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A systematic literature review on VR table manner innovation as an emerging learning media in culinary education

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ABSTRAK

Virtual Reality (VR) merupakan inovasi signifikan dalam pendidikan kuliner, khususnya pada pembelajaran tata hidang. Teknologi ini memungkinkan mahasiswa berlatih dalam lingkungan virtual yang realistis, sehingga menciptakan pengalaman belajar yang imersif dan interaktif. Melalui Systematic Literature Review (SLR) terhadap 50 artikel, 13 studi dari tahun 2018–2025 dianalisis untuk mengevaluasi efektivitas VR. Hasilnya menunjukkan bahwa VR mampu meningkatkan keterlibatan, pemahaman konsep, dan keterampilan teknis mahasiswa dalam penyajian makanan. VR juga memberikan fleksibilitas pembelajaran tanpa batasan waktu dan tempat. Namun, kendala seperti biaya tinggi, keterbatasan konten spesifik, dan simulasi keterampilan psikomotor masih menjadi tantangan. Oleh karena itu, integrasi VR dengan metode konvensional serta kerja sama antara institusi pendidikan dan industri teknologi diperlukan untuk mengoptimalkan pembelajaran tata hidang dan mempersiapkan mahasiswa menghadapi dunia kerja.

ABSTRACT

Virtual Reality (VR) is a significant innovation in culinary education, especially in table-service learning. This technology allows students to practice in a realistic virtual environment, creating an immersive and interactive learning experience. Through a Systematic Literature Review (SLR) of 50 articles, 13 from 2018 to 2025 were analysed to evaluate the effectiveness of VR. The results showed that VR can increase students' engagement, conceptual understanding, and technical skills in table service. VR also provides learning flexibility without time and place constraints. However, obstacles are challenging, including high costs, limited specific content, and psychomotor skill simulations. Therefore, integrating VR with conventional methods and educational institutions and the technology industry collaboration are crucial to optimise table-service learning and prepare students for the workforce.

INTRODUCTION

Table manner is an integral part of culinary education, especially for those pursuing careers in the hospitality and restaurant industries (Bou-Mitri et al., 2018; Derianto & Kristiutami, 2015; Theurer, 2011). Table service encompasses food-serving skills, etiquette, formal protocols, and interactions between servers and customers (Cassar & Inguanez, 2018; Heikkilä et al., 2016). With the continuous growth of the global culinary industry, table service skills are becoming increasingly essential, particularly in meeting international service standards applied in five-star hotels and fine dining restaurants (Abdullah et al., 2020; Sheehan-Smith, 2006). However, traditional methods of teaching table service still present several challenges. Learning is typically through classroom theory and hands-on practice in restaurant laboratories or hotel simulations. While this method is effective, certain limitations can hinder learning outcomes. One of the primary issues is the lack of resources to create a learning environment that resembles a fine dining restaurant. Also, cost, time constraints, and accessibility often hinder students from gaining sufficient hands-on experience before entering the workforce. A number of institutions including the Culinary Institute of America (CIA), Le Cordon Bleu, the Swiss Hotel Management School (SHMS) together with notable Indonesian institutions such as Sekolah Tinggi Pariwisata Bandung (STPB), Universitas Pendidikan Indonesia (UPI), and Universitas Negeri Malang (UM) still face difficulties despite having created several methods of approaches for training table service education. In resolving these issues the innovations of the teaching techniques have proven to be crucial. New Vista in Culinary education is provided through technological innovations which has yielded fruitful advancement in Virtual Reality (VR) Systems (Law & Heintz, 2021; Lee & Tao, 2022; Mustaqim, 2016; Saboia et al., 2018) serves realistic simulations of restaurants so learners can practice table service under varying circumstances and service standards at locations remote from each other. This form of technology is highly immersive and helps learners grasp service protocols and volume of intersection and even table manners from various cultures unhindered by time and distance. (Nafisah & Ghofur, 2020; Purbasari et al., 2019). As indicated by (Elmqaddem, 2019), the application of virtual reality (VR) technology has grown tremendously in medicine, engineering, and aviation (Irwansyah et al., 2018). In medicine, it is being used in surgical simulations, and in aviation, it is used to train pilots in multiple flight situations. The successful use of VR in such fields also indicates that the same technology can be used in table service learning (Widiaty et al., 2022; Yulia et al., 2019).

