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Virtual Selves and Embodied Learning: Enacting Simulated Lived Experience in the Metaverse as Critical Pedagogy in Higher Education

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Abstract:

As calls to center lived experience in higher education intensify, so too do concerns about the ethical, emotional, and structural risks involved in integrating real-life narratives into pedagogy. This study introduces Simulated Lived Experience (SLE) as a novel pedagogical modality that leverages the immersive affordances of learning environments like the metaverse to approximate systemic conditions of marginalization without reproducing trauma or requiring emotional labor from marginalized individuals. Drawing on critical pedagogy frameworks and affect theory, the research explores how SLE enables learners to engage with ethical discomfort, narrative complexity, and affective dissonance through the enactment of virtual selves. A qualitative design was employed, with data collected via semi-structured interviews from 12 participants who engaged in metaverse-based simulations portraying exclusionary dynamics related to disability, race, and institutional access. Thematic analysis generated four key findings: (1) virtual simulations evoke affective authenticity but also ethical unease, (2) embodied disorientation fosters structural insight, (3) narrative authorship and representation are ethically contested, and (4) discomfort acts as a catalyst for critical reflection. The study concludes that while SLE cannot replace lived experience, it can function as a powerful epistemic mediator when designed collaboratively, approached reflexively, and grounded in epistemic care.

Keywords:

Metaverse, Lived Experience, Simulation, Higher Education, Immersive Learning Environment, Critical Pedagogy, Inclusive Education

INTRODUCTION

Across higher education, the call to center lived experience has gained renewed urgency. Rooted in enactive theory and increasingly recognized as an epistemic category, lived experience refers to the situated, embodied, and affectively mediated knowledge of those who navigate systemic inequity from within (Dieumegard et al., 2021). In disciplines such as education, social work and public health, lived experience has become both a site of critique and a resource for reimagining pedagogical practice (e.g., Ridley et al., 2025). Its inclusion introduces authenticity, deepens empathy, and challenges hegemonic narratives that render certain perspectives peripheral or illegible. However, the pedagogical mobilization of lived experience is not without significant limitations. Engagement with lived experience professionals remains inconsistent, and their participation often entails expectations of emotional labor under conditions that commodify or extract their experience for the benefits of others (Gupta et al., 2023). Eriksson (2023) also observed that the demand for lived experience is often framed as a testimony economy in which stories of suffering are valorized while systemic transformation is deferred. Institutions, even when well-intentioned, often lack the structural mechanisms and ethical frameworks required to support co-production, redistribute narrative authority, or shield lived-experience contributors from tokenism and harm (Crooks et al., 2023). As a result, while the educational value of lived experience is widely acknowledged, its integration into pedagogical settings remains structurally fragile, emotionally taxing, and ethically precarious (Milman et al., 2024).

This tension between the value of lived experience and the difficulty of responsibly integrating it invites the exploration of new pedagogical modalities. It is within this complex and constrained context that the metaverse emerges not merely as a technological curiosity but as a provocative and potentially transformative site for educational innovation (Garcia, 2025; Pradana & Elisa, 2023). With its immersive, spatial, and interactive affordances, the metaverse enables forms of simulation, role-play, and embodied interaction that, in principle, can approximate the affective and situational dimensions of lived experience. Unlike traditional classroom settings, the metaverse offers a medium through which learners might encounter perspectives shaped by systemic inequity without placing the burden of narration or emotional labor on real individuals (Zhai et al., 2023). It allows for scalability and narrative multiplicity, as it can host intersecting storylines that reflect the complexity of systemic inequity across race, gender, class, and ability (Tommasi et al., 2025). It also supports iterative learning by allowing learners to revisit scenarios, make different choices, and critically reflect on outcomes. In this way, the metaverse holds the potential not only to represent lived experience but to rehearse responses to it. This rehearsal cultivates a kind of ethical imagination essential for justice-oriented education. Yet, alongside its technical novelty arises a deeper and more urgent question: *How can we ethically simulate the lived experience in the metaverse, and under what epistemic, affective, and political conditions might such simulations advance rather than undermine justice-oriented education?*

This study responds to that overarching question by introducing and theorizing Simulated Lived Experience (SLE) as a distinct pedagogical modality. SLE is defined as the intentional use

of immersive simulation to approximate, evoke, or disrupt the systemic conditions of marginalization without replicating individual trauma or requiring emotional labor from marginalized individuals. It occupies a tense but generative space between theoretical instruction and testimonial knowledge. As a conceptual intervention, SLE reframes simulation not as representational mimicry but as a site of affective dissonance, narrative negotiation, and epistemic humility. Pedagogically, it holds promise but only when grounded in co-design, framed with reflexive care, and treated as ethically consequential. SLE is conceptually distinct from related terms often used in immersive or experiential pedagogy. Whereas lived experience refers to embodied, affectively mediated knowledge arising from direct navigation of systemic inequity, SLE mediates such knowledge through designed virtual encounters. Simulation is a broader category that may replicate conditions or scenarios without a critical pedagogical orientation, and role-play typically involves learner-performed enactments that are not necessarily grounded in systemic or structural realities. Experiential learning encompasses a wide range of pedagogies, within which SLE is a specific approach oriented toward ethical tension, affective dissonance, and structural friction as intentional design features. Grounded in critical pedagogy frameworks and affect theory, SLE positions the learner in a liminal space where knowledge is co-constructed through embodied interaction, reflective negotiation, and ethical engagement.

