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Leading-edge realism across pedagogical boundaries: Transforming learning through augmented reality for professional practice in contemporary pediatric orthopedic and trauma care

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Pediatric orthopedics is a highly specialized and distinctive field of pediatric practice. This contemporary module aimed to evaluate critically, evidence-based care and management associated with pediatric orthopedic and traumatic conditions, including rehabilitation and future –focused transitional care. Developed collaboratively with senior clinicians, nurses, academics and teaching technologists this innovative module sought to deliver high quality professional evidence-based education. The pedagogical strategy proposed to blend traditional teaching approaches with up-to-date and leading edge technology which actively and rapidly engaged students, whereby learning is enhanced in real-time, promptly immersing students with deeper involvement in situated learning experiences. Therefore first generation users have been introduced to 'Augmented Reality' during the delivery of this post registration Pediatric Orthopedic and Trauma Module. Augmented Reality was co-constructed collaboratively as a pedagogical strategy which reflects a direct or indirect view of a physical real-world environment mediated through the use of mobile technology. Visual elements were augmented by computer, generating sensory inputs aiming to enrich learning through real-world visualization and understanding of related pediatric trauma and orthopedic conditions such as musculo-skeletal anatomy, blood flow, fractures and images. By 'tapping' hot spots' on manikin images these could be manipulated to zoom in or rotate, coupled with associated video clips, MCQ and text, all of which strengthen and deepen learning for clinical practice. In essence Augmented Reality provided rich details normally hidden in one dimensional images or text and by crafting existing images and blending new information thus reflecting 'leading edge realism techniques'. Furthermore *in-vitro* learning prepares students/practitioners for professional life whereby they can be exposed to quite complex learning and skills safely.

Biography

Carol Chamley is currently working as Senior Lecturer /Nurse Researcher at Coventry University and a clinical background in pediatric trauma orthopedics, neurology and infectious diseases including caring for children with HIV and AIDS, having trained as a pediatric nurse at Great Ormond Street London. Currently, he is being engaged in several Post-doctoral research projects including Compassionate Practice Education, Disruptive Media, CAMHs, Values Exchange and Recruiting to Values having successfully worked on a collaborative service improvement project between Coventry University and University Hospitals Coventry and Warwickshire Children's Emergency Department.

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