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From design to value: How virtual field trip design creates presence and shapes perceived learning value in tourism and hospitality education

Ali Abdallah

Al Rayyan International University College, Doha, Qatar.
Email: aabdallah@ariu.edu.qa

Abstract

Virtual field trips have transitioned from emergency contingency measures to established pedagogical options in higher education, yet their educational value remains highly variable. This article develops and empirically supports a design-presence-value pathway that explains why some virtual field trips are perceived as meaningful learning experiences while others are experienced as passive and forgettable. Drawing on qualitative focus group data collected from tourism and hospitality students (N = 42) across three higher education institutions, the study synthesises student accounts into an integrative model linking design features to perceived presence and perceived learning value. The analysis reveals that learning value is strengthened when virtual field trips are designed to create presence through high system quality, purposeful instructional organisation, and socially enabling interaction. Students describe presence as feeling involved, attentive, and able to imagine being at the site, whereas low presence is associated with poor audio-visual quality, monotonous delivery, weak structure, and limited opportunity for interaction. The study also identifies distinctive strengths of virtual field trips, including flexibility, accessibility to remote or restricted sites, and replayability. A practical set of design principles is proposed that leverages these affordances while addressing common deficits, particularly the loss of social and networking opportunities. The article offers actionable guidance for educators designing or selecting virtual field trips and provides a theoretically grounded explanation of how instructional design choices translate into student-perceived learning value.

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1. Introduction

Field trips are a cornerstone of tourism and hospitality education, serving as a bridge between theoretical concepts learned in classrooms and the practical realities of service environments, destination management, and professional operations (Ritchie, Chien, & Sharifpour, 2017; Stainfield, Fisher, Ford, & Solem, 2000). Traditional site visits afford students the opportunity for direct observation, contextual understanding, sensory engagement, and professional socialisation that cannot be easily replicated through conventional instruction (Scarce, 1997). Because the tourism and hospitality sector is fundamentally experiential, relying on the interplay of physical spaces, interpersonal service, and atmosphere, field-based learning occupies a uniquely important position in programme design and delivery. As higher education increasingly embraces online and blended delivery models, virtual field trips (VFTs) have emerged as a viable means to replicate, complement, or replace physical visits (Klippel et al., 2019; Spicer & Stratford, 2001).

The rapid adoption of VFTs was accelerated by the COVID-19 pandemic, which forced institutions worldwide to seek remote alternatives to experiential learning activities (Bower, 2017; Dwivedi et al., 2020). Even as pandemic restrictions eased, many programmes retained VFTs for their logistical convenience, cost-effectiveness, and ability to reach geographically dispersed student populations. However, the educational value of VFTs remains inconsistent and poorly understood. Students frequently describe virtual trips as convenient and accessible, but they also report that virtual experiences often feel less engaging, less memorable, and less socially valuable than in-person visits (Karabulut-Ilgu, Jaramillo Cherrez, & Jahren, 2018; M. Lee, 2009). This inconsistency raises important questions for programme leaders and educators who must decide when and how to deploy virtual formats without sacrificing pedagogical quality or undermining the experiential character of their programmes.

A common institutional response to the perceived shortcomings of VFTs has been to focus on technological enhancement, investing in better cameras, higher resolution video, or more immersive formats such as 360-degree video or virtual reality headsets. While technology is undeniably important, it does not fully explain why some VFTs succeed educationally while others fail to produce meaningful learning. Students often judge the value of a VFT not through its technical specifications but through the overall quality of the experience: whether the tour sustains their attention, whether it feels purposeful and relevant to their studies, whether the guide is engaging and knowledgeable, and whether there are meaningful opportunities for interaction and participation (Tuthill & Klemm, 2002). This observation points to a more fundamental and practically useful question: how do design choices shape the student experience, and how does that experience shape perceived learning value?

This article positions presence as the central mechanism connecting design to learning value. Drawing from the literature on mediated environments and educational technology, presence is defined as the degree to which students feel psychologically involved in and connected to the site during a virtual visit (Lombard & Ditton, 1997; Witmer & Singer, 1998). In practical terms, presence captures the difference between passively watching a tour on a screen and feeling as though one is genuinely part of the visit. When presence is strong, students report heightened engagement, sustained attention, and greater perceived learning (Makransky & Lilleholt, 2018). When presence is weak, students disengage more easily and evaluate the experience as passive viewing with limited educational benefit.

This study makes three contributions to the literature on virtual experiential learning. First, it provides qualitative evidence from tourism and hospitality students across multiple institutional contexts, offering rich and detailed insight into how VFT design features are experienced and evaluated by learners. Second, it proposes an integrative design-presence-value model that clarifies the mechanisms through which VFT design translates into perceived learning value, moving beyond the common approach of treating individual design features as isolated predictors. Third, it derives a set of actionable design principles that educators can apply when selecting, commissioning, or creating VFTs for their programmes. These principles are grounded in student experience and aligned with established theoretical frameworks in educational technology and instructional design.

