby promoting deeper understanding and longer-term retention.

From a theoretical perspective, the findings extend the discussion of technology-enhanced language learning by demonstrating that virtual simulations function as integrated learning environments where affective, cognitive, and behavioural processes operate simultaneously. Rather than considering these dimensions independently, the findings suggest that reduced anxiety encourages greater participation, active participation promotes deeper cognitive processing, and repeated practice strengthens language acquisition. This integrated relationship contributes to a more comprehensive understanding of learner engagement in simulation-based EFL instruction.

From a pedagogical perspective, the findings suggest that teachers should carefully design simulation activities rather than simply introducing digital tools into the classroom. Effective implementation requires clear learning objectives, adequate pre-simulation orientation, meaningful communicative tasks, and structured post-simulation reflection. Teachers should also select simulation platforms based not only on technological sophistication but also on usability, authenticity, and alignment with learning outcomes. These considerations are particularly relevant for vocational English programs, where realistic communication tasks are essential for preparing students for workplace interaction. Taken together, the present study extends previous research by demonstrating that the effectiveness of virtual simulations lies in the interaction among affective, cognitive, and behavioural engagement. Rather than functioning independently, these dimensions reinforce one another: reduced anxiety encourages greater participation, active participation promotes deeper cognitive processing, and repeated authentic practice strengthens language development. This integrated perspective contributes to a more comprehensive understanding of learner engagement in simulation-based EFL learning, particularly within vocational English education.

Finally, these findings suggest that the successful use of virtual simulations depends not only on the technology itself but also on how it is used in the classroom. Features such as realism, interactivity, and ease of use can support engagement, but they need to be combined with clear instructions and appropriate guidance from the teacher. Therefore, careful planning and alignment with learning objectives are essential to ensure that simulations contribute effectively to language learning.

Conclusion

Based on the research findings and discussion, it can be concluded that the implementation of virtual simulations in the English for Hospitality course at Pasadena Hotel College elicited a predominantly positive response from students across affective, cognitive, and behavioural dimensions. Affectively, the use of digital simulations significantly reduced foreign language anxiety and increased learning motivation by providing a low-stakes, gamified environment. Cognitively,

students perceived the simulations as effective tools for bridging the gap between theoretical hospitality concepts and practical language application. Behaviourally, the interactive nature of the platforms fostered high levels of engagement and self-directed learning.

The study also identified that speaking skills and vocabulary acquisition were the language components most significantly influenced by the simulations. The realistic context of the virtual environments allowed students to practice functional expressions and industry-specific terminology more naturally. Furthermore, factors such as the perceived realism of the scenarios, the user-friendliness of the platform, and the structured guidance provided by the instructor during pre- and post-simulation activities were found to be critical in shaping these positive outcomes. These findings highlight the pedagogical potential of virtual simulations as a practical tool for integrating contextualized language practice in vocational English classrooms, particularly in hospitality-related education.

The findings further suggest that virtual simulations are a viable and effective pedagogical tool for modern EFL instruction, particularly in vocational higher education. However, their successful implementation depends not only on the availability of technology but also on careful instructional design. Educators should select simulation scenarios that closely reflect authentic workplace situations, provide appropriate linguistic scaffolding before simulation activities, and facilitate structured reflection afterward to maximize learning outcomes. In this way, virtual simulations can serve as meaningful learning environments that support both language development and professional communication skills.

Although this case study provides in-depth insights into students' responses within a specific educational context, its findings should be interpreted in light of several limitations, including the relatively small sample size and the focus on a single vocational institution. Therefore, future research could adopt longitudinal designs to investigate the long-term retention of language skills developed through virtual simulations. Comparative studies involving larger and more diverse participant groups across different educational contexts would also help validate the transferability of the findings. In addition, further research examining the integration of Artificial Intelligence (AI)-supported features, such as personalized feedback and adaptive learning pathways, may provide deeper insights into how emerging technologies can further enhance technology-enhanced language learning.

References

- Alani, N. H. S., Awawdeh, L., & Forrest, R. (2026). Augmented reality, virtual reality and gamified learning in early childhood education: A scoping review with a practice-led prototype case. *Entertainment Computing*, 57, 101103. <https://doi.org/10.1016/j.entcom.2026.101103>
- Bogusevski, D., Muntean, C., & Muntean, G.-M. (2020). Teaching and Learning Physics using 3D Virtual Learning Environment: A Case Study of Combined Virtual Reality and Virtual Laboratory in Secondary School. *Journal of Computers in Mathematics and Science Teaching*, 39(1), 5–18. <https://doi.org/10.70725/297454nsjryb>
- Chen, C., Hung, H., & Yeh, H. (2021). Virtual reality in problem-based learning contexts: Effects on the problem-solving performance, vocabulary