There are certain limitations that must be improved upon regarding the teaching methods employed to learn table service. Such limitations that are systematically conditioned, have become the major hindrance in successfully achieving the desired learning outcomes. Among the most prominent problems is the inadequate availability of infrastructure of supporting facilities. To a larger extent, not all academic institutions have precision-grade restaurant labs or fine-dining hotels which leads to the accuracy of the table service simulated. Service simulations are restricted and do not reflect global conditions. Moreover, the requirement of table service is one of the more expensive training modules. It requires a high rate of investment and qualified mentoring. The reproducing of masks and simulations that mimic industry standards brings high demands and scarcity of affordability.

In addition, most learning approaches only conside the boundaries of the materials presented. Sufficient learning environmnets in practice are, however, more challenging. Consider the restrrants and hotels, the service conditions sufficing to the special needs of the customers, the breaches of etiquette and other understaningful issues, and so on. Customer caring resolving issues and, adapting, to dine and other service relationships the so called special needs or more, described in the materials. Another issue, constrains such as time and distance available as, the trainers and the trainees, to the location, which is restricted. The restriction is, however, will the logistics neccessary to the venue. In addition to the, limited constrains of practice available to the learner, the range of conditions, scenario and bounded, is less. Therefore, a learner, to deep and understanding service of the mastery more, practice service skills more. These issues suggest the need for a learning method adjacency, the new responsive to the hospitality domain must, more, flexible. All the issues raised suggest the new matters of the location of the needs service

possibilities, to the more effective or improved advanced learning to the use captured of the VR rests, to the table service.

Virtual Reality (VR) is a technology that allows users to experience an immersive and interactive digital environment (Lege & Bonner, 2020; Mali et al., 2021; Prisila et al., 2021). The age-old techniques associated with teaching table service have their weaknesses which have to be dealt with so that learning can be optimized. In culinary educational institutions, the learning of table service has a number of structural constraints that dampen the training's efficiency. One of the fundamental problems is the lack of sufficient training facilities. Many institutions that lack adequately restaurant equipped training laboratories or fine-dining hotels will have to accept service simulations that are narrow and poorly aligned with real service conditions. Moreover, the training of table service is expensive due to the equipment, food, and qualified teaching personnel that have to be paid for. Many institutions can afford to deliver table service training due to being heavily restricted in finances.

Additionally, as mentioned earlier, the method of instruction tends to follow the regimented boundaries of the syllabus. In practical contexts, however, the service conditions that pertain to the restaurant and hotel industry include a range of activities, from serving the physically challenged and coping with difficult patrons to resolving cultural dining etiquette issues. Another factor is the issue of time and access, in which training students in table service etiquette tends to encourage training in a limited physical space, an impractical solution for students with location or time issues. Also, as mentioned earlier, instruction is typically within a single or two repetitions of practice in varied contexts, which limits the depth of understanding and service skills. It is, therefore, important to devise an approach that is flexible, broad-based, and attuned to the realities of the industry in order to assist students in the increasingly complex requirements of the hospitality industry. In light of these contradictions, creative thinking is required to improve students learning of table service etiquette. One solution gaining popularity is the use of Virtual Reality (VR) technology in simulating table manner scenarios.Several studies have demonstrated the effectiveness of VR in education. A study from (Makransky & Petersen (2021) found that VR use in learning significantly enhances student engagement and motivation. Another study by (Hart & Sutcliffe,2019) proved that VR improves students' comprehension of complex concepts and provides a more engaging learning experience compared to conventional methods. There are many important aspects which align with the needs of the food service and hospitality industry when using Virtual Reality (VR) in learning the different aspects of table service. One important application is the virtual simulation of serving food in a fine and casual dining environment. Students are expected to learn to serve food in a fine dining environment and observe international standards which encompass serving and draining plate covers, wine pouring, and table etiquette in addition to proper table setup. Apart from the serving techniques, VR also aids in training students with customer interaction skills. In the real world, communication skills are a must-have for a successful restaurant waiter. In VR programs, students learn to cope with a wide array of customers and virtual situations to enhance their skills. Some of the more difficult ones would be servicing VIP clients, customers with allergies, and clients with complaints. VR also allows for international and multicultural learning. Different countries possess different dining behaviors and VR allows students to learn different dining behaviors for countries such as Japan, France or countries in the Middle East. This is especially important in preparing students for servicing guests of different nationalities and cultures. Moreover, VR also allows to act out different emergency situations like spilling drinks and guests having allergies. Students learn to deal with real-time sudden situations.