1.1. Aim and Research Questions

The aim of this study is to explain how virtual field trip design creates presence and how presence shapes perceived learning value in tourism and hospitality education. The following research questions guide the inquiry.

RQ1. Which virtual field trip design features do students associate with stronger or weaker presence?

RQ2. How does perceived presence influence students' judgement of learning value?

RQ3. What design principles can educators apply to increase presence and learning value in virtual field trips?

2. Literature Review and Conceptual Framing

2.1. Virtual Field Trips as Technology-Mediated Experiential Learning

Virtual field trips are a form of technology-mediated experiential learning that aims to approximate the pedagogical benefits of place-based education (Kolb, 1984; Stainfield et al., 2000). They are deployed across

numerous disciplines, including geography, environmental science, archaeology, and tourism and hospitality, to provide exposure to sites, operations, and professional environments that may otherwise be inaccessible due to cost, distance, safety constraints, or limited capacity (Klippel et al., 2019; Spicer & Stratford, 2001). Unlike conventional lecture-based instruction, field trips are inherently experiential in nature; their effectiveness depends not merely on information delivery but on students' ability to sustain attention, interpret environments, connect observations to theoretical concepts, and engage in reflective meaning-making (Kolb, 1984; Moon, 2004).

In tourism and hospitality education, the need for contextual, situated learning is particularly pronounced because service settings are relational, sensory-rich, and operationally complex (Ritchie et al., 2017; Wang et al., 2019). Students benefit from experiencing the atmosphere of a hotel lobby, the pace of a restaurant kitchen, or the spatial layout of a heritage site in ways that textbooks and case studies cannot fully convey. VFTs attempt to mediate these experiences through video, live-streaming, interactive tours, or immersive technologies such as virtual reality. However, the extent to which they succeed in replicating the learning benefits of physical visits depends critically on the design decisions made before, during, and after the virtual visit (Lei & So, 2021; Tuthill & Klemm, 2002).

The literature on experiential learning theory emphasises that experience alone is insufficient for learning; it must be supported by structured reflection, active experimentation, and conceptual integration (Kolb, 1984). Kolb's experiential learning cycle, comprising concrete experience, reflective observation, abstract conceptualisation, and active experimentation, provides a well-established framework for understanding how learners derive meaning from direct encounters with environments and phenomena. This principle has direct implications for VFT design. A VFT that merely streams footage of a site without embedding prompts for reflection, links to curriculum content, or opportunities for student interaction may fail to activate the experiential learning cycle, regardless of how technically sophisticated the delivery may be (Roberts, Andreassen, O'Donnell, O'Neill, & Neill, 2018). Thus, the design of the learning experience, rather than the technology alone, determines its educational potential.

Recent research has drawn attention to the role of learner engagement strategies in virtual experiential contexts. Han (2021) argues that structured pre-visit briefings, observational guides, and post-visit debriefing activities significantly improve student learning outcomes from virtual tours by embedding the virtual experience within a broader cycle of preparation, engagement, and reflection. Similarly, Caliskan (2022) found that VFTs with embedded assessment tasks produced higher student satisfaction and stronger knowledge retention compared to passive viewing formats that did not require active student participation. These findings reinforce the argument that VFT design must be treated as a deliberate instructional process rather than simply a matter of selecting and broadcasting site footage to remote learners.

2.2. Presence as the Mediating Mechanism

Presence has been widely studied in the fields of human-computer interaction, virtual reality, and educational technology as a construct that explains individual differences in user experience within mediated environments (Lombard & Ditton, 1997; Witmer & Singer, 1998). In the context of virtual learning environments, presence refers to the subjective sensation of being there, that is, the degree to which a user feels mentally located in the mediated environment rather than in their physical surroundings (Slater & Wilbur, 1997). The concept has been operationalised in various ways, including spatial presence, which refers to the sense of being physically located in the virtual environment, social presence, which captures the sense of being with others, and self-presence, which describes the sense of one's virtual self within the environment (Lee, 2004).

Educational researchers have linked presence to a range of positive learning outcomes, including sustained attention, deeper cognitive engagement, higher learner satisfaction, and improved knowledge retention (Makransky & Lilleholt, 2018; Mikropoulos & Natsis, 2011). For VFTs specifically, presence is conceptualised as the degree to which students feel that they are mentally at the visited site, that they can imagine the environment around them, and that they are actively participating in the visit rather than merely watching a recording. Importantly, the research literature demonstrates that presence does not require advanced or expensive hardware; rather, it is shaped by the design and overall quality of the experience (Wirth et al., 2007). A well-structured, live-streamed tour with an engaging guide and opportunities for student interaction can create stronger presence than a technically sophisticated but pedagogically barren 360-degree video that offers no guidance or participatory elements.

