Learning through Lived Roles: Personas as Pedagogical Anchors in Online Higher Education

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Abstract

Effective online learning environments situate abstract concepts within authentic, human-centered contexts that promote relevance, application, and deeper learner engagement. Personas support this process by helping learners engage with realistic human situations that make course concepts more concrete and relatable while fostering emotional and cognitive connections to the material. The use of personas in online higher education is informed by established pedagogical theories, including situated learning, cognitive load theory, and social presence frameworks. From a sociocultural perspective, learning is shaped through interaction with meaningful contexts and tools [11], and personas support this process by embedding course content within realistic scenarios. Situated learning further emphasizes that knowledge is inseparable from the social and professional contexts in which it is applied [5]; personas model these environments through representative roles, challenges, and decision-making processes. Personas also align with cognitive load theory by providing narrative coherence that helps learners organize information and reduce extraneous cognitive processing, particularly for novice learners [10]. In online environments, personas can further enhance social presence, a core element of the Community of Inquiry framework associated with learner engagement and perceived relevance [2]. By humanizing instructional content, personas help reduce the psychological distance often inherent in online learning [9].

Across text-, image-, and video-based materials, personas anchor abstract concepts in realistic contexts and make disciplinary thinking visible. Visual and narrative representations can support comprehension, ethical reasoning, and problem solving across disciplines such as business, engineering, public policy, and the social sciences. Video-based personas extend these benefits by modeling professional reasoning through voice, expression, and storytelling. Research on multimedia learning suggests that well-designed combinations of visual and auditory cues enhance comprehension and retention when aligned with evidence-based principles [7]. Interactive AI chatbot interactions further extend persona-based learning by enabling dialogue, practice, and formative feedback at scale [6], [13], [14]. These low-stakes interactions allow learners to explore ideas, rehearse skills, and receive immediate responses while iteratively refining their understanding. AI chatbot personas may also support student-centered learning and accessibility through personalized pacing and just-in-time support [6], [14]. Looking forward, AI avatars may blur the boundaries between instructional content, simulation, and human interaction by enabling learners to engage with intelligent digital characters that model professional reasoning, communication, and decision-making in authentic contexts. However, regardless of the modality through which they are implemented, the strategic use of personas and AI-driven interactions has the potential to humanize online learning, deepen learner engagement, and support authentic knowledge transfer in higher education.

Keywords: *Situated learning, Theory to practice, AI experiential learning, Engagement in Online Learning*

Introduction

Online higher education continues to expand, yet persistent challenges remain regarding student engagement, perceived relevance, and authentic transfer of learning [1]. While technological innovation often dominates discussions of digital pedagogy, engagement in online environments is shaped less by the tools themselves than by how instructional design situates learning in meaningful human contexts, supports cognitive organization, and fosters social presence [2].

Personas—deliberately constructed representations of people in defined professional, social, or disciplinary roles, used to embed course content within an authentic human context—offer a scalable, research-informed strategy for strengthening engagement across modalities. Whether implemented through simple written narratives, recurring case studies, animated video scenarios, AI-driven

conversational agents, or AI avatars, personas function as pedagogical anchors that connect abstract disciplinary concepts to authentic professional and social contexts.

Persona-based learning draws on a well-established set of theoretical foundations—situated learning [5], sociocultural theory [11], cognitive load theory [10], and the Community of Inquiry framework [2]—each of which is examined in greater depth in the next section. Together, these perspectives suggest that engagement depends on situating content in authentic contexts, organizing information for cognitive coherence, and sustaining social presence. Emerging multimedia and AI technologies extend these possibilities [6], [7], [13], but the underlying mechanisms remain consistent across modalities. As a result, personas function as a scalable engagement strategy—effective in low-tech narrative formats and equally powerful when extended through multimedia or AI-driven systems.

Personas as Engagement Framework

In online learning environments, engagement depends less on technological sophistication and more on the extent to which learners experience relevance, social presence, and cognitive coherence across instructional contexts [1], [2]. Engagement emerges from how personas structure meaning-making, reduce abstraction, and model disciplinary thinking — not from the technological complexity of the implementation.