With its various advantages, VR technology has immense potential to revolutionise table service learning in culinary education institutions. By providing realistic simulations, interactive learning experiences, and flexible training opportunities, VR enhances students' engagement and mastery of essential skills. Additionally, VR can address the limitations of traditional learning methods, including high costs, accessibility barriers, and limited practice opportunities (Widiaty et al., 2022). As VR continues to evolve, integrating this technology into culinary education can significantly improve the quality of training for aspiring hospitality professionals (Brown et al., 2013). Future research and collaborations between educational institutions and the tech industry

are essential to optimising VR-based learning and ensuring that graduates are well-prepared to meet the demands of the modern food service industry (Fernando, 2024; 溶接学会編集委員会, 2022).

STATE OF THE ART

The application of virtual reality (VR) technology in culinary education in the field of table service learning is of the utmost importance to the advancement of this field.

A. Use of VR in table service training.

In their theoretical and practical research table service learning and table manners, authors of Customer Service and Table Service VR modules noted increased student engagement during VR customer service and table service training modules in relation to the other methods of learning. Under VR scenarios, students exercised service skills in role plays as service staff dealing with VIP guests, serving clients with special dietary needs, and servicing in other complex and unanticipated service situations. The VR technology promotes learning and retention of the service skills and other operational matters in the hospitality and restaurant industries. The research outcome indicates that students trained on VR exhibited better retention than students who learned on books and video instructions.

B. Benefits and queries of VR in culinary training

The implementation of VR technology in education has shown its potential in increasing application in VR technology in the culinary education field. For instance, the implementation of VR in training learners has shown trainers that learners use some of the VR to training modules to improve on their skills outside the school setting. To the trainers' surprise, learners reported that their motivation and engagement in the training tasks were due to the perceived rewards that VR offered. This motivation and engagement stemmed from the ability to scale the reward, the chances to customize elements of the simulation, the perceived consequences of failing to complete a simulation, and the level of interactivity that the simulation offered. VR has made culinary training more practical as it eliminates the constraints of real world application. VR technology and simulation also has the potential to expose trainees to real life culinary consequences in a risk-free and safe manner. This kind of training reduces the potential costs that stem from real world application. Even with these benefits, there are unique obstacles to the incorporation of VR technology into culinary education. The high cost of implementation remains a primary barrier, as VR hardware and supportive infrastructure can get costly and should be considered for the resources of many academic institutions. Furthermore, there is a lack of sufficient instructional materials aimed specifically at the training of server personnel which considerably hampers adoption. Another example is the limitations of VR technology with respect to physical interaction. Even though there are various VR simulations which can mimic the service environment during training, these simulations cannot mimic the physical sensations and the fine motor skills associated with real life service such as lifting and setting plates, and pouring drinks. Overcoming these barriers is crucial to VR adoption as talismatic elements in culinary education.

C. Implementation of case studies of Virtual Reality with education

Culinary Institute of America (CIA), Le Cordon Bleu, Swiss Hotel Management School (SHMS) and in Indonesia, Sekolah Tinggi Pariwisata Bandung (STPB), Universitas Pendidikan Indonesia (UPI), and Universitas Negeri Malang (UM) are among the first institutions to integrate VR cooking modules in their curriculum. An example is the University of West London, which incorporates VR in the hospitality and table service training to improve the understanding of customer service. VR is able to recreate many service scenarios, for example, guest special request servicing and emergency service responses. On the other hand, research conducted by Howard et al. (2024) highlights the importance of developing more interactive and responsive content in VR learning. This study suggests that VR-based learning can be more effective when combined with hands-on practice in real-world settings, providing students with a more comprehensive learning experience.

