



Augmented reality in the LINDSAY virtual human: adding a new dimension in tablet-based medical education

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Abstract

Imagine you are a medical student at the University of Calgary. As part of your training in anatomy, you are looking at a cadaver. However you are not able to understand the physiological aspects that take place within the body. The problem is the cadaver is essentially dead human tissue. Is there a way to expand your view, to bring this body back to life - in a virtual world? You take out your iPad and run the LINDSAY Atlas. The Atlas' augmented reality (AR) feature merges the virtual world and the physical world, caught in real time by the built-in camera¹! You now begin to see the inner workings of a live human, superimposed on a cadaver; the beating heart inside a dead chest cavity, a cut on a lifeless arm being clotted, a diseased organ being healed by the body in front of your eyes. But you want more! You lift a finger and use gestures to interact with and explore different anatomical parts in 3D space. This increases your understanding of integrative physiology. Thus LINDSAY's combination of AR and mobile touch technology enhances your medical training and prepares you for the practical new world of medicine.

References

1. Jacob, C., von Mammen, S., Davison, T., Sarraf-Shirazi, A., Sarpe, V., Esmaeili, A., Phillips, D., Yazdanbod, I., Novakowski, S., Steil, S., Gingras, C., Jamniczky, H., Hallgrimsson, B., and Wright, B. LINDSAY Virtual Human: Multi-scale, Agent-based, and Interactive. In: J. Kolodziej, S. U. Khan and T. Burczynski, editors, *Advances in Intelligent Modelling and Simulation: Artificial Intelligence-based Models and Techniques in Scalable Computing*, Springer, 2012, pp. 327-349.