Rather than observing from a distance, learners engage with systemic inequities as virtual selves by inhabiting perspectives that invite reflection without appropriating lived experience. These virtual selves refer to the context-specific, digitally constructed identities that learners temporarily inhabit during immersive simulations (Saker & Frith, 2022). While not equivalent to lived identity, these simulated subjectivities offer a way for learners to encounter the limits of their knowledge, experience affective disruption, and engage in reflective negotiation with unfamiliar perspectives. In this sense, SLE mediates both the self and the system by rendering oppression as a spatial and relational terrain to be ethically navigated. To conceptualize SLE as a novel pedagogical approach and critically examine the conditions under which it might be educationally meaningful, this study poses the following research questions:

1. How do participants interpret and emotionally navigate simulated experiences of systemic marginalization in a metaverse-based learning environment?
2. What ethical tensions, affective complexities, and representational power dynamics emerge from engaging with SLE as a pedagogical practice?
3. How does SLE mediate the relationship between learners and lived experience, and what pedagogical conditions are necessary to support its ethical and critical deployment?

METHODOLOGY

Epistemological Orientation

This study employed a qualitative, interpretivist design underpinned by a constructivist epistemology and non-positivist ontology. Knowledge was positioned as contextually situated, co-produced, and mediated by embodiment and affect. The research was grounded in the assumption

that participants' responses to metaverse-based simulations that were deliberately designed to approximate structural elements of marginalization would be shaped by their own lived experiences, positionalities, and sociocultural imaginaries. Building on this assumption, the research was designed to examine how participants interpreted and reflected upon their simulated experiences of marginalization. The study consequently selected methods that could capture participants' own narrativized accounts of embodiment, affect, and spatiality without imposing an externally defined measurement framework. As the intention was to access interpretive meaning-making rather than to quantify affect or measure psychophysiological states, semi-structured interviews were considered appropriate as they align with an epistemological stance that treats embodiment and affect as mediated by self-reflection and narrative construction. Alternative approaches (e.g., multimodal affect tracking, phenomenography, or think-aloud protocols) were considered but were set aside due to the ethical sensitivities of the scenarios, the importance of avoiding intrusive instrumentation in a vulnerable learning context, and the need for asynchronous accessibility across participants with varied digital resources.

Research Design and Reflexivity

Consistent with the epistemic commitments of critical pedagogy (Freire & Macedo, 2018) and affect theory (Bazinet & Van Vliet, 2020), the research design specifically privileged depth, nuance, and situated knowledge over empirical generalizability. Furthermore, this study aligns with the embodied and affective turn in qualitative inquiry, wherein learning and perception are recognized not only as cognitive phenomena but also as somatic, emotional, and spatial experiences. This epistemological orientation necessitated a design that could attend to affective intensities, epistemic dissonance, and reflexive meaning-making within a simulated, immersive learning context. Accordingly, the interview protocol explicitly invited participants to describe bodily sensations, sensory cues, affective shifts, and spatial interactions during the simulation. These prompts were scenario-specific and piloted to ensure they cued reflection on sensory, affective, and spatial aspects without leading or prescribing participant responses. In keeping with this stance, the subsequent analysis adopted an inductive-first approach to coding, followed by theory-informed theme refinement, to ensure that participants' language shaped the thematic architecture while still engaging conceptual frames on embodiment, affect, and critical pedagogy.

Reflexivity was central to how the study conceptualized and enacted embodiment. The study acknowledges that semi-structured interviews privilege spoken narration and therefore mediate the forms of embodiment that can become visible through language. However, this mediation is consistent with the study's interpretivist orientation, which treats embodiment not as a directly measurable state but as something apprehended through reflective articulation. The interview encounter was thus understood as a site where participants translated sensory and affective experience into discursive form, and where the researcher's interpretive voice also became part of that mediation. Rather than viewing this as a methodological constraint, the study regards it as an epistemic condition of inquiry, wherein lived and simulated embodiments are always partially rendered through language, silence, gesture, and relational interpretation. This

reflexive stance also informed the ethical posture of the research. By recognizing that knowledge and emotion are co-produced within the research encounter, ethical practice was treated not merely as procedural compliance but as a relational commitment to care, consent, and transparency throughout the study. Although the institution did not yet have a formal ethics review board at the time of the study, ethical clearance was obtained through an internal review process conducted by the Research Department, in accordance with the institution's research ethics policy. The study followed established procedures for informed consent, voluntary participation, and an ethic of care across all stages of data collection and analysis.

Simulation Context and Scenario Design

The research was situated within a supplementary experiential component of a graduate-level course at a Korean university. The activity was not embedded in the assessed curriculum, and participation was entirely voluntary and had no impact on academic standing. Instead, it was offered to students as an enrichment opportunity to explore inclusive pedagogical principles through experiential engagement (Sanger, 2020). Its purpose was to prompt critical reflection on the structural dynamics of marginalization through simulated perspective-taking. Simulations were delivered via a non-virtual reality (VR) metaverse platform selected for its low barrier to access, scripted non-player characters (NPCs), and first-person embodiment capabilities (Garcia et al., 2023). Rather than replicating individual trauma, scenarios were built to simulate systemic and environmental dynamics using friction, disorientation, and epistemic dissonance as intentional entry points into critical learning (see Figure 1). Content was carefully constrained to avoid triggering material while still fostering authentic emotional engagement. Guided by critical pedagogy frameworks and affect theory, the simulation emphasized ethical tension and relational complexity (not mimetic trauma or emotional spectacle) as catalysts for reflection and transformation. The goal was not to reproduce the ontological status of lived experience but to provide a proximal engagement with the epistemic, environmental, and affective contours of marginalization. Three scenarios were included in the metaverse environment:

- **Scenario 1: Navigating with Sensory Impairment**

  Participants experienced architectural and auditory challenges that simulated visual and sensory processing barriers, including blurred field-of-view overlays, non-contrasted signage, echoing auditory feedback, and inaccessible pathways. These were designed to foreground spatial inaccessibility without replicating individual disability.