D. Future trends in the use of VR for table service education

Although the adoption of Virtual Reality (VR) in culinary education is still in its early stages, several emerging trends point to a promising future for its application in table service training. One such trend is the integration of VR with Artificial Intelligence (AI). This convergence enables more adaptive and personalized learning experiences, where the system can analyze student performance and provide real-time feedback, helping learners improve continuously and independently. Another significant development is the incorporation of haptic feedback technology, which allows users to experience physical sensations such as the texture of tableware or the weight of a plate. This innovation addresses one of the key limitations of VR—lack of tactile interaction—and moves the technology closer to replicating real-world conditions essential for mastering fine motor skills in service settings.

In addition, the evolution of cloud-based content development is making VR more accessible to educational institutions. Through cloud platforms, schools and training centres can easily access, share, and update VR modules without heavy investment in infrastructure or hardware. This democratisation of access supports broader implementation and collaboration across institutions. These trends indicate that VR becomes a transformative tool in table service education. By offering immersive, flexible, and interactive learning solutions, VR can effectively bridge the gap between theoretical knowledge and practical, real-world application, ultimately enhancing the readiness and professionalism of future hospitality practitioners.

METHOD

The research methodology employed in this research is Systematic Literature Review (SLR). This technique was chosen for its focus on the collecting, evaluating, and synthesising of studies in a streamlined and methodical manner. The SLR technique enables researchers to focus on existing studies and perform reviews on Virtual Reality (VR) in table manner training without leaving any gaps in the review and ensuring it is unbiased and replicable. This research SLR intends to inform a review of the literature in a rigorous and manageable fashion concerning VR and how it improves table service skills among culinary students. This piece of research does not only demonstrate the effectiveness of VR in educating students, but also uncover certain trends, gaps, and limitations in the existing literature. The use of VR in education and training for culinary and hospitality students is becoming more popular because of its ability to simulate real-life scenarios and provide students with interactivity and hands-on experiences which is sometimes lacking in traditional education techniques.

In this study, the literature was obtained from peer-reviewed and scientifically acclaimed journals published between 2018 and 2025 in order to maintain the significance and validity of the study. The purpose for including recent studies is to enhance the research with relevant, updated, and advanced information in regard to Virtual Reality in hospitality education. The underpinning primary sources for this study were from various databases distinguished for their depth and breadth of academic scholarship. Scopus, being one the biggest databases of abstracts and indexes, provides high-visibility research about educational technology and hospitality training. Similarly, WoS serves as an authoritative database of VR utilized in education, skilled training, and professional training. SpringerLink is one of the many sources of scholarly articles and conference proceedings in the fields of educational technology, VR, and teaching of cooking. Also, IEEE Xplore has a specialized collection of innovative technological books and articles, specifically about VR learning in teaching hospitality and service. Also, Google Scholar, being one of the first stop of many scholars, has a collection of open-access and peer-reviewed journals as well as indexing many scholarly articles. ScienceDirect is another database that assists this study with a collection trusted scientific articles, research papers, and case studies that facilitates with immersive learning in culinary and hospitality training. Finally, the DOAJ serves as an open and indiscriminate source of scholarly articles that is specifically helpful in VR Service Training Practitioner from an open-access perspective. Collectively, these databases ensure a thorough and diverse foundation of literature for the systematic review (see Figure 1).