Presence is a theoretically useful mechanism for the present study because it bridges technical features and pedagogical features with educational outcomes. Rather than treating system quality and instructional design as independent predictors of learning, a presence-based framework positions them as antecedents that jointly create the psychological conditions necessary for meaningful learning to occur (Lee, 2004). This approach aligns with DeLone and McLean (2003) Information Systems Success Model, which posits that system quality, information quality, and service quality interact to influence user satisfaction and net benefit. In the educational domain, presence captures the experiential dimension of this interaction, providing a

construct that is sensitive to both technical and pedagogical design decisions and that can explain why technically identical platforms may produce very different learning outcomes depending on how they are used.

Moreover, the concept of presence connects to the broader literature on flow and engagement in digital learning environments. Csikszentmihalyi (1990) theory of flow suggests that optimal experience occurs when individuals are fully absorbed in an activity that balances challenge with skill. In VFT contexts, presence can be understood as a precondition for flow: when students feel psychologically present in the virtual environment, they are more likely to enter a state of focused attention and deeply engaged learning. Conversely, when presence is disrupted by technical problems, poor instructional design, or a lack of social interaction, the conditions for flow are undermined and students are more likely to disengage. This theoretical linkage further supports the positioning of presence as a central mediating variable in the design-to-value pathway examined in this study.

2.3. Design Features as Antecedents of Presence

The literature on technology-enhanced learning consistently identifies three broad domains of design that influence learner experience: system quality, instructional design, and social interaction (DeLone & McLean, 2003; Garrison, Anderson, & Archer, 1999). Each domain has been linked to presence in various mediated learning contexts, and each plays a distinct role in shaping the conditions under which learners experience virtual environments as meaningful and educationally valuable. The following subsections review the evidence for each domain.

System quality and immersion. System quality encompasses the technical attributes of the delivery platform, including audio-visual clarity, connection stability, interface usability, and visual realism (DeLone & McLean, 2003). In VFT contexts, higher system quality reduces cognitive friction and enables students to sustain attention on the content rather than the medium itself (Wirth et al., 2007). Immersion, a closely related concept, refers to the technological capacity of the system to create a surrounding, realistic sensory experience that envelops the learner (Slater & Wilbur, 1997). Formats such as 360-degree video or interactive walkthroughs can enhance immersion by providing spatial depth and user agency, allowing learners to explore the environment at their own pace and from their own perspective. However, research demonstrates that immersion alone does not guarantee presence if instructional support is absent (Makransky & Petersen, 2021). Parong and Mayer (2018) found that immersive VR environments can actually impair learning when they produce extraneous cognitive load without adequate instructional scaffolding, reinforcing the principle that technical sophistication must be paired with thoughtful pedagogical design to produce positive educational outcomes.

Instructional organisation. Instructional organisation refers to the pedagogical structuring of the VFT, including the clarity of learning objectives, the relevance of content to the curriculum, the pacing and sequencing of information, and the role of the guide or narrator in directing attention and supporting understanding (Garrison et al., 1999; Mayer, 2009). Research on multimedia learning demonstrates that learners benefit from segmented presentation of complex material, explicit signalling of key content, and careful alignment between visual and verbal channels (Mayer, 2009). Mayer's segmenting principle holds that complex material presented in learner-paced segments produces better learning than a continuous unbroken presentation of the same material, because segmentation allows learners to process each portion before moving to the next. In VFT contexts, the guide's delivery style, use of real-world examples and narratives, and ability to direct attention to specific features or operations have been identified as critical factors in maintaining learner engagement (Tuthill & Klemm, 2002). The coherence principle further suggests that extraneous or irrelevant material should be excluded so that learners can focus cognitive resources on essential content, a recommendation with clear relevance for VFT scripting, narration, and editorial decision-making.

Social interaction. Social interaction design encompasses the opportunities built into a VFT for live questioning, peer discussion, collaborative tasks, and engagement with industry representatives or site hosts (Garrison et al., 1999; Kreijns, Kirschner, & Jochems, 2003). The Community of Inquiry (CoI) framework, one of the most widely cited models in online education research, identifies three overlapping presences as essential to meaningful educational experience in online environments: cognitive presence, social presence, and teaching presence (Garrison et al., 1999). Social presence, defined as the ability of participants to project themselves as real persons and to feel connected to others in the learning community, is particularly relevant to VFTs because the absence of face-to-face contact can significantly diminish the relational and participatory dimensions of the field trip experience. When social interaction is not deliberately designed into a VFT, the experience risks becoming passive content consumption rather than the active, participatory experiential learning that field trips are intended to provide (Kreijns et al., 2003). Research by Lowenthal and Dunlap (2020) further underscores that social presence must be intentionally cultivated through deliberate design choices rather than assumed to emerge naturally from the digital platform or technology being used.

This article integrates these three domains into a unified explanatory pathway: design features shape perceived presence, and perceived presence in turn shapes perceived learning value. This framework moves beyond the common approach of treating design features as direct and independent predictors of learning

outcomes, offering instead a more nuanced and theoretically grounded explanation of the mechanisms through which virtual field trip design translates into educational value.

