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Expert in My Pocket: Creating First Person POV Videos to Enhance Mobile Learning

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Worldwide, there has been a rapid increase in both the use of mobile technologies as a conduit for student learning and the use of wearable cameras to record sporting and recreational activities. The Expert in My Pocket project (EiMP) has combined these two technologies to produce a repository of freely available short videos and supporting materials to enhance student development of psychomotor clinical skills. The videos are presented from a first person point of view (1PPOV) with expert health professionals ‘thinking aloud’ as they demonstrate selected skills. Research indicates that students and educators overwhelmingly support the concept of EiMP videos and more importantly value the 1PPOV as an authentic view. This paper demonstrates the techniques and equipment employed to produce these videos, which consisted of a chest or head mounted GoPro camera operated via an iPad. Additionally, the paper explains another innovative feature, Quick Response (QR) Codes, that when linked to the videos placed on equipment assists with “just in time” mobile learning.

Introduction

Nursing and paramedic students require extensive preparation and training to attain competency in clinical skills (Cardoso et al., 2012; Hibbert et al., 2013; Lynch, Barr, & Oprescu, 2012). Ensuring adequate competency prior to students being introduced to the clinical setting may improve patient safety (Cardoso et al., 2012; Lau, Chuk, & Wei So, 2002) and health outcomes (Hibbert et al., 2013; Levett-Jones, Gersbach, Arthur, & Roche, 2011). Teaching strategies for efficient clinical skill acquisition should allow students to experience situations similar to clinical settings (Blum, Borglund, & Parcells, 2010; Cardoso et al., 2012; M. M. Hansen, 2011) in order to gain a deep understanding of context dependent concepts (Lynch et al., 2012). A learner-centred approach focused on knowledge conversion to experience through repetition and expert guidance in a supportive environment is acknowledged as an effective teaching strategy for clinical skills (Cosman, 2013; Joy & Nickless, 2008; Lee, Boyd, & Stuart, 2007). However, the teaching of clinical skills in a tertiary environment can be impacted by growing student numbers (M. M. Hansen, 2011; Holland et al., 2013; Kelly, Lyng, McGrath, & Cannon, 2009) and restricted access to expert performance (M. M. Hansen, 2011; Holland et al., 2013; Kelly et al., 2009). Information and communications technology (ICT) can provide some solutions to this challenge (Arguel & Jamet, 2009).

Tertiary institutions increasingly use ICT based solutions for health education delivery (Arguel & Jamet, 2009). ICT based solutions are documented as appealing to many students who are familiar with technology use from a young age (Duncan, Yarwood-Ross, & Haigh, 2013; Kelly et al., 2009). Students may even actively demand adoption of interactive and self-directed learning elements in health curricula (Chan, 2010; Duncan et al., 2013; Kelly et al., 2009). In line with this, there appears to be an increasing shift towards online (Duncan et al., 2013), mobile (M. M. Hansen, 2011; Pimmer, Linxen, Gröbbiel, Jha, & Burg, 2012) and handheld technology (Koeniger-Donohue, 2008) use in healthcare education. This shift towards blended learning methods (Chan, 2010) may improve knowledge, skill and performance of students in health sciences. While utilising videos for teaching and learning clinical skills in paramedic and nursing sciences is an emerging field of research (Chan, 2010; Hibbert et al., 2013), literature on acquisition of clinical skills by students in health disciplines utilising ICT solutions is scarce (Hibbert et al., 2013).

Videos can be used to support various student learning styles (Chan, 2010; Duncan et al., 2013; Roshier, Foster, & Jones, 2011). Some students appreciate the familiarity of videos from the computer game environment and benefit from video learning resources that provide a socially supported setting that is safe to participate in (Chan, 2010; Kelly et al., 2009). Students regularly access videos using mobile multimedia technologies for private use (Hibbert et al., 2013; Pimmer et al., 2012). It has been
demonstrated that students who have access to videos following initial clinical skill training maintain higher levels of competence (M. Hansen et al., 2011), value the use of multimedia and the ability to download videos on demand (Everett & Wright, 2012). By using technology to support pedagogically sound learning activities, students may be able to faster acquire and master specialised information (Duke, Harper, & Johnston, 2013). Provided high quality downloadable educational content is available (M. M. Hansen, 2011; Roshi er et al., 2011), mobile learning using videos could be a valuable resource for teaching and learning in health related educational programs.

Experiential learning

Educational theory supports video use for clinical skill acquisition (Holland et al., 2013). Literature confirms videos as an equal or more effective teaching method for advanced clinical skills compared to traditional face-to-face instructions in terms of skill acquisition (Cardoso et al., 2012; M. M. Hansen, 2011; Hibbert et al., 2013; Holland et al., 2013; Kelly et al., 2009). The student-centred experiential learning approach recognises the complementary role of technology and pedagogy in education, advocating for a technology-rich learning experience (Lynch et al., 2012). Videos address the observation element of the four step cyclical learning process of Kolb’s experiential learning theory (Kolb, 1984). Furthermore, video use is underpinned by self-regulated learning theory (Brydges, Carnahan, Safir, & Dubrowski, 2009), providing students with “access to information resources upon which processes of construction must draw” (Butler & Winne, 1995, p.275). Forming connections between nodes of learning, videos, face to face, texts, is intrinsic to developing clinical competencies in the modern pedagogy (Lau et al., 2002; Siemens, 2005).

Documented advantages of video usage

High quality videos can be used as educational resources with multiple benefits for teaching and learning clinical skills including: greater capacity to link theory and practice, potential to stimulate deep learning, engagement and critical reflection (Lau et al., 2002; Lynch et al., 2012; Roshi er et al., 2011). Students may prefer video instructions due to greater flexibility, the opportunity to self-manage and to engage in learning on several occasions over time (Kelly et al., 2009). Repetitive viewing allows pause and replay of content as needed which assists student understanding and improves information retention (Whatley & Ahmad, 2007). Video use not only allows students to learn at their own pace, own time and in the comfort of their own environments, but could also encourage independent learning. This enables increased autonomy and sense of control over the learning process (Kelly et al., 2009). For example, students can be more efficient, refer to videos for aspects they have questions about and use videos as a visual reference (Mehrpour, Aghamirsalim, Motamedi, Ardeshir Larijani, & Sorbi, 2013). In this regard videos are useful for viewing correct skill performance techniques, observing interactions with real patients, and detecting differences between normal and abnormal clinical signs (Hibbert et al., 2013). Other documented advantages of using videos for teaching clinical skills include supporting students to construct knowledge interactively and reality depiction under controlled conditions (Cardoso et al., 2012).

Research suggests use of videos as a practical teaching method with low production costs, wide reach, high information quality and variety of use options within a group or individually (Cardoso et al., 2012). This technique allows students to be introduced to the clinical setting in a safe manner that is conducive to reducing stress and enhancing quality of care (Cardoso et al., 2012). When downloaded to mobile devices, video instructions can provide an especially useful portable, ‘just-in-time’ learning resource (Hibbert et al., 2013).

Project background

Despite established advantages of using videos for learning of clinical skills, prior to the video resources produced by the Expert in My Pocket project, literature review and expert consultations concluded that no standardised evidence-based video resources existed for teaching paramedic or nursing clinical skills across Australia. Concurrently, feedback from educators and students alike evidenced a lack of common understanding about how to perform and teach specific clinical skills. (EIMP, 2015) A pilot project conducted at the University of the Sunshine Coast (USC) on teaching clinical skills using short videos filmed from a 1PPoV established the student satisfaction and demand for standardised, online skill-specific video resources that students could consult ‘just in time’ such as before exams or training in