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Navigating the Terrain:

Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

Metahuman: Bridging the Skills Gap Through Immersive Technology

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In contemporary education, there is a growing recognition of the importance of preparing learners with essential soft skills and the ability to engage in safe-to-fail tasks. Introducing the concept of failing safely and practising complex conversational skills in a controlled, virtual environment is crucial for students to effectively apply these skills in real-world situations (Korhonen et al., 2023).

Our project, titled Metahuman, introduces an AI-powered simulation-based learning experience where learners interact with 3D virtual humans in real time. These virtual humans serve as guides and facilitators, simulating diverse interpersonal scenarios encountered in professional settings. This approach is rooted in simulation-based learning, where learners can explore and engage in various scenarios without the risk of real-world consequences (Chen & Lu, 2022). The Metahuman is designed with dynamic personalities that emotionally respond to learner input and feature realistic voices; these adaptive, simulated environments have been shown to foster critical thinking and professional conversation skills (Ruokamo et al., 2023).

One application of Metahuman is within the healthcare sector, where nurses (learners) can practise screening a patient (Metahuman) for Tuberculosis in a virtual clinic. Nurses learn to navigate complex patient scenarios, building their skills and confidence in a controlled setting. This experience highlights how simulation-based learning can enhance competence and preparedness for real-world challenges, as discussed by Wu and Yu (2023).

Central to the Metahuman experience is an AI-driven mentor that delivers contextual feedback in real time, aligned with specific learning objectives and competency frameworks. These frameworks and objectives provide safeguards for how the Metahuman interacts with learners, ensuring that the scenarios presented are both relevant and educationally sound. Robust prompts designed by educators and learning designers govern the interactions between learners, the Metahuman, and the AI mentor. This structured interaction enables learners to receive personalised guidance, enhancing skill acquisition and reflective practice. Automated transcripts of these interactions capture learning outcomes, providing evidence of learner progress and foster continuous improvement (Niu et al., 2023). These transcripts serve as valuable resources for self-reflection and feedback for both learners and educators, and allow learners to deepen their understanding of the skills practised in the scenarios (Wu & Yu, 2023).

To further support the educational process, Metahuman includes prompt and virtual human templates that allow for rapid development of diverse scenarios. This flexibility enables educators to tailor learning experiences to specific needs, making it easier to integrate Metahuman into various educational contexts.

The platform's accessibility through web browsers, without requiring additional installations, supports cost-effective scalability and broad adoption across different settings. This ease of access ensures that Metahuman can be integrated into diverse learning environments without significant technical barriers (Chen & Lu, 2022).

This poster presentation will showcase Metahuman's key features and functions, emphasising its potential to revolutionise soft skills education through safe-to-fail learning environments. The presentation will also provide insights from current implementations across the health, business, and marketing sectors, highlighting user feedback and outcomes. By aligning with well-established concepts

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such as simulation-based learning, Metahuman positions itself as a pivotal tool in the future of education, contributing to the ongoing discourse on educational transformation and digital innovation.

Keywords: Metahuman, AI, immersive learning, simulation-based learning, soft skills education, virtual reality, educational technology, future of education

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