- **Scenario 2: Encountering Microaggressions**

  Participants interacted with NPCs with pre-coded gender and racial identity markers. NPCs engaged in subtle, patterned microaggressions such as implicit stereotyping, misnaming, interruption, and differential acknowledgment. This scenario aimed to reproduce cumulative affective weight rather than singular discriminatory events.

- **Scenario 3: Institutional Exclusion in Support Services**

  Participants attempted to access academic assistance in a simulated university setting, where NPCs consistently deprioritized them, ignored queries, or redirected them to other agents without resolution. Rather than overt hostility, this scenario was designed to model systemic neglect, bureaucratic opacity, and frustration.

Figure 1. Digital Simulation of Navigating a University Environment with Sensory Impairment

The scenarios were conceived and implemented within the specific socio-cultural and institutional landscape of Korean higher education, where distinctive legal, cultural, and structural conditions shape everyday experiences of access and exclusion. For example, although Korea's Special Education Act for Persons with Disabilities mandates equal access, many universities continue to contend with architectural inaccessibility and uneven implementation of accommodations (Jang et al., 2016). These realities informed the spatial constraints and sensory obstructions in the Scenario 1. Racial microaggressions in Korea frequently intersect with linguistic hierarchies, accent discrimination, and notions of national identity (Choe & Seo, 2021). These dynamics shaped the scripting of subtle stereotyping, misnaming, and conversational exclusion in the Scenario 2. The Scenario 3 reflected common patterns in Korean university administrative culture, where hierarchical service protocols, rigid role specialization, and

bureaucratic deferrals can frustrate or delay student support (Im & Cha, 2024). Embedding these contextual nuances ensured that the simulated barriers were not abstract or generic, but deeply resonant with the lived and observed realities of Korean students and educators.

Participatory Design Process

The participatory design process drew on Spinuzzi's (2005) conceptualization of participatory design as an iterative, dialogic practice rather than a fixed, uniform method. The design team consisted of faculty in education and instructional technology, staff from the disability support and diversity offices, and external instructional designers with experience in accessibility compliance. Stakeholders were engaged in a consultative co-design process, which was positioned on Spinuzzi's continuum as more structured than user consultation but less than full co-production. This process unfolded in three phases: (1) stakeholders reviewed initial scenario narratives for ethical soundness and representational integrity, (2) they provided input on environmental affordances (e.g., signage legibility, sound distortion parameters, and NPC interaction scripts) to align with known systemic barriers, and (3) they conducted post-build walkthroughs to evaluate whether the scenarios conveyed the intended structural challenges without replicating individual trauma. While individuals with sensory impairments or direct experience of racial microaggressions were not invited into scenario co-construction in this initial deployment, the design drew on documented accessibility audits, published first-person accounts, and relevant qualitative studies in higher education to inform the representational framing.

Participant Recruitment and Simulation Procedures

Purposive sampling was employed to ensure the inclusion of participants representing a diverse range of academic disciplines and levels of digital fluency. Consistent with the principle of information power (Malterud et al., 2016), the final sample consisted of seven graduate students and five teaching staff ($N = 12$). Participants were not required to disclose any personal lived experience related to the simulations. This design decision respected both ethical considerations and the analytic orientation of the study, which sought to elicit interpretive responses rather than first-person testimonial accounts of oppression. While demographic data were not formally collected to preserve anonymity in a small cohort, participants represented a range of racial, gender, disciplinary, and neurodiverse identities. Following recruitment, participants engaged with the simulation in a format carefully designed to support both reflective depth and emotional safety. The experience was asynchronous and self-paced, with participants advised to spend approximately 15 to 20 minutes inhabiting a virtual self. This temporal structure was designed to balance cognitive and emotional immersion with ethical considerations around affective overload. Each participant engaged with the simulation individually, without real-time observation or peer presence, to reduce social performance effects and allow for internalized reflection. Real-time technical or emotional support was available on request, though not required by any participant. Within 48 hours of completing the simulation, participants were invited to a synchronous group debrief via Zoom, moderated by a facilitator with experience in ethical digital pedagogy and

inclusive learning design. This space served to surface emotional and ethical reactions in a supportive environment. An invitation to participate in individual interviews followed the debrief.

Data Collection and Analysis

Data were collected through semi-structured interviews conducted via Zoom within one week of participants' simulation experience. This timeline was chosen to preserve affective immediacy while allowing space for reflective interpretation. Interviews ranged from 30 to 50 minutes and were guided by a protocol designed to elicit participants' emotional reactions, epistemic reflections, ethical concerns, and perceptions of the simulation's pedagogical value (see Appendix A). The interview environment was structured according to trauma-informed pedagogical principles (Carello & Butler, 2015) to ensure participant well-being. Interviews employed neutral, non-directive questioning to avoid re-traumatization or emotional coercion, and each session concluded with a brief emotional check-in. Participants were also provided with access to institutional support resources should they require additional follow-up care. These safeguards recognized that while the simulation was not explicitly traumatic, the affective load and ethical friction it evoked warranted an ethics of care in the research encounter. All interviews were audio-recorded with participant consent and transcribed verbatim.