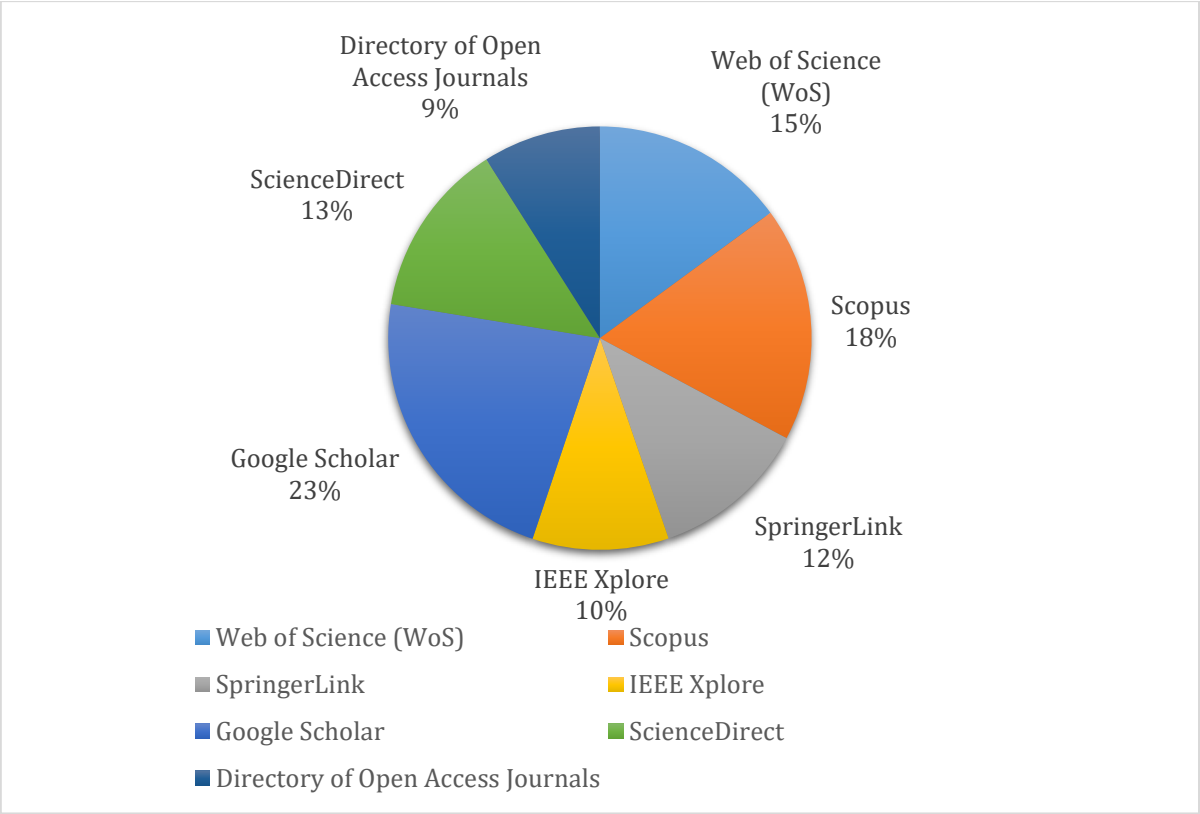

Figure 1. Reference sources based on their usage percentages

The selection of these reputable databases was driven by their wide coverage of peer-reviewed, high-impact journals that focus on VR technology, educational methodologies, and hospitality training. By leveraging these multiple data sources, this study ensures a diverse yet focused review of research findings, allowing for a balanced assessment of VR's role in improving table manner education.

This systematic approach to literature review enables a structured synthesis of findings, helping to establish best practices, challenges, and future directions for VR-based culinary training programs. The in-depth evaluation of existing research also aids in identifying key pedagogical strategies, assessing the effectiveness of VR-based simulations, and exploring their potential impact on student learning outcomes in hospitality education. The literature search was conducted using carefully designed keywords to obtain relevant results. Some of the keywords used in the search include displayed in the Figure 2.