Beyond contextualizing content, personas can be understood as an engagement framework that structures how learners attend to, interpret, and act on disciplinary knowledge. From an instructional design perspective, personas function as representational tools that narrow interpretive possibilities and highlight relevant cues within complex learning tasks. In this sense, they operate as instructional constraint systems that reduce ambiguity and guide decision-making through defined roles, goals, and contextual boundaries. Personas also shape how learners interpret problems, evaluate information, and apply disciplinary ways of thinking within situated scenarios (much like the context faculty provide in person). This emphasis on contextually grounded, role-based activity aligns with research on authentic learning environments, which highlights real-world relevance, complex problem contexts, and sustained engagement with disciplinary practices [3]. This framing supports not only comprehension but also professional judgment, as learners engage in repeated cycles of perspective-taking and problem-solving from a defined role. Importantly, personas provide opportunities for identity rehearsal, allowing learners to practice disciplinary ways of thinking in low-stakes environments that approximate real-world complexity without its associated consequences [12]. In this way, personas extend beyond engagement facilitation to function as scalable pedagogical structures that integrate attention management, meaning-making, and professional reasoning within online learning environments.

At a low-tech level, persona design may take the form of structured narrative briefs with images, reflective case logs, or sequential scenario updates that revisit the same persona across instructional units. At higher levels of technological integration, personas may be extended through video-based simulations, branching multimedia narratives, or interactive AI dialogue systems that allow learners to interrogate, advise, and reason through unfolding professional situations. (See Fig. 1.)

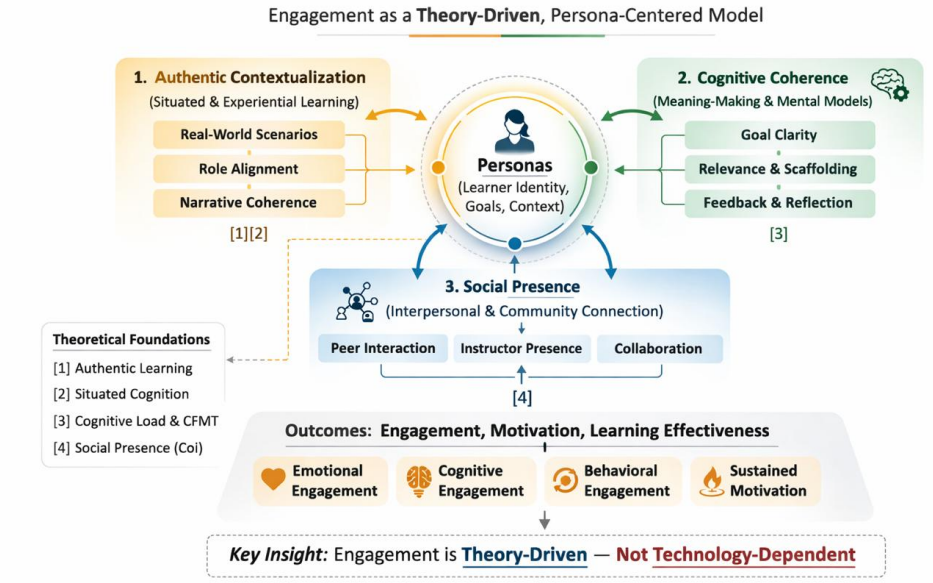

Fig. 1. Persona-Based Engagement Across Theoretical Frameworks
The model highlights how persona design draws on theory to create relevance, coherence, and social presence across modalities.

Personas in Practice

The following examples illustrate how persona-based design operates across a range of disciplines and modalities. Rather than cataloging implementations, the cases are organized around four theoretical lenses — situated learning, cognitive load and narrative coherence, multimedia design, and social and teaching presence — that each surface a different engagement mechanism. Together they show how the same underlying framework adapts to varied disciplinary contexts and levels of technological complexity.

Situated Learning and Disciplinary Role-Taking

Situated learning theory emphasizes that knowledge is inseparable from the contexts in which it is applied [5], while sociocultural perspectives highlight that learning is mediated through social interaction and cultural tools [11]. Within this combined framework, personas function as instructional mediators that translate abstract disciplinary concepts into situated activity systems in which learners take on defined professional roles, navigate contextual constraints, and make decisions under conditions of uncertainty.

In an undergraduate management survey course, for example, seven personas were developed to represent the majors most heavily enrolled in the course, including hospitality management, public relations, health services administration, apparel merchandising, building science, wildlife enterprise management, and aviation management. Because the course serves primarily non-business majors, many students enter without a clear sense of how management theory applies to their intended careers. Each persona occupies a distinct management level and industry context, and course activities use these characters to ground theoretical frameworks such as Value, Rarity, Imitability, Organization (VRIO) analysis and Porter's Five Forces in scenarios students can recognize as relevant to their own professional trajectories. Rather than asking students to bridge the gap between abstract management principles and their own fields, the personas do that translation as a structural feature of the course design.