Data were analyzed using reflexive thematic analysis (Braun & Clarke, 2019), a flexible and recursive method well-aligned with the study's constructivist epistemology and interpretivist framework. This approach positions the researcher as an active meaning-maker, acknowledging that themes are not generated but co-constructed through iterative engagement with the data. The analysis began with inductive, data-led coding to remain open to participants' language and meanings, followed by a theory-informed interpretive phase in which critical pedagogy and affect theory guided the refinement and naming of themes. The analytic process involved repeated movement between the dataset, developing codes, and candidate themes, with shifts in thinking documented through reflexive memos. Rigor was supported through sustained engagement with the dataset, iterative theme development, and a reflexive audit trail detailing analytic decisions and researcher positionality (Birt et al., 2016; Nowell et al., 2017). Member checking with three participants and a peer audit by an external qualitative advisor were incorporated as dialogic opportunities to question interpretations, surface alternative readings, and deepen reflexive engagement. Participant feedback was engaged with as part of the meaning-making process, and peer dialogue functioned as "critical friendship" to challenge assumptions and refine thematic boundaries. Thematic findings centered around participants' emotional and ethical responses to SLE, including tensions between realism and legitimacy, affective dissonance, and the politics of representation. To make the analytic journey transparent, Appendix B illustrates how shifts in interpretation and theoretical engagement shaped the themes reported in the findings.

FINDINGS

Thematic analysis generated four key patterns in how participants emotionally, ethically, and pedagogically engaged with the SLE scenarios. These themes are presented below, supported by illustrative quotes, and highlight the interplay between embodiment, discomfort, and epistemic uncertainty as participants navigated metaversal encounters with marginalization.

"*It felt real but ethically uncomfortable*": Simulation and Affective Authenticity

Participants frequently described a visceral sense of immersion in the simulation, often using language associated with emotional and physical disruption. As one student reflected, "*It felt real enough that I almost forgot it was a class activity, but that's also why I wondered if we were crossing a line*" (Participant 1). Despite being fully aware of the artificial nature of the environment, many reported what might be called *affective authenticity*, or the sense that the feelings produced were real, even if the context was constructed. This response evoked a kind of empathetic dissonance, wherein participants questioned the legitimacy of their emotional reactions to an experience they recognized as not their own. This affective ambiguity signals a critical tension at the heart of simulated pedagogy, namely the capacity to evoke real emotional labor through unreal experience. Without pedagogical scaffolding, transparent narrative authorship, and explicit consent to emotional immersion, such realism risks producing discomfort that is ethically unmoored rather than pedagogically generative.

> "*I felt disoriented almost immediately—the sounds, the blur—it got under my skin. But then I had this thought like, 'Is it okay that I'm feeling this? It's not really my experience.'*" — Participant 4, student

> "*The microaggressions part hit hard. I've seen that happen to friends, but being the one it's aimed at, even if it's fake, made me uncomfortable. Like I was borrowing something that's not mine*."— Participant 9, staff

"*The environment did the teaching*": Embodiment, Disorientation, and Friction

A striking observation among participants was that the simulation was taught without explanation. Participants described the virtual space itself as the primary pedagogical agent, as its friction, disorientation, and resistance to intuitive interaction prompted moments of self-discovery and affective insight. One staff noted, "*Getting lost in the building wasn't just confusing, it made me realize how the campus is actually designed against certain people*" (Participant 4). The experience of being ignored, misdirected, or lost within the simulation produced what one might describe as *structural empathy*, or an embodied understanding of systemic exclusion through spatial frustration. Rather than merely observing these conditions, participants enacted them through the provisional lens of a virtual self. This approach aligns with conceptions of embodied pedagogy, wherein learning is not transmitted discursively but felt through spatial constraint, sensory

overload, and somatic friction. In this framing, the metaverse functions as a non-verbal agent that choreographs perception and moral attention. For participants, this kind of embodied discomfort emerged as a powerful conduit for insight. They were not only interpreting the simulation but also enacting virtual subjectivities or affect-laden identities formed through immersive interaction. They encountered barriers and spatial exclusion that produced insight by inhabiting the limits of understanding. The act of navigating these limits constituted a pedagogical event in itself.

> "*It was like the world was designed to frustrate me. I kept bumping into things or getting lost, and then I realized that's the point. It's supposed to show what happens when the world isn't built for you.*" — Participant 1, student

> "*The moment I couldn't get help in the support office, again and again, I felt small. Not just annoyed. That feeling stayed with me, and I'm still thinking about it.*" — Participant 12, staff

"*Whose story is this*?": Representation, Ownership, and Narrative Ethics

While participants found the scenarios emotionally resonant and pedagogically useful, many raised concerns about the provenance of the narrative content. There was a consistent undercurrent of anxiety about who authored the simulations and whether those voices were rooted in lived experience. A student challenged the narrative design directly: "*I kept thinking who decided this is how my story should be told?*" (Participant 12). This tension was especially acute in scenarios simulating racialized microaggressions or disability-related exclusion. Participants emphasized the ethical risks of simulation as a representational act divorced from narrative accountability. These reflections call attention to the potential for epistemic mimicry, where well-intentioned simulations risk appropriating marginalized narratives without the involvement of those who hold them. Participants expressed strong support for narrative co-production as an ethical imperative and argued that immersive technologies must not only center marginalized subjects in design but also uphold their epistemic sovereignty. Without this, simulations risk becoming affective performances that reinscribe representational violence.

