Chapter 93
The Use of Reusable Learning Objects to Enhance the Delivery of Veterinary Education:
A Literature Review

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ABSTRACT

The increased demand from learners in higher education to access resources flexibly has resulted in considerable development in the use of Reusable Learning Objects (RLO) via a blended learning format across the sector. This critical review sets out to identify what is currently known about RLO and how those concepts can be applied to veterinary-related degree courses. The review provides an insight into an aspect of blended learning which is currently limited in terms of published research. The effect of computer confidence, students' choice to use and the impact on student performance are some of the variables which have been measured to date. The approach to RLO by students from different courses may vary, but prior experience of technology, alignment of content and availability of technical support are some of the key drivers for usage and reuse. A positive effect is likely to occur following RLO use because those students have adopted a process of active engagement, which the authors know can bring about a deeper approach to learning.

AN INTRODUCTION TO REUSABLE LEARNING OBJECTS IN VETERINARY EDUCATION

Reusable Learning Objects (RLO), also known as Shared Content Objects (SCO) are self-contained digital resources such as video, audio, web-pages, documents and graphics which are stored and accessed independently in support of a blended learning approach. This feature of technology enhancing learning is also shared by Open Educational Resources (OER) as defined by Clements and Pawlowski (2012). Kay and Knaack (2007) expand on this definition by saying that RLO are interactive tools which go beyond simply supporting learning, but enhance and amplify the cognitive processes of learners. As yet there is no evidence to suggest that this applies to learners within veterinary education blended learning and therefore to promote effective practice in this subject area, the authors set out to better understand why and how some students in veterinary education would choose to access web-based RLO and others choose not to and secondly, if the performance in summative assessment by students in veterinary education is affected by the introduction of web-based RLO.

REVIEW METHODOLOGY

Literature was selected firstly on the basis of its relevance to RLO, secondly in terms of the course areas from which participating students were drawn and lastly, in terms of its relevance to the enhancement of higher education. The authors searched for literature using Google Scholar and their home institution's own search engine (FindIt@Harper) which searched EBSOHost, ScienceDirect and Wiley Online databases to obtain 21 research publications and nine sector reports. The search terms included: reusable learning object, veterinary blended leaning, veterinary online learning, science reusable learning objects and sources filtered for full text copies.

In searching for papers to include, only one was found relating to Veterinary Education (Short, 2002) and another concerning Animal and Agricultural Sciences (Hoover & Marshall, 1998). Other subject areas in which studies have been undertaken in relation to RLO and reported in this review include Biology (Kay and Knaack, 2007), Chemistry (Windle et al., 2011; Kay and Knaack, 2007), Physics (Kay and Knaack, 2007; Kurilovas et al., 2011), Human Nursing (Windle et al., 2010; Keefe and Wharrad, 2012; Blake, 2010; Lymm et al., 2008), Human Anatomy (Johnson et al., 2013), Human Medicine (AAMC, 2007; Blake, 2010), Health and Social Sciences (DoH, 2011; Kirkwood, 2008; Evans, 2013; Boyle et al., 2003), Science (Littlejohn et al., 2010; Kirkwood, 2008), Business (Littlejohn et al., 2010), Maths (Kurilovas et al., 2011), Accounting (Concannon et al., 2005), Engineering (Littlejohn et al., 2010), Computer Science (Kay and Knaack, 2007) and lastly International Culture (Sandlin et al., 2014). In the main, these are STEM subjects with the majority offering insights into the medical education sphere. The sample sizes utilised in these studies, where specified, contained a minimum of 80 students, with one exception being the investigation by Kirkwood (2008) where data was collected from just ten individuals. The largest sample was associated with the study by Littlejohn et al. (2010), in which over 2,000 students participated and, while we know that the greater the sample size, the greater the chance of detecting a true treatment effect (Petrie & Watson, 2006), such a large scale study may not allow us to see the nuances of RLO use which are of interest to practitioners.

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