Cognitive Load and Narrative Coherence

Cognitive load theory emphasizes the importance of reducing extraneous processing to optimize learning [10]. This principle informed the design of an online hospitality professional development course in which students are introduced to the concepts of career planning and preparation in the hospitality industry. In this course, personas are used to provide context and relevant examples for four specific

hospitality fields: Event Management, Culinary Science, Hotel Operations, and Restaurant Management. For each of the four fields, three personas are introduced and referenced throughout the course, representing an early-career position, a mid-career position, and an advanced career position. By providing industry-relevant examples and scenarios that represent potential career paths centered around these personas, the course design makes general professional development instruction specific for students in all four hospitality fields, reducing the extraneous processing required to connect general guidance to field-specific practice.

Personas can also provide narrative coherence by organizing information into structured, recurring contexts that support schema development [10]. An example of personas supporting narrative coherence comes from a graduate Brewing Science and Operations program course designed to bridge online coursework with real-world commercial brewing environments. To support this transition from theory to practice, an animated persona, a beer can character named “AU Brew,” functions as a consistent narrative guide throughout the course. Unlike the role-based personas in other examples, AU Brew does not represent a professional identity; instead, it functions as a narrative anchor for coherence and continuity across modules. This distinction illustrates that persona-based design encompasses both professional role representations and narrative guides, with each activating different aspects of the engagement framework.

AU Brew introduces the practicum by framing the purpose, scope, and expectations of the experience, emphasizing its grounding in cooperative education principles and its integration of academic learning with professional practice [4]. Through narration, AU Brew contextualizes the practicum as an opportunity for students to apply brewing science concepts in authentic settings, collaborate with faculty and industry partners, and engage with professional organizations such as the Brewers Association and commercial breweries. This framing establishes a coherent storyline that connects students’ prior online learning to their experiential work in the field. The persona provides a stable professional perspective that frames learning goals, situates expectations, and supports learners as they integrate classroom concepts into practical environments [4], [5]. This example demonstrates how animated personas can function as cognitive and contextual anchors, supporting coherence and relevance in online-to-experiential learning transitions.

Visual and Auditory Persona Design

Multimedia personas can further enhance germane processing when visual and auditory elements align with evidence-based design principles [7]. This informed the development of a special observation course in an online Speech, Language, and Hearing Sciences program. In this course, a consistent set of animated characters was used across modules to demonstrate course concepts such as target behaviors, goal writing, material selection, and data collection. By keeping the setting and characters consistent, the course design reduces the need for students to reorient to new contexts and supports schema construction by letting them observe how course concepts build on each other within a continuous clinical narrative. As the final course in the program, this narrative continuity also activates prior learning, giving students a framework to integrate and apply knowledge developed across earlier coursework. The animated scenarios further support this by asking students to make clinical decisions within a controlled, zero-stakes environment, allowing them to practice professional judgment without the pressures of a live clinical setting.

Social and Teaching Presence through Personas

Personas can also operationalize teaching presence — the instructor’s role in shaping discourse, guiding inquiry, and offering direct instruction [2]. In a master’s-level social work course, for example, a persona representing the instructor was embedded throughout the course. The course covers extensive historical context related to the evolution of mental health frameworks, and the instructor wanted a clear way to distinguish personal interpretations and contemporary reflections from the historical record itself. Using character animation software, the creative team (under the guidance of an instructional designer) created an animated character based on the instructor’s likeness and paired it with a custom, visually distinct callout box in the online course. This design choice signaled to students that these moments reflected the instructor’s interpretation rather than an objective historical narrative, giving the instructor a recurring, visible channel for interpretive commentary distinct from the historical record. The primary goal was to support critical thinking by helping students differentiate between historical accounts and scholarly interpretation while maintaining clarity and transparency in course content.