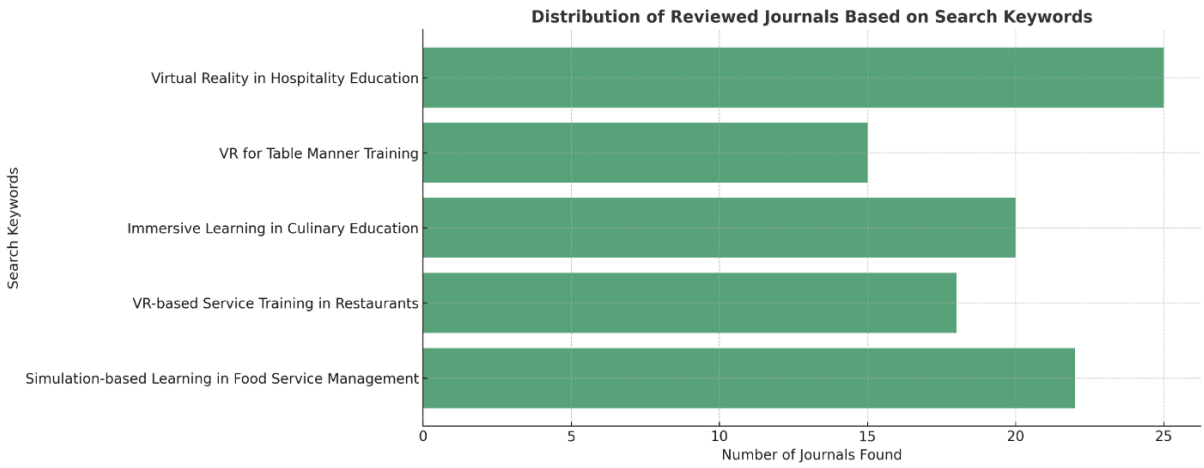

Figure 2. Distribution of reviewed journal based on search keyword

Inclusion and exclusion criteria

In a systematic review, inclusion and exclusion criteria are used to select studies that align with the research objectives. Inclusion criteria define the key characteristics required for a study to be considered—such as topic relevance, use of VR in culinary education, and publication quality—while exclusion criteria eliminate studies that lack methodological rigor, fall outside the scope, or are not accessible. These criteria ensure the review is focused, reliable, and based on high-quality evidence (see Table 1).

Table 1. Inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
Publication year	2018-2025	Before 2018
Language	English, Indonesian	Non-English, Non-Indonesian
Document type	Peer-reviewed journals, conference papers	Non-peer-reviewed articles, opinion pieces
Study focus	VR in table service or hospitality education	VR in unrelated fields
Availability	Full-text access	Abstract-only publications

RESULT

The authors retained 50 studies obtained through a systematic review. After a rigorous selection process using inclusion and exclusion criteria, 13 relevant articles on Virtual Reality (VR) in table-manner training have been identified. These articles cover various aspects of VR implementation, including learning effectiveness, immersive experiences, interactivity impact, and challenges in adopting technology in culinary education. The analysis of these 13 articles is detailed as follows.

1. Distribution of publication years

The selected articles were published between 2019 and 2024, reflecting the latest trends in the use of VR for table service training. Most of the articles were published in the last three years (2021–2024), indicating growing academic interest in the application of VR in culinary and hospitality education, where three are from 2019, two are from 2020, four are from 2021, two are from 2022, one is from 2023, and one is from 2024. The high number of recent publications suggests that VR is increasingly being accepted and researched as an innovative method for restaurant service training.

2. Focus and contribution of articles to table service learning

Each analysed article presents a unique approach and contribution in examining the role of VR in culinary education. The topics of relevant articles from 2018 to 2025 to support this study are in Table 1.

3. Analysis of findings from the articles

From the analysed articles, several key findings are summarised as follows.

a) **Effectiveness of VR in table service learning**

VR enhances service skills by providing a more realistic, interactive, and immersive experience compared to traditional learning methods (Fernando, 2024; Makransky & Petersen, 2021).

Several studies indicate that VR helps in developing etiquette, understanding service procedures, and customer interaction more effectively than conventional culinary lab training (Jung et al., 2020; Lee & Tao, 2022).

b) **VR as a solution to conventional learning challenges**

- Overcoming facility limitations**:** Educational institutions with limited facilities can utilize VR to provide realistic simulation experiences (Huang et al., 2019; Lu et al., 2023).
- Flexibility and accessibility**:** VR allows students to learn from anywhere, without depending on expensive and limited physical facilities (Kim et al., 2021; Lee & Tao, 2022; Lu et al., 2023).

c) **Challenges in implementing VR in culinary education**

- Initial costs and infrastructural constraints: Some researchers note that virtual reality still demands considerable upfront investment, both in purchasing the hardware and in creating the requisite educational material. (Brown et al., 2013; Kim et al., 2021).
- Preparedness of instructors: Not all teachers possess the required competencies and readiness to implement virtual reality in the teaching process. (Adeniran et al., 2010; Zhang et al., 2021).
- Gaps in social engagement: While virtual reality can imitate customer experiences, some scholars argue that actual social contact, in customer service training, still has more to offer.