3. Methodology

3.1. Research Design

A qualitative research design was adopted to capture the ways in which students interpret, evaluate, and ascribe meaning to their VFT experiences. Qualitative methods are particularly suited to research questions that seek to understand how learners experience phenomena in context, rather than measuring the magnitude of predetermined variables (Braun & Clarke, 2006; Creswell & Poth, 2018). Focus groups were selected as the primary data collection method because they encourage interactive discussion, reveal shared and contested meanings, and enable participants to build upon one another's contributions, yielding richer and more layered accounts of collective experience than individual interviews alone (Krueger & Casey, 2015). The interactive nature of focus groups was considered especially appropriate for this study, as students were able to compare, contrast, and elaborate on their VFT experiences in dialogue with peers who had shared similar learning contexts and could offer corroborating or contrasting perspectives.

3.2. Participants and Context

A total of 42 tourism and hospitality students participated in the study. Participants were drawn from three higher education institutions offering programmes in tourism management, hospitality operations, and events management. Purposive sampling was employed to ensure that all participants had direct experience of at least one physical field trip, one virtual field trip, or both, thereby enabling them to draw meaningful comparative reflections on the strengths and limitations of each format (Patton, 2015). Participants ranged from second-year undergraduate to postgraduate level and included both full-time and part-time students. The demographic composition included 24 female and 18 male students, with ages ranging from 20 to 34 years. The three institutional contexts were selected to maximise variability in delivery practices, technological infrastructure, programme orientation, and student demographics, thereby strengthening the transferability of findings across different settings and educational contexts. Institution A contributed 15 participants across 3 focus groups, with students drawn from tourism management programmes at undergraduate and postgraduate levels. Institution B contributed 14 participants across 2 focus groups, with undergraduate students from hospitality operations programmes. Institution C contributed 13 participants across 2 focus groups, with students from events management programmes at both undergraduate and postgraduate levels.

3.3. Data Collection

Seven focus groups were conducted in total, each comprising five to seven participants. Sessions were facilitated using a semi-structured interview guide organised around four thematic areas: (a) experiences and perceptions of physical field trips, (b) experiences and perceptions of virtual field trips, (c) factors that enhanced or diminished engagement and learning during VFTs, and (d) suggestions for improving virtual delivery in the future. The facilitator used open-ended prompts and follow-up probes to encourage elaboration and to explore emergent themes as they arose during discussion. Illustrative prompt questions included: "What made you feel involved during the virtual trip?", "At what point, if any, did you lose interest or find your attention drifting?", and "What would you change to make the virtual visit feel more like a real trip?" Sessions lasted between 55 and 80 minutes, were audio-recorded with the explicit consent of all participants, and were transcribed verbatim for subsequent analysis. A total of approximately eight hours of recorded discussion was generated across all seven sessions, providing a substantial body of qualitative data for thematic analysis.

3.4. Data Analysis

The analysis followed the six-phase thematic analysis procedure outlined by Braun and Clarke (2006). Transcripts were first read in full on multiple occasions to achieve thorough familiarisation with the data. Initial codes were then generated inductively from the transcripts, capturing discrete units of meaning related to design features, experience quality, and perceived learning value. For example, early codes included "audio clarity," "guide enthusiasm," "inability to ask questions," "feeling like watching TV," "wanting to look around," and "not knowing the purpose." Codes were then grouped into candidate themes, which were reviewed against the coded extracts and the full dataset for internal coherence and distinctiveness. Themes were subsequently refined through constant comparison across focus groups and across institutions, with attention given to both convergent and divergent perspectives (Corbin & Strauss, 2015). For the purposes of this article, the refined themes were synthesised into an explanatory model positioning presence as the central mechanism linking design features to perceived learning value. To enhance analytical rigour and reduce the risk of researcher bias, an independent peer review of the coding framework and thematic structure was conducted by a colleague with expertise in qualitative research methodology.

3.5. Ethical Considerations

Ethical approval was obtained from the lead institution's ethics committee prior to data collection. Participation was entirely voluntary. All participants received a detailed information sheet explaining the purpose and procedures of the study, provided written informed consent, and were assured of confidentiality, anonymity in all published reporting, and the unrestricted right to withdraw at any time without consequence. Pseudonymous participant codes are used throughout this article when presenting direct quotations.

4. Findings: A Design-Presence-Learning Value Pathway

Students' discussions consistently connected perceived learning value to whether the VFT succeeded in creating a sense of psychological involvement and sustained attention. Three design domains were repeatedly referenced as drivers of presence, forming a coherent pathway from design features through presence to perceived learning value. The following subsections present findings organised by design domain, supported by illustrative participant quotations drawn from across all three institutional contexts.