- acquisition and motivation of English language learners. *Journal of Computer Assisted Learning*, 37(3), 851–860. <https://doi.org/10.1111/jcal.12528>
- Edgar, A. K., Macfarlane, S., Kiddell, E. J., Armitage, J. A., & Wood-Bradley, R. J. (2022). The perceived value and impact of virtual simulation-based education on students' learning: A mixed methods study. *BMC Medical Education*, 22(1), 823. <https://doi.org/10.1186/s12909-022-03912-8>
- Gao, C., Lan, X., Li, N., Yuan, Y., Ding, J., Zhou, Z., Xu, F., & Li, Y. (2024). Large language models empowered agent-based modeling and simulation: A survey and perspectives. *Humanities and Social Sciences Communications*, 11(1), 1259. <https://doi.org/10.1057/s41599-024-03611-3>
- Hashim, A. A. (2025). Innovative Approaches in English Language Teaching: A Comparative Analysis of Traditional and Modern Methods. *South Asian Research Journal of Arts, Language and Literature*, 7(01), 1–7. <https://doi.org/10.36346/sarjall.2025.v07i01.001>
- Hoter, E., Yazbak Abu Ahmad, M., & Azulay, H. (2024). Enhancing Language Learning and Intergroup Empathy through Multi-User Interactions and Simulations in a Virtual World. *Virtual Worlds*, 3(3), 333–353. <https://doi.org/10.3390/virtualworlds3030018>
- Kefalis, C., Skordoulis, C., & Drigas, A. (2025). Digital Simulations in STEM Education: Insights from Recent Empirical Studies, a Systematic Review. *Encyclopedia*, 5(1), 10. <https://doi.org/10.3390/encyclopedia5010010>
- Lou, Y. (2025). The impact of virtual reality environments on English language acquisition: Innovative immersive learning technologies for communication skills development. *Journal of Computational Methods in Sciences and Engineering*, 25(5), 4616–4632. <https://doi.org/10.1177/14727978251337950>
- Mahdi, M. A., & Dewi, D. S. (2025). Students' Experiences, Engagement, and Attitudes in the English Education Revolution: The Role of Interactive Technology. *International Journal of Educational Qualitative Quantitative Research*, 4(1), 1–14. <https://doi.org/10.58418/ijeqqr.v4i1.134>
- Marunovich, O., Bessarabova, O., Shefieva, E., & Razhina, V. (2021). Impact of podcasting on English learners' motivation in asynchronous e-learning environment. *SHS Web of Conferences*, 110, 03006. <https://doi.org/10.1051/shsconf/202111003006>
- Olmos-Vega, F. M., Stalmeijer, R. E., Varpio, L., & Kahlke, R. (2023). A practical guide to reflexivity in qualitative research: AMEE Guide No. 149. *Medical Teacher*, 45(3), 241–251. <https://doi.org/10.1080/0142159X.2022.2057287>
- Price-Howard, L. K., & Lewis, H. (2023). Perceived usefulness of simulation learning in hospitality education. *International Hospitality Review*, 37(2), 384–393. <https://doi.org/10.1108/IHR-05-2022-0028>
- Roller, M. R. (2019). A Quality Approach to Qualitative Content Analysis: Similarities and Differences Compared to Other Qualitative Methods. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, Vol 20, No 3 (2019): Qualitative Content Analysis I. <https://doi.org/10.17169/FQS-20.3.3385>
- Schlunegger, M. C., Zumstein-Shaha, M., & Palm, R. (2024). Methodologic and Data-Analysis Triangulation in Case Studies: A Scoping Review. *Western Journal of Nursing Research*, 46(8), 611–622. <https://doi.org/10.1177/01939459241263011>

- Shorey, S., Ang, E., Ng, E. D., Yap, J., Lau, L. S. T., & Chui, C. K. (2020). Communication skills training using virtual reality: A descriptive qualitative study. *Nurse Education Today*, 94, 104592. <https://doi.org/10.1016/j.nedt.2020.104592>
- Tai, K. W. H., & Choi, K. C. K. (2025). Conceptualising multilingual classrooms as a digital gamified translanguaging space: Fostering language learning motivation and reducing foreign language anxiety in content and language learning. *Journal of Multilingual and Multicultural Development*, 1–36. <https://doi.org/10.1080/01434632.2025.2580563>
- Takada, K., Murakami, K. H., Yamazaki, A. K., & Yamanakac, T. (2022). A preliminary study of VR English training material for personnel in the tourism industry. *Procedia Computer Science*, 207, 3721–3729. <https://doi.org/10.1016/j.procs.2022.09.432>
- Taylor, R., Fakhimi, M., Ioannou, A., & Spanaki, K. (2025). Personalized learning in education: A machine learning and simulation approach. *Benchmarking: An International Journal*, 32(7), 2662–2689. <https://doi.org/10.1108/BIJ-06-2023-0380>
- Van Der Meulen, F. J., & De Vries, M. (2023). A literature review of implementing virtual reality in hospitality education. *Research in Hospitality Management*, 13(1), 55–61. <https://doi.org/10.1080/22243534.2023.2239584>
- Vu, N. N., Linh, V. T., Van, N. T. T., & Lien, N. T. H. (2021). *Effectiveness of Second Life Virtual Learning Environment for Language Training in Hospitality and Tourism*: 17th International Conference of the Asia Association of Computer-Assisted Language Learning (AsiaCALL 2021). <https://doi.org/10.2991/assehr.k.210226.003>
- Wang, X., Xia, C., Zhao, Q., & Chen, L. (2025). Enhancing second language motivation and facilitating vocabulary acquisition in an EFL classroom through translanguaging practices. *Applied Linguistics Review*, 16(5), 2183–2216. <https://doi.org/10.1515/applirev-2024-0292>
- Zhong, Y., Li, C., Jiang, J., Fryer, L. K., & Shum, A. (2026). Can Virtual Reality Promote Cognitive, Affective, and Psychomotor Learning? A Synthesis of Systematic Reviews and Meta-Analytic Evidence. *Journal of Educational Computing Research*, 07356331261434358. <https://doi.org/10.1177/07356331261434358>