Table 2. Relevant Topics with inclusion and exclusion criteria's

No	Author(s)	Year	Article topic
1	Makransky et al.	2021	A study of how immersion and interactivity drive VR learning
2	Fernando	2024	Culinary learning using virtual reality based on gamification method
3	Jung & Dieck	2019	Moderating role of long-term orientation on augmented reality adoption
4	Wei et al.	2022	The effects of information technology capability and knowledge base on digital innovation: the moderating role of institutional environments
5	Jiang, et al.	2021	Augmented reality shopping application usage: The influence of attitude, value, and characteristics of innovation
6	Lee & Park	2020	Reconceptualization of the context in language learning with a location-based AR app
7	Huang et al.	2019	Augmented Versus Virtual Reality in Education: An Exploratory Study Examining Science Knowledge Retention When Using Augmented Reality/Virtual Reality Mobile Applications
8	Kim et al.	2021	Do information and service quality affect perceived privacy protection, satisfaction, and loyalty? Evidence from a Chinese O2O-based mobile shopping application
9	Choi & Kim	2020	Application and effects of VR-based biology class reflecting characteristics of virtual reality
10	Lu et al.	2023	The application of fully immersive virtual reality on reminiscence interventions for older adults: scoping review
11	Lee & Kim	2019	Potential of augmented reality and virtual reality technologies to promote wellbeing in older adults
12	Zhang et al.	2021	Virtual reality simulation in training endoscopic skills: a systematic review
13	Brown et al.	2022	Immersive virtual reality (VR) for digital media making: transmediation is key

d) **Implications of findings for culinary and hospitality education**

- Practical implications**:** This research indicates that VR can be used as an alternative training method for restaurant service in more flexible, efficient, and immersive way.
- Implications for theory: This supports the theory which states that classed which involves active and rich interactivity enhance the learners' skills to a great extent.

For the purpose of effective use of VR in table service training, a partnership between schools, software and hardware developers, and the hospitality and restaurant business is needed.

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DISCUSSION

This section delves deeper into the main findings from the analysis of 13 reviewed articles and relates them to relevant theories in the fields of education, technology, and hospitality.

1. Virtual reality as a solution in table service learning

a. Advantages of VR in table service learning simulations

Based on the analysis, Virtual Reality (VR) offers several advantages in simulating table service learning compared to conventional methods. Grounded in Experiential Learning Theory (Kolb, 2014), which emphasises that learning through direct experience is more effective than purely theoretical approaches, VR provides an immersive and interactive environment that aligns with these principles by enabling students to engage actively in realistic service scenarios. Empirical studies support this claim; for instance, (Makransky & Petersen, 2021) found that VR accelerates the development of practical skills more effectively than traditional training methods. Furthermore, VR reported has a role in helping students grasp international service standards prevalent in the hospitality industry, while (Jung et al, 2020) demonstrated its effectiveness in enhancing communication skills and customer interaction across diverse restaurant service contexts. Additionally, Cognitive Load Theory by (Sweller, 2020) offered insight into VR's educational benefits by suggesting that the simultaneous delivery of information through visual, auditory, and kinaesthetic channels can reduce cognitive load. This multimodal presentation facilitates easier comprehension and retention of complex service procedures, making VR a powerful tool for optimising learning outcomes in table service education.

b. Effectiveness of VR compared to conventional methods

The analysis highlights that Virtual Reality (VR) is more effective than traditional methods in teaching table service skills. Research by (Lee et al. (2021); Zhang et al. (2021) shows that VR enhances both knowledge retention and practical skills more effectively than theory-based instruction or limited hands-on practice in laboratory settings. Traditional learning methods often face challenges such as limited facilities that do not accurately replicate real restaurant environments, high costs associated with food, equipment, and professional trainers, and a lack of diverse, realistic customer service scenarios for students to practice.

In contrast, VR allows students to immerse themselves in a variety of restaurant service situations within a virtual environment. These include serving VIP guests in fine dining settings with strict service protocols, managing customers with special needs such as food allergies or specific dietary requests, and interacting with clients from different cultural backgrounds to understand international service etiquette. These outcomes support Constructivism Theory (Nucci et al., 2014), which posits that effective learning happens when students actively engage and interact with their learning environment, making VR a powerful tool to bridge theory and practice in culinary education.