4.1. Domain 1: System Quality and Immersion Create the Conditions for Presence

Students described system quality as foundational to their experience of VFTs. Stronger presence was reported when audio and video were clear, when access to the platform was stable, and when the viewing experience was smooth and uninterrupted by buffering or delays. When visual and sound quality were high, students found it easier to concentrate on the content, follow the tour narrative, and begin to imagine themselves in the environment being visited.

"When the video is really clear and the sound is good, you actually start to feel like you are there. You forget you are looking at a screen for a moment." (Participant 7, Institution B)

"It makes a difference when you can hear everything properly and the picture is sharp. It feels more serious, more like a real visit and less like something thrown together at the last minute." (Participant 24, Institution C)

Low system quality disrupted presence by fragmenting attention and increasing frustration. Common problems cited by students included unstable internet connections, poor audio quality, low-resolution video, and limited ability to control the viewing angle or perspective. Students reported that these technical shortcomings made the experience feel less real and more akin to watching a low-effort video recording rather than participating in a structured educational visit.

"If it keeps freezing or the sound cuts out, you just lose interest. It does not feel like a trip anymore. It is just a bad video." (Participant 3, Institution A)

Immersion was described as the capacity of the experience to feel spatially realistic and enveloping. Students indicated that more immersive formats, such as 360-degree tours or interactive walkthroughs, could strengthen presence by providing depth, spatial awareness, and a sense of agency over their viewing experience. Several students drew comparisons with virtual museum tours and Google Street View as examples of how interactivity enhanced their sense of being in a place rather than just looking at a picture of it. However, students also noted that immersion alone was insufficient if the tour was poorly structured, lacked a clear purpose, or offered no opportunity for human interaction.

"The 360 thing is cool because you can look around, but if nobody is explaining anything and there is nothing to do, you get bored just as fast." (Participant 15, Institution C)

"Having the ability to explore is nice, but you still need someone to tell you what you are looking at and why it matters for what we are studying." (Participant 33, Institution A)

4.2. Domain 2: Instructional Organisation Creates Purpose and Sustains Attention

Students strongly associated learning value with purposeful pedagogical organisation. They wanted VFTs to be clearly linked to module content, supported by explicit learning objectives, and structured in a way that directed their attention to specific features, operations, or concepts. Presence increased when the tour had a clear narrative arc and when key learning points were signposted throughout the session so that students understood what they were expected to observe and learn.

"It is much better when you know what you are supposed to be looking for. If they just show you around with no real point, your mind wanders." (Participant 12, Institution C)

"When the lecturer told us beforehand what to pay attention to and gave us questions to think about during the tour, I was much more focused. Without that, I would have just been watching." (Participant 26, Institution B)

Students explained that the threshold for disengagement is considerably lower in online environments compared to face-to-face settings. If a session is slow, unclear, or repetitive, students are more likely to disengage, mentally or physically, by switching to other browser tabs, checking their phones, or engaging in other tasks. In this context, deliberate and thoughtful structure becomes essential for sustaining presence over the duration of the VFT. Students responded positively to short segments, clear transitions between topics, and observational prompts that guided active viewing rather than encouraging passive consumption of content.

The role of the tour guide was identified by students as absolutely central to maintaining presence and engagement. Students repeatedly described how the guide's delivery style shaped their level of attention and involvement. Engaging guides who employed vivid explanations, storytelling, real-world examples, humour, and direct questions addressed to students helped participants remain psychologically involved throughout the tour. Conversely, monotonous or heavily scripted delivery reduced presence significantly, even when the visual content was of high quality.

"The guide makes or breaks it. If they are passionate and they ask you things, it is completely different from someone just reading a script." (Participant 19, Institution B)

"One of our virtual tours had a hotel manager who was really enthusiastic. He kept asking what we thought and pointing things out. That one actually felt like we were learning something useful." (Participant 31, Institution A)

"We had one tour where the person presenting was clearly just reading off a page. The video quality was actually fine, but it did not matter because we all tuned out after about ten minutes." (Participant 14, Institution C)

4.3. Domain 3: Social Interaction Is the Most Visible Gap in Virtual Field Trips

Students frequently identified socialisation and networking as among the most significant and valued strengths of physical field trips. They described peer bonding during travel, informal conversations at sites, spontaneous question-and-answer exchanges with site staff, and direct interaction with industry professionals as integral to the overall learning experience. These social dimensions were seen as contributing not only to academic learning but also to professional development, relationship building, and a sense of belonging within their student cohort. VFTs were consistently perceived as weaker in this regard, primarily because social interaction was not deliberately designed into the virtual experience.