> "*The simulation was powerful, but I kept wondering–who wrote this? Who decided what that microaggression looked like? Because if it wasn't someone who's lived it, that's a problem*." — Participant 7, student

> "*It's one thing to feel empathy. It's another to accidentally reenact someone else's pain without their permission*."— Participant 2, staff

"*It made me sit with discomfort*": Reflective Dissonance as Learning Catalyst

Despite—or perhaps because of—the affective discomfort generated by the simulation, many participants described the experience as pedagogically catalytic. As one staff described, "*The awkwardness stayed with me and that's what made me go back and think harder about why it*

felt that way" (Participant 9). Instead of triggering defensive reactions, the discomfort produced reflective dissonance: a sustained, internalized engagement with the emotional, ethical, and structural dimensions of the scenarios. Participants articulated this discomfort not as a flaw but as the very site of their learning. Interestingly, this theme evokes Mezirow's (1997) concept of transformative learning, where disorienting dilemmas serve as portals into deeper epistemic and moral reflection. The simulation functioned as a liminal pedagogical space, which enabled participants to grapple with difficult knowledge in a temporarily scaffolded but ultimately unresolvable way. Unlike traditional didactic methods, SLE invited learners to sit with ambiguity, metabolize emotional insight, and carry unresolved tension forward into their future thinking.

> "*I didn't leave the simulation feeling 'better.' I felt reflective, unsettled. That's what good teaching does. It doesn't tie things up for you.*"— Participant 6, student

> "*It wasn't trauma-porn. It was just enough to make you stop and say: okay, what am I not seeing in real life?*"— Participant 11, staff

DISCUSSION

This study examined how SLE was received, interpreted, and ethically navigated by students and educators. The findings contribute to emerging conversations on the role of immersive technologies in critical pedagogy, with particular emphasis on the affective, ethical, and epistemological dimensions of digital simulation. In the context of this extracurricular activity, the knowledge at stake was not disciplinary mastery but structural, ethical, and relational knowledge, specifically how inequity is enacted, perceived, and navigated within the socio-cultural setting of Korean higher education. Through simulated encounters with spatial barriers, institutional neglect, and microaggressions, participants connected prior conceptual understandings to embodied and affective experiences, prompting reflection on the limits and situatedness of their own knowing. Rather than evaluating effectiveness in instrumental terms, this discussion centers on the conceptual and pedagogical significance of SLE as a liminal and saturated learning environment that blurs the line between witnessing and participation, engagement and appropriation, and discomfort and insight. Four interrelated arguments are offered here, each corresponding to a major theme from the findings.

Simulated Lived Experience as an Epistemic Mediator

One of the principal theoretical contributions of this study is the articulation of SLE as a distinct epistemic mediator as a form of mediated knowing that occupies the conceptual space between abstract theoretical discourse (e.g., conceptual or policy-level discussions of equity, access, and justice that learners may have encountered in readings, lectures, or institutional diversity statements) and direct testimonial or embodied knowledge (e.g., first-person accounts or lived participation in inequitable systems). Echoing findings from O'Flanagan and Jester (2025)

on the role of emotion in experiential learning, this study revealed that participant engagement with the simulation was not primarily informational or representational but affective, situated, and dissonant. Rather than acquiring "*knowledge about*" marginalization in the conventional cognitive sense, participants encountered structural and affective barriers in a way that felt somatically real yet ethically ambiguous. This tension echoes concerns that immersive media may collapse distance without truly bridging differences (Irom, 2021). Critically, this framing challenges traditional models of experiential learning, which often presume a linear progression from exposure to empathy to insight. While some experiential pedagogies focus on reproducing conditions to generate sympathy or "*walking in someone else's shoes*," this study found that participants did not presume identification or narrative absorption. Instead, they described themselves as inhabiting a third space where emotion, cognition, and ethical awareness were in constant negotiation. The simulation thus operated less as a prosthetic for lived experience and more as a relational disruption that unsettles fixed notions of proximity and authority.

The findings of this study likewise affirm and complicate prior research on simulation-based education. Studies in various contexts have documented the capacity of immersive scenarios to generate emotional engagement and perspective-taking (Jones & Dawkins, 2018; Lacle-Melendez et al., 2025). However, this study diverges from frameworks that equate affective response with ethical understanding. By contrast, participants explicitly questioned their own reactions, revealing an acute awareness of the limits of simulated embodiment. They experienced emotional intensity but doubted the legitimacy of their feeling (Tommasi et al., 2025). This response suggests a form of epistemic humility that is rarely captured in evaluation metrics focused on empathy or behavioral intent. In this context, epistemic humility refers specifically to becoming aware of how partial and provisional one's understanding is when engaging with experiences one cannot fully inhabit. Importantly, SLE in this context functioned as an epistemic threshold rather than an epistemic endpoint. Participants did not emerge with clear moral resolutions or a confident sense of understanding; instead, they left with a heightened awareness of what they could not know and a sustained unease about the boundaries between knowing, feeling, and representing. Consistent with Gangopadhyay and Pichler (2024), such responses reflect the tension between embodied and non-embodied agency in digital contexts, where engagement often foregrounds affective disruption over representational clarity.

What emerges, then, is a view of SLE as an instrument not of resolution but of generative epistemic dissonance, or the productive tension that arises when new perspectives unsettle one's existing assumptions. Rather than resolving differences through appropriation, this mode of learning deepens engagement by fostering encounter, interruption, and reflexive distance. In this dynamic, learners are not passive recipients of content because they enact their virtual selves to negotiate their role as both an agent and an outsider. These provisional subjectivities function as pedagogical devices by allowing learners to grapple with what it means to know from a position they cannot authentically inhabit. This process heightens both affective and cognitive engagement while preserving epistemic humility. Consistent with Guo et al. (2022), learners' reflective engagement with unfamiliar epistemic positions can deepen identity exploration and foster

cognitive and affective complexity. Therefore, rather than treating SLE as a substitute for lived experience, this study argues for its potential as a mediating practice. More precisely, SLE is intended to prepare learners to meaningfully listen to, engage with, and remain accountable to those with lived experience. Within this framing, the pedagogical value of SLE and the embedded simulation within the metaverse is not found in replicating reality but in creating structured encounters with experiences that remain partially inaccessible.