In addition to supporting cognition, personas can reduce the psychological distance that often characterizes online environments. Social presence is central to sustained engagement [2], [9], and personas humanize digital instruction by modeling voice, perspective, and lived experience. In a cross-disciplinary entry-level course on mass timber systems, students engage with interconnected industry personas representing key roles across the supply chain, spanning forest management through design and construction. This grant-funded course incorporates a mix of static and animated personas to bring content to life and provide context across the different disciplines to help ensure students have insights into each field of expertise. A forester, construction manager, architect, structural engineer, and landscape designer each approach shared course topics from their distinct disciplinary perspectives, spanning sustainability, construction, design, structural performance, and site integration. Importantly, these personas reappear across multiple learning modules rather than being limited to isolated case examples, allowing students to encounter each issue through different professional lenses over time. As students revisit course topics through these recurring perspectives, they begin to understand how disciplinary roles lead to different interpretations of the same design, construction, or environmental challenge. As a result, learners develop a deeper understanding of mass timber as an interconnected socio-technical process while also strengthening engagement through exposure to authentic, human-centered perspectives embedded throughout the course. This aligns with situated learning theory, which emphasizes that knowledge is developed through participation in socially and contextually grounded practices rather than through decontextualized content alone [5].

Engagement and Technical Complexity

The persona-based engagement framework demonstrates how instructional personas can be implemented across varying levels of technological complexity while maintaining consistent mechanisms. Rather than representing discrete or hierarchical modalities, the model reflects a continuum of design approaches that support learner engagement through structured social, cognitive, and contextual processes in online learning environments. (See Fig. 2.) Prior research in higher education online learning emphasizes that engagement is shaped more by instructional design, social presence, and cognitive presence than by technological sophistication alone [2]. This holds across AI-supported environments as well, where interaction design and narrative structure remain central to sustaining engagement [1].

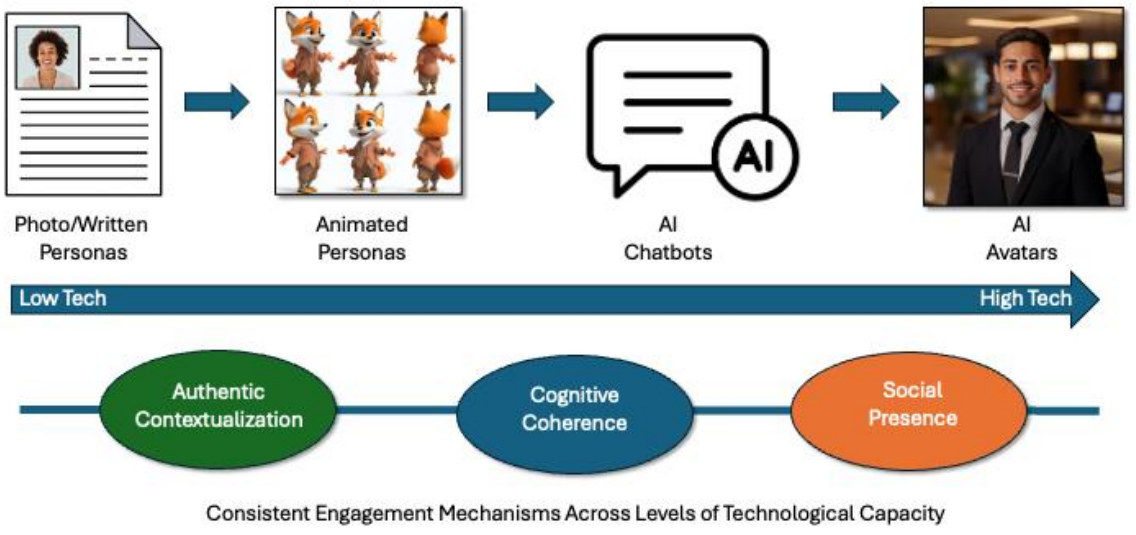

Fig. 2. Continuum from Written Personas to AI Avatars
The scenarios illustrate that personas can be implemented along a continuum of design approaches—from written narratives to AI-enabled avatars—while activating consistent pedagogical mechanisms.