"On a real trip, you are talking to people, asking questions, getting a feel for the place. On a virtual one, you are just sitting there watching by yourself." (Participant 28, Institution A)

"The social part is what you remember most from a real trip. You make friends, you network, you have conversations that stick with you. On a virtual trip, there is none of that. You are just alone at your desk." (Participant 9, Institution B)

"Even just chatting with classmates on the bus or during lunch at a site visit, you learn things. You discuss what you saw, you share opinions. That whole layer is missing from virtual trips." (Participant 37, Institution C)

However, where VFTs included live questioning, synchronous discussion, or structured peer tasks, students reported notably higher levels of involvement and a stronger sense of participating in a shared experience. The ability to ask questions and receive immediate responses from guides or industry hosts made the experience feel participatory rather than purely observational. Several students described how even simple interactive features, such as a live chat function, a polling question, or an invitation for students to unmute and speak, shifted their perception of the experience from merely watching to genuinely visiting.

"When they let us ask questions live and the hotel manager answered, it felt real. You felt like you were actually there meeting them." (Participant 35, Institution C)

"Even just being able to type a question in the chat made a difference. It meant I was thinking about what I was seeing instead of just zoning out." (Participant 11, Institution B)

When these interactive features were absent, students consistently described the experience as passive and educationally thin. The phrase "watching, not visiting" recurred across multiple focus groups and institutions, capturing the widespread sense that a VFT without social elements fails to replicate the experiential and participatory character of a physical field trip.

4.4. Presence Shapes Perceived Learning Value

Students consistently employed presence-related language when explaining what made a VFT valuable or worthwhile. Higher presence was described as feeling engaged, attentive, and psychologically connected to the visited site. These experiences were associated with better conceptual understanding, stronger recall of specific details and observations, and clearer applicability to module topics and assessment tasks. Low presence, by contrast, was associated with boredom, easy distraction, and a pervasive sense that the trip offered limited educational benefit.

"If I felt like I was actually there, I remember it. If it was just another video, I forget it by the next day." (Participant 18, Institution C)

"The ones that stuck with me are the ones where I felt involved, where I was paying attention because it was interesting. The rest just blur together." (Participant 42, Institution A)

Students also highlighted several strengths unique to VFTs that contributed to their perceived learning value when the conditions were right. These included flexibility of access and scheduling, the ability to visit remote, restricted, or hazardous sites that would be impossible or impractical to visit in person, reduced financial cost for both students and institutions, improved safety, and, critically, the ability to replay and revisit content after the initial viewing. These affordances enhanced perceived learning value particularly when the VFT had created sufficient presence for students to notice meaningful details, reflect on what they observed, and revisit key moments with intentionality rather than passively rewatching content they had found dull the first time.

"Being able to watch it again is actually a big advantage. If it was good the first time, going back helps you pick up things you missed." (Participant 22, Institution B)

"I liked that I could pause it and take notes properly. On a real trip everything moves so fast you cannot always write things down." (Participant 40, Institution A)

Importantly, students noted that these distinctive affordances only became valuable when the underlying VFT experience was sufficiently engaging and presence-creating in the first place. Replayability, for instance, was considered essentially meaningless if the original experience was too dull or poorly structured to warrant a second viewing. This observation reinforces the centrality of presence in the proposed model: the unique strengths and affordances of VFTs are only activated and realised when the design of the experience creates the conditions for genuine psychological engagement.

5. Proposed Model and Design Principles

5.1. Proposed Integrative Model

The findings support a clear explanatory pathway linking VFT design to perceived learning value through the mediating role of presence. The proposed model can be expressed as follows:

Virtual field trip design features --> Perceived presence --> Perceived learning value

The model specifies the following relationships. System quality and immersion influence presence by enabling realism, reducing technical distractions, and supporting sustained attention to content. Instructional organisation influences presence by providing purpose, narrative coherence, structured pacing, and engaging delivery that directs and sustains student attention. Social interaction influences presence by creating participation, responsiveness, and a sense of co-presence with other people, whether peers, guides, or industry hosts. Presence, in turn, influences perceived learning value by increasing attention, involvement, memorability, and perceived applicability of the experience to academic and professional goals. The model therefore positions presence not as a binary state that is either present or absent, but as a continuum that is shaped by the combined and interactive effect of multiple design domains acting together.

5.2. Design Features Associated with Presence

The analysis identified several design features that influence students' sense of presence during virtual field trips. Presence was strengthened when the experience supported immersion, instructional clarity, and opportunities for interaction, while weak technical quality, passive delivery, or limited engagement reduced the perceived authenticity of the visit. These findings indicate that the effectiveness of virtual field trips is not determined only by the destination shown but by the way the experience is designed and facilitated. Table 1 summarises the key design domains identified in the analysis and highlights features that either strengthened or weakened the sense of presence reported by participants.

Table 1. Virtual field trip design features and their effect on presence.