Ethical Imperatives of Representation in Simulation

While metaverse-based SLE elicited affective resonance and reflective dissonance, the narratives gathered throughout the study surfaced a range of ethical tensions that complicate any uncritical celebration of simulation as an inherently pedagogical good. As Jones and Dawkins (2018) cautioned, immersive technologies may fabricate a sense of connection while sidelining narrative agency and relational ethics. Central among these concerns is the issue that simulation may enable emotional proximity without ethical permission (Irom, 2021), producing what this study defines as *illegitimate intimacy*. This condition arises when learners experience emotional resonance with simulated identities or experiences despite occupying a position of externality without lived connection, narrative consent, or relational accountability. Echoes of this dilemma appear in longstanding critiques of critical pedagogy and postcolonial theory (Samier, 2021), which caution against educational practices that seek to "stand in" for the other, especially when such acts of simulation are unmoored from narrative accountability or authorial consent.

Interestingly, participants repeatedly expressed uncertainty about whether the emotions they experienced were ethically warranted. For some, the realism provoked visceral discomfort, while that same realism prompted self-censure for others (O'Flanagan & Jester, 2025; Zhai et al., 2023). These responses echo critiques in disability studies and trauma-informed pedagogy that frame simulations of marginalization as potentially exploitative or extractive, particularly when designed without co-authorship by those whose experiences are rendered. For example, disability scholars have critiqued "*crip drag*" and other embodiment exercises for simulating impairments without engaging the political, cultural, and historical dimensions of disability (Dunn, 2020). Similarly, Beavers et al. (2024) asserted that while immersive simulations can facilitate anti-racism learning, they risk being reduced to isolated educational interventions if not paired with critical reflection, structural analysis, and organizational accountability. Yasuda (2024) extended these concerns by cautioning that immersive metaverse environments may blur ethical boundaries and heighten social risk, particularly when simulations lack contextual grounding or narrative coherence. This tension between emotional intensity and ethical ambiguity is also apparent in interactive video games, where heightened realism often amplifies emotional impact but does not guarantee ethical clarity or sustained behavioral change (Kim et al., 2014).

Even in domains far removed from social justice, researchers have observed that immersive realism can produce affective responses without facilitating comprehension. For instance, Bosman et al. (2025) noted that users often struggled to articulate or interpret their embodied experiences, particularly when those experiences lacked a coherent narrative frame.

Similarly, Guo et al. (2022) found that without reflective scaffolding, immersive educational experiences may fail to support epistemic development despite evoking emotional responses. These findings raise important questions about the pedagogical limits of emotional impact. Affective engagement alone may not ensure ethically grounded learning, especially when simulations lack narrative context or authorial consent (Lacle-Melendez et al., 2025). Nevertheless, participants did not reject simulations outright. Rather, they articulated a desire for transparency, context, and co-ownership in which simulation is understood not as a neutral educational tool but as a morally situated practice with consequences for how knowledge is produced, circulated, and felt (O'Flanagan & Jester, 2025). This call reframes the ethics of simulation from a question of content accuracy to a question of relational design: Who has the power to script lived experience? Who is positioned as the narrator and as the learner? What are the conditions under which emotional engagement becomes ethically viable?

This study extends the ethical conversation beyond fidelity and representation to consider the affective economies of simulation, that is, how simulations distribute emotional labor, vulnerability, and interpretive authority (Guo et al., 2022; Yasuda, 2024). The pedagogical risk is not simply misrepresentation but emotional appropriation, wherein learners encounter pain, exclusion, or stigma as an experiential artifact that can be consumed, reflected upon, and then discarded (Tommasi et al., 2025). In this sense, simulation runs the risk of producing not only epistemic harm but also affective disposability, whereby the lives of others are rendered temporarily "real" for pedagogical effect, only to be abandoned at the simulation's end. Gangopadhyay and Pichler (2024) similarly cautioned that digital technologies can suppress embodied meaning-making, resulting in disembodied exchanges that risk flattening affective and ethical nuance. Ultimately, the findings suggest that the ethical value of simulation cannot be located in affective intensity alone. Rather, it must be assessed through a multi-layered ethical lens that accounts for authorship, intent, narrative consent, and the broader political context in which simulations are deployed. SLE holds pedagogical promise precisely because it unsettles learners, but that unsettling must be accompanied by structural care, co-authored design, and institutional accountability. Without these safeguards, the simulation may succeed at moving the learner while failing the communities whose experiences it purports to represent.

Refusing Substitution: Co-Design as Critical Praxis

One of the most salient concerns voiced by participants was the question of narrative authorship, specifically who created the simulation, whose voices were represented, and whether those voices were anchored in lived experience. This critical awareness points to a broader epistemic and pedagogical principle. SLE must not function as a substitute for direct engagement with marginalized voices but rather as a scaffolded encounter that demands accountability to those voices, especially given the risks of narrative centralization and symbolic appropriation (Irom, 2021). Consistent with Yasuda (2024), ethical simulation design requires participatory frameworks that include those with lived experience to avoid narrative appropriation. Participants' reflections echoed growing scholarship in design justice and participatory pedagogy,

which contend that educational tools, especially those representing marginalized realities, must emerge from relational processes of co-creation rather than top-down instructional design (Greenberg et al., 2025). This emphasis on relational authorship is affirmed by Jones and Dawkins (2018), who argued that immersive creators must move beyond voyeuristic models and embrace co-authored storytelling rooted in radical compassion. Co-design, in this sense, is not simply an inclusive gesture but an ethical and epistemological imperative.