At the lowest level, written narrative personas provide foundational contextualization by situating abstract concepts within relatable human scenarios, consistent with research showing that contextual grounding supports comprehension and meaning-making in online learning environments [3]. As implementation increases in complexity, recurring case-based personas supported by visuals enhance

narrative coherence and support schema development through sustained exposure to consistent characters and contexts [7], [10]. Instructor-recorded video personas extend this approach by modeling disciplinary reasoning and professional identity through voice, presence, and expressive communication, aligning with findings that instructor presence strengthens engagement and reduces psychological distance in online learning [9]. Interactive multimedia scenarios further enable applied decision-making by embedding learners in dynamic, branching environments that simulate authentic professional conditions, reflecting evidence that simulation-based and immersive learning environments enhance cognitive engagement and transfer [8]. At the highest level, AI chatbot personas support iterative dialogue and adaptive feedback, consistent with emerging research demonstrating that AI-mediated systems can enhance personalization, engagement, and formative learning support in higher education contexts [14]. Across all levels, engagement is driven by shared mechanisms of contextualization, cognitive organization, and applied reasoning, demonstrating that pedagogical effectiveness depends on consistent presence-driven instructional design rather than technological complexity alone. (See Table 1.)

Table 1. Scalable Engagement Model for Online Learning: Levels of Implementation

Level of Implementation	Technological Complexity	Engagement Mechanism
Written narrative	Low	Contextualization and relevance
Recurring case study with visuals	Low-Moderate	Narrative coherence and schema support
Instructor-recorded video	Moderate	Modeling reasoning and professional identity
Interactive multimedia scenario	Moderate-High	Applied decision-making
AI chatbot and avatar	High	Iterative dialogue and adaptive feedback

Future Directions

AI chatbots and avatars open new possibilities for course-specific persona implementation, extending social presence through adaptive dialogue and formative feedback [6], [13] and — in immersive learning environments — embodying personas as interactive avatars within extended reality (XR) experiences. For example, in an Occupational, Career, and Placement Services course, students evaluate the accessibility and appropriateness of real-world job sites for individuals with disabilities as part of their professional preparation. The XR experience is modeled after the Auburn University Human Resources (HR) department, allowing students to explore a simulated workplace environment they are likely to encounter in practice. Within this setting, a human-appearing avatar assumes the role of an HR manager, welcoming students to the space and responding to questions about the job position being evaluated. This humanoid avatar functions as an advanced persona within the framework, supporting situated learning through authentic context [5], reinforcing cognitive coherence by embedding evaluation tasks within a realistic narrative [10], and enhancing social presence through voice-based, interactive communication [2]. As illustrated in the framework matrix, this XR implementation demonstrates how advanced and AI-enabled personas can activate the same engagement mechanisms as lower-tech persona approaches while also expanding opportunities for interaction, immersion, and experiential practice [8].

Other implementations apply the same engagement mechanisms through conversational rather than embodied AI personas. For a hospitality management program, course designers are developing a virtual hotel concierge trained on video interviews of multiple hospitality professionals, capable of responding verbally to student questions through either a spoken or typed interface. Key segments of individual interviews will be used within a virtual tour of the Auburn University Hotel and Conference Center. The virtual concierge, however, will draw on the full content of these interviews, enabling it to respond to questions that span multiple departments, require comparison, or extend beyond what the tour clips cover.

Beyond traditional higher education, persona-based approaches are increasingly relevant in professional development contexts, where employees benefit from the same mechanisms of contextualization, cognitive organization, and social presence that support student learning. For example, in a workforce training program, an AI chatbot persona trained on facilitator rubrics and

exemplar submissions engages employees in structured dialogue as they develop professional program assessment plans, offering formative feedback on alignment, clarity, and completeness before formal facilitator review [6], [13]. As AI-generated personas become increasingly lifelike in voice, expression, and responsiveness, the boundary between human and digital interaction will continue to narrow across professional development and traditional learning environments, raising both the potential for deeper engagement and new considerations around transparency, trust, and ethical design.

Conclusion

The effectiveness of personas depends on pedagogical intentionality, not on delivery modality. Across the examples in this paper — from a written persona in an undergraduate management course to an XR avatar in an HR simulation — the same engagement mechanisms recur: authentic contextualization [3], [5], cognitive organization through narrative structure [10], perspective-taking across disciplinary roles [12], and multimodal alignment that reinforces a consistent persona-driven narrative [7]. AI extends what is possible at the high end of the continuum but does not alter the underlying theory [6]; the engagement work is done by the design, not the technology.

As persona-based approaches expand into professional development and workplace learning, these principles hold. What changes is the design challenge: as AI-driven personas become increasingly lifelike, instructional designers will need to address transparency, trust, and ethical intentionality with the same care they bring to pedagogical alignment. The line between human and digital interaction will continue to narrow; the underlying pedagogy does not have to.

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