Design Domain	Presence-Strengthening Features	Presence-Weakening Features
System quality and immersion	Clear audio and video; stable access; smooth viewing; interactive or 360-degree viewing; minimal technical friction	Lag and instability; poor sound or low resolution; limited viewing control; weak realism
Instructional organisation	Clear objectives; relevance to module topics; structured pacing; signposted learning points; engaging and dynamic guide style	Unclear purpose; weak structure; long passive sections; monotonous or scripted delivery
Social interaction	Live Q&A; structured discussion; peer tasks; interaction with industry representatives	No interaction; passive viewing only; limited or no opportunity to ask questions

5.3. Practical Design Principles for Educators

The findings also point to a set of practical design principles that can help educators strengthen both presence and perceived learning value in virtual field trips. These principles translate the main themes of the study into actionable guidance for planning, facilitating, and integrating virtual field trips within tourism and hospitality curricula. Rather than focusing only on technical delivery, the principles emphasise the importance of instructional purpose, interaction, and structured reflection. Table 2 summarises these design principles and shows how they can be applied in practice.

Table 2. Design principles to strengthen presence and learning value.

Principle	What It Means in Practice
Prioritise attention before content	Use reliable platforms with good sound and clear visuals; reduce long passive segments; test technical setup in advance; provide technical guidance to students before the session
Make purpose explicit	State learning objectives at the outset; link VFT content to module topics; distribute observation prompts or pre-visit tasks
Treat the guide as instructional design	Brief guides to signpost key learning points, vary delivery style, use narrative and examples, and invite questions at regular intervals
Design social learning deliberately	Incorporate live Q&A, small group discussion, breakout tasks, or peer reflection activities during and after the tour
Leverage replayability as a learning strategy	Provide targeted rewatch prompts and reflective questions linked to assessment criteria, application tasks, or portfolio entries
Embed pre- and post-visit activities	Use briefing materials to prepare students before the VFT and debriefing discussions or written reflections after the VFT to consolidate learning

6. Discussion

The findings offer a coherent and empirically grounded explanation for why students frequently describe VFTs as convenient but less valuable than physical visits. Students are not rejecting the concept of virtual visits as such; rather, they are responding to specific design conditions that fail to create the presence necessary for meaningful experiential learning. When a tour is technically compromised, pedagogically unstructured, or socially barren, students are more likely to disengage and interpret the experience as passive content consumption rather than genuine learning (Karabulut-Ilgu et al., 2018). This insight shifts the evaluative focus from the technology itself to the quality of the design decisions that shape how that technology is used.

A central contribution of this article is the articulation of presence as a mediating mechanism in the relationship between VFT design and perceived learning value. This finding extends the existing literature, which has tended either to examine individual design features in isolation or to treat learning outcomes as direct functions of technological sophistication (Klippel et al., 2019; Makransky & Lilleholt, 2018). By positioning presence as the experiential pathway through which design translates into value, the model clarifies why purely technical improvements, such as upgrading video resolution or adopting VR headsets, may be insufficient on their own to improve student learning outcomes. Immersive formats can enhance presence, but instructional organisation and social interaction design are equally, if not more, important in determining whether students experience the VFT as educationally meaningful and worthy of their full attention (Garrison et al., 1999; Mayer, 2009).

The prominence of instructional organisation in students' accounts resonates strongly with Mayer (2009) multimedia learning principles, particularly the segmenting, signalling, and coherence principles. Students consistently valued VFTs that were broken into manageable segments, that signposted key learning points clearly, and that maintained a transparent connection to module objectives throughout. The central role attributed to the guide, which was highlighted across all seven focus groups without exception, aligns closely with the teaching presence component of the Community of Inquiry framework (Garrison et al., 1999). Teaching presence emphasises the importance of a facilitating presence that designs, directs, and supports the cognitive and social processes of the learning experience. These findings suggest that VFT design should be treated as a form of instructional design requiring careful pedagogical planning, not merely as content curation or technological deployment.

The identification of social interaction as the most visible and most keenly felt gap in VFTs is consistent with the Community of Inquiry framework and with broader research on social presence in online learning environments (Kreijns et al., 2003; Lowenthal & Dunlap, 2020). Students' accounts make clear that the absence of interaction does not simply reduce satisfaction or enjoyment; it fundamentally changes the nature of the experience from participatory and relational to observational and isolating. The recurring phrase "watching, not visiting" encapsulates this experiential shift with clarity and force. This finding has direct and practical implications for educators, who must actively and deliberately design social elements into VFTs rather than assuming that interaction will emerge spontaneously from the platform or the format being used.

The findings also support a constructive and optimistic view of VFTs as a legitimate pedagogical tool rather than a mere substitute for physical visits. Students recognised genuine and valuable strengths of virtual delivery, including flexible scheduling, access to geographically remote or restricted sites, reduced cost and environmental impact, enhanced safety, and the ability to replay and revisit content for deeper study. These

are not marginal or trivial benefits; they represent meaningful educational affordances that can widen participation, support sustainable programme delivery, and enhance learning when paired with intentional and thoughtful design (Bower, 2017; Dwivedi et al., 2020). When VFTs are designed with careful attention to presence, they can effectively complement physical visits through pre-visit preparation, reinforce learning after a site visit through guided rewatching, or provide high-quality alternatives when travel is not feasible due to cost, logistics, or other practical constraints.