A key contribution of this study is the recognition that the authority to construct simulations that engage with disability, racialized oppression, or institutional exclusion cannot be located solely within the educator, instructional designer, or technologist. Without collaboration from those with lived experience, simulations risk becoming representational monologues (Saker & Frith, 2022; Zhai et al., 2023)—crafted by outsiders, interpreted by learners, and rendered meaningful in ways that often reinforce dominant perspectives under the guise of inclusion. These findings likewise reinforce critiques of pedagogical models that instrumentalize minoritized experiences for affective or intellectual gain (e.g., Legette et al., 2021). While such simulations may evoke emotional resonance, they can perpetuate epistemic injustice by erasing the political labor, cultural depth, and narrative sovereignty of the communities being represented. Co-design, by contrast, reorients simulation from content delivery to relational pedagogy. It transforms immersive learning into a dialogic space, grounded not only in affective immersion but also in reciprocal authorship, responsible listening, and shared meaning-making (Micsinszki et al., 2022). Participants explicitly expressed a desire for this kind of ethical coherence and relational anchoring. This aspiration underscores that learners are not only capable of engaging with complexity but also eager for pedagogical transparency. In this context, the significance of SLE emerges not solely from what is represented but in how it is constructed, who is involved, and whose knowledge is centered. Thus, this study joins and extends calls for collaborative, intersectional, and reflexive design processes in immersive learning environments.

The Metaverse as a Liminal Pedagogical Space

Emerging narratives highlighted the metaverse as more than a delivery medium. Participants portrayed the metaverse as a pedagogically active space that shaped their perception, cognition, and emotional response (Yasuda, 2024; Zhai et al., 2023). Their reflections frame the metaverse as a liminal learning space marked by ambiguity, disorientation, and affective entanglement. The term *liminal* is used here not merely in the spatial or experiential sense but in its anthropological and pedagogical dimensions. In this context, there is a threshold space in which normative categories (e.g., learner and knower, real and simulated, self and other) become temporarily destabilized. In SLE, participants found themselves occupying fictional roles that nonetheless provoked real emotional responses. The resulting discomfort was not dismissed as a dissonance to be resolved but was described as an enduring tension that carried pedagogical weight. This kind of affective and cognitive disturbance is mirrored in other immersive environments where participants reported unease and perceptual ambiguity (Bosman et al., 2025). Although difficult to articulate, these experiences served as entry points to embodied

reflection. As highlighted in the literature, the educational value of the metaverse is not in its fidelity to the real but in its capacity to simulate ambiguity, provoke relational reflection, and suspend the conventions of classroom interaction (Garcia, 2025; Lacle-Melendez et al., 2025).

Rather than producing clarity or moral resolution, the simulation produced affective residue as learners reflexively engaged with the limits of their role. Their virtual selves functioned as sites of pedagogical tension where discomfort was both enacted and reinterpreted (Saker & Frith, 2022). Importantly, this pedagogical ambiguity was not experienced as failure. On the contrary, many participants interpreted it as a sign that the simulation had created space in which discomfort could be metabolized into insight over time (O'Flanagan & Jester, 2025). This notion circles back to earlier discussions of transformative learning theory (Mezirow, 1997), where disorienting dilemmas and suspended certainty are seen as catalysts for deeper epistemic shifts. Nevertheless, the liminality of metaverse environments is not without risk. It demands careful facilitation precisely because it occupies the space between fiction and realism and between representation and embodiment. Without contextual framing and ethical scaffolding, learners may misread the simulation's purpose, aestheticize its content, or fall into uncritical forms of empathy. The metaverse can invite vulnerability but can just as easily trivialize it. Its pedagogical potential resides in its capacity to support guided discomfort and not just immersive engagement. Consequently, this study advances the notion that SLE can function as affective laboratories when designed reflexively. The simulation does not produce lived experience, nor should it try to. What it does produce is a space in which learners can confront the limits of their positional knowledge and begin to orient themselves (Garcia et al., 2024; Tommasi et al., 2025)—ethically, cognitively, affectively—toward others whose lives they cannot fully inhabit.

Implications and Significance of the Study

The findings of this study have significant implications for both theory and practice in the rapidly evolving field of immersive learning technologies, especially in relation to how marginalized identities and lived experiences are engaged with and represented in virtual environments. The concept of SLE presented here offers insights into how virtual simulations can function not as a stand-in for lived experience but as a mediated space that challenges learners to confront the limits of their understanding and the ethical weight of engaging with experiences outside their own (Yasuda, 2024). At the theoretical level, this study contributes to the growing body of work on experiential learning and embodied pedagogy situated in the context of digital and immersive technologies. Positioning SLE as an epistemic mediator also challenges assumptions about the relationship between direct lived experience and pedagogical simulation. It also asserts that simulations can generate epistemic tension and moral reflection without attempting to replicate the full ontological and political realities of marginalization. In doing so, it aligns with critical pedagogies that argue for pedagogical discomfort as a necessary component of transformative learning. Whereas traditional models of empathy-building typically aim to resolve discomfort by fostering identification (Herrera et al., 2018), SLE proposes that discomfort can serve as a generative site for critical reflection on power, privilege, and systemic inequality.

Practically, the study underscores the need for ethical co-design in immersive simulations. The ethical concerns (e.g., authorship, representation, and emotional legitimacy) raised by participants point to a significant gap in the current pedagogical applications of SLE. Specifically, this study affirms the growing call within digital education for participatory design, where those with lived experiences of marginalization have agency in creating the content that purports to represent them. Such co-design is not merely a methodological choice but also an ethical responsibility. This approach safeguards against appropriating or trivializing lived suffering and centers marginalized voices in simulation development and narrative construction. Jones and Dawkins (2018) cautioned that immersive content risks reinforcing a "*tourist gaze*" unless rooted in authentic narrative partnerships and co-authorship. This study also urges educational institutions to critically interrogate how they implement immersive technologies and why they choose to do so. As universities increasingly integrate digital and immersive technologies into their teaching, there is a pressing need to move beyond superficial uses of simulation that treat marginalized experiences as tools for empathy-building (Lacle-Melendez et al., 2025). This commitment may involve rethinking curricula and incorporating reflexive engagement with representation, authorship, and relational accountability complexities.