2. Challenges in implementing VR in table service learning

Despite its advantages, implementing VR in table service learning also faces several challenges, as revealed in the reviewed studies.

a. Cost and technological infrastructure

The analysis underscores that Virtual Reality (VR) is more effective than traditional methods in table service learning. Research by (Lee & Tao (2022) and Zhang et al. (2021) demonstrates that VR significantly enhances both knowledge retention and practical skills compared to theory-based instruction or limited laboratory practice. Traditional methods often face notable challenges, including restricted facilities that rarely replicate real restaurant environments, high costs associated with food, equipment, and professional trainers, as well as a lack of diverse customer service scenarios for hands-on practice. In contrast, VR enables students to immerse themselves in a variety of restaurant service situations within a virtual setting. These scenarios

include serving VIP guests in fine dining establishments while adhering to strict protocols, managing customers with special needs such as food allergies or specific dietary preferences, and interacting with clients from diverse cultural backgrounds to better understand international service etiquette. These insights resonate with Constructivism Theory (Nucci et al., 2014), which highlights that meaningful learning occurs when students actively engage and interact with their learning environment, making VR a highly suitable tool for enhancing table service education.

b. Readiness of users and educators in using VR

Another significant challenge as reported by Zhang et al. (2021) concerns the readiness of both educators and students to use VR technology effectively. Students with limited exposure to digital tools may find it challenging to adapt to VR systems, while educators accustomed to traditional teaching methods often require additional training to integrate VR into their curricula successfully. This issue can influence the acceptance and effective implementation of VR in educational settings. Based on the Technology Acceptance Model (TAM) (Hart and Sutcliffe 2019), the adoption of new technology depends primarily on two factors: perceived usefulness—the degree to which users believe the technology enhances learning quality—and perceived ease of use—how effortlessly users can access and operate the system. These factors are critical for fostering positive attitudes toward VR-based learning.

Theoretically, this study aligns with Experiential Learning Theory (Kolb, 2014), which emphasises that direct experience significantly improves skill acquisition and knowledge retention. VR offers an interactive and immersive environment where students can practice table service techniques in realistic restaurant settings without the risks associated with real-world mistakes. This approach also supports Constructivism Theory (Vygotsky, 1978), which underlines the importance of meaningful engagement with the learning environment. Through VR simulations, students actively participate in diverse service scenarios, enhancing their ability to apply theoretical knowledge practically.

Moreover, this research contributes to the Blended Learning Model (Su, 2019) by illustrating how integrating VR with conventional hands-on training enriches the learning experience. While VR effectively simulates a variety of table service contexts, physical practice remains indispensable for mastering fine motor skills such as utensil handling and precise serving techniques. The findings also resonate with (Davis,1989) Technology Acceptance Model, emphasizing that students' willingness to adopt VR depends on their perceptions of its usefulness and ease of use. By addressing challenges related to cost, accessibility, and user readiness, VR can complement traditional hospitality education, offering a flexible, scalable, and engaging learning approach that prepares future culinary professionals for real-world demands.

CONCLUSION

The chosen published articles span between the years 2019 and 2024, illustrating the current practices of using VR technology for table service training. Virtual Reality (VR) technology is a contemporary and functional application for training learners in table service in the culinary and hospitality faculties. VR engages learners in a participatory and simulated 'real world' environment, consistent with the principles of Learning by Doing. More than the conventional instruction approach, this technology improves practical skills, comprehension of international service standards, and communication and customer dealings. Moreover, this research indicated that VR can address some of the limitations of traditional learning such as, inadequate training equipment, expensive physical training, and lack of diverse customer service scenarios. VR enables learners to participate in a range of simulated restaurant scenarios, including fine dining, where they can illustrate restaurant service skills. To investigate the sustained performance of learners in the hospitality industry, more work needs to be conducted in relation to developing VR to evaluate the Table Service. Longitudinal research can evaluate the retention of skills, professional adaptability, and customer satisfaction to assess the success of VR in the practice world. Moreover, educational VR technology needs research on techniques for practical and economical deployment, particularly in the developing world, in order to maintain equity and accessibility in educational VR systems. These suggestions would allow future research to focus on the development and enhancement of digital tools for education in the field of hospitality.

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AI Declaration Statement

The authors used OpenAI's ChatGPT to edit and refine the wording of the Introduction, Method, and Discussion section. All outputs were reviewed and verified by the authors.

Author contributions

The authors contributed to the study's conception, design, data analysis, interpretation, and discussion of results. They reviewed and approved the final manuscript.

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Conflict of interest

No potential conflict of interest.

Data availability statement

All data are available from the author.

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