Furthermore, the connection between presence and the unique affordances of VFTs, particularly replayability, represents a novel finding of this study. While replayability has been noted as a general benefit of recorded learning materials, students in this study emphasised that its value is conditional on the quality of the original experience. A VFT that fails to create presence is unlikely to benefit from repeated viewing because students have little motivation to rewatch content they found unengaging. Conversely, a high-presence VFT gains additional learning value through intentional rewatching, as students can return to specific moments with clearer purpose and deeper attention. This conditional relationship between presence and affordance utilisation has practical implications for how educators frame and support the use of recorded VFTs as study and revision resources.

7. Implications for Practice

The findings yield several practical implications for educators, programme designers, and institutional decision-makers responsible for experiential learning delivery. First, the selection of VFTs should move beyond topic relevance alone to encompass a careful evaluation of presence potential: the quality of delivery, the capacity for meaningful interaction, and the presence of purposeful instructional structure. Educators should critically assess VFTs before deploying them in their programmes, asking whether the experience is designed to engage students actively or merely to deliver content passively.

Second, educators should recognise that the threshold for disengagement is considerably lower in online environments than in physical settings and should therefore embed active prompts, observational tasks, and structured activities throughout the VFT experience. Pre-visit briefings that set clear objectives and establish expectations, combined with post-visit debriefings that encourage structured reflection, can bookend the VFT and activate the full experiential learning cycle described by Kolb (1984).

Third, social learning and professional networking opportunities should not be assumed to occur naturally in virtual settings. They must be designed deliberately through interactive elements such as live question-and-answer sessions with site hosts, breakout room discussions among student groups, collaborative observation tasks, and facilitated post-visit reflection activities. Where live synchronous interaction is not possible, asynchronous alternatives such as discussion boards, peer review tasks, or collaborative annotation activities can partially address the social gap.

Fourth, replayability should be leveraged intentionally rather than passively. Educators should provide targeted rewatch prompts linked to assessment criteria, applied tasks, or portfolio development, guiding students toward purposeful re-engagement with the material rather than leaving them to decide independently whether and how to revisit the recording.

Finally, institutions commissioning or creating VFTs should invest not only in technical quality but equally in guide preparation, pedagogical scripting, and interaction design. The guide's role should be understood as a critical dimension of instructional design, not merely a logistical component of tour delivery. Guides should be briefed on learning objectives, encouraged to vary their delivery style, use narrative and examples, and invite student questions and responses at regular intervals throughout the experience.

8. Limitations and Future Research

This study adopts a qualitative design, which provides considerable depth of insight into student experiences but limits the statistical generalisability of findings to broader populations. The sample, while purposively selected for variation across institutional contexts, may not fully represent the diversity of tourism and hospitality programmes globally. Additionally, all participants were based in institutions offering English-medium instruction, and cultural differences in learning preferences, expectations of virtual environments, and social interaction norms were not explored in depth in this study.

Future research should test the proposed design-presence-value pathway quantitatively, using validated measures of system quality, instructional design quality, social presence, and learning outcomes to model their structural relationships through techniques such as structural equation modelling. Experimental studies comparing different VFT formats, such as standard recorded video versus live-streamed tours versus interactive 360-degree environments, could clarify which specific design features most strongly influence presence across different student populations, disciplinary contexts, and cultural settings. Longitudinal studies could examine whether design-enhanced VFTs produce durable learning gains relative to traditional delivery formats over the course of an academic programme. Future work could also explore how assessment design interacts with presence, particularly in experiential modules where reflection, application, and professional competency development are central learning goals. Finally, comparative studies across diverse cultural,

institutional, and disciplinary contexts would enhance the transferability and robustness of the proposed model.

9. Conclusion

Virtual field trips become educationally valuable when they create presence. This article has explained presence as the mechanism linking VFT design features to perceived learning value, drawing on qualitative evidence from 42 tourism and hospitality students across three higher education contexts. The proposed integrative model identifies three design domains, namely system quality and immersion, instructional organisation, and social interaction, as antecedents of presence, which in turn drives perceived learning value.

System quality and immersion create the foundational conditions for involvement by reducing technical distractions and enabling sustained attention to the content and environment being presented. Instructional organisation sustains attention through purpose, narrative structure, clear signposting of learning points, and engaging guide delivery. Social interaction transforms passive viewing into active participation by creating meaningful opportunities for dialogue, questioning, collaboration, and shared meaning-making among students, guides, and industry hosts. Together, these three design domains strengthen presence, and presence in turn strengthens students' perceived learning value.

The proposed model and accompanying design principles provide actionable, evidence-based guidance for educators who seek to ensure that virtual field trips are not merely convenient substitutes for physical visits but are genuinely effective and meaningful learning experiences in their own right. By shifting the focus from technological novelty to presence-centred design, educators can create virtual field trips that feel closer to authentic, site-based learning and that produce stronger educational outcomes for tourism and hospitality students.

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