Positioned within the broader landscape of higher education practice, SLE likewise offers potential applications that extend well beyond its initial research context. While this study implemented SLE as a supplementary, non-assessed activity to mitigate potential academic coercion in its initial deployment, its integration into formal curricula is both feasible and, in certain contexts, desirable. Disciplines in which engagement with systemic inequity is a core competency (e.g., teacher education, social work, public health, disability studies, and intercultural communication) are particularly well-suited for curricular adoption. However, such implementation should ensure that co-design safeguards and trauma-informed facilitation are in place. In other disciplinary contexts, SLE may function most effectively as an extracurricular or co-curricular learning opportunity, serving as a cross-disciplinary resource to cultivate ethical reflection, intercultural competence, and reflexive practice without adding assessment-related pressures. Beyond the question of curricular placement, SLE offers strategic applications in faculty development, where it can be used to rehearse inclusive pedagogical strategies, surface implicit biases, and model equitable decision-making within simulated but contextually authentic environments. At the institutional level, SLE can inform policy and governance by serving as a diagnostic tool in equity audits, accessibility planning, and the ethical integration of immersive technologies. Its diagnostic and reflective capacities can likewise be leveraged to redesign student services, using scenario-driven insights to identify and address structural barriers in administrative workflows. Finally, SLE provides a framework for cross-sector collaboration that can enable universities, community organizations, and policymakers to co-create simulations that address shared challenges in access, inclusion, and justice. In each of these domains, the pedagogical value of SLE lies not in substituting for lived experience but in cultivating the reflexive, ethical, and action-oriented dispositions necessary to engage with it responsibly.

Limitations and Future Directions

This findings of this study should be interpreted with an awareness of several methodological boundaries. First, all data derive from self-reported accounts elicited through interviews. While these narratives offered rich insight into how participants themselves interpreted embodiment, affect, and spatiality within the simulated scenarios, they do not constitute direct physiological or behavioral measurements of these phenomena. As such, the analysis captures participants' meaning-making rather than providing biometric verification of emotional or somatic states. Second, the choice to use semi-structured interviews over more multimodal or observational methods was deliberate, given the ethical sensitivities of simulating marginalization and the importance of maintaining a low-intrusion, accessible research environment. This decision inevitably constrains the granularity of embodied data but aligns with the study's interpretivist stance, which treats embodiment as something mediated through reflective narration rather than reducible to quantifiable signals. In addition, the non-VR metaverse environment used here may have elicited different forms of engagement than fully embodied VR settings. Third, while the design process incorporated multiple institutional stakeholders, it did not involve direct co-production with individuals from the specific groups represented in the scenarios (e.g., people with sensory impairments). This decision was an intentional safeguard in a first deployment to avoid narrative extraction or emotional harm, but it nonetheless limited the depth of lived-experience perspectives embedded in the scenarios.

Future research could address these limitations by incorporating complementary methods capable of triangulating narrative accounts with additional modalities of embodied evidence, such as gaze tracking, movement analytics, or physiological monitoring, while still upholding the ethical imperative to minimize harm in simulations of marginalization. Comparative studies could also explore how SLE functions across different technological affordances (from low-barrier metaverse platforms to high-immersion VR) and whether the balance between affective disruption and ethical safety shifts across these modalities. Furthermore, longitudinal designs could investigate whether the reflective dissonance and epistemic humility reported here translate into sustained shifts in perception, discourse, or professional practice. In addition, cross-cultural research could examine how socio-cultural contexts shape participants' emotional and cognitive engagement with SLEs, recognizing that constructs such as discomfort, empathy, and authority are culturally mediated. Such comparative work could clarify how institutional and national differences influence both the pedagogical impact and ethical interpretation of simulation-based learning. Finally, co-design processes that more extensively embed the voices of those with lived experience into the authoring of scenarios remain a critical area for expansion. This step ensures that the representational and ethical integrity of SLE is preserved as the concept develops.

CONCLUSION

What does it mean to learn through someone else's reality? More than a panacea for educational inequality, this study positions SLE as a complex pedagogical tool for engaging with

the embodied, affective, and ethical dimensions of lived experience. Drawing on participant reflections and a constructivist analytic lens, the findings demonstrate that SLE can function as a potent epistemic mediator. Rather than reproducing lived experience, this modality creates a space of affective dissonance, ethical ambiguity, and relational reflection. SLE in the metaverse underscores a liminal pedagogical practice that invites learners to confront their positionalities and reckon with the limits of their knowing. In this context, the metaverse becomes a pedagogical terrain shaped by narrative authorship, emotional labor, and ethical risk. By decentering representational fidelity in favor of reflexive engagement, SLE reframes learning as an encounter with the learner's own assumptions and blind spots. In an era of growing interest in lived experience as a source of curricular enrichment and simultaneous concern about the emotional labor and representational risks placed on those asked to share it, SLE offers one possible approach to navigating this tension. When designed collaboratively, approached reflexively, and grounded in epistemic care, SLE shifts from learning *about* others at a distance to learning *with* them through relational, co-constructed experiences. What emerges, then, is a mode of education that privileges connection over replication, responsibility over mere access, and the critical enactment of virtual selves as a pathway into ethically grounded, embodied learning.

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