ABSTRACT

This paper reports on attempts to incorporate creative visual literacy, by way of student owned technology, and sharing of student-generated multimedia amongst peers to enhance learning in a first year human physiology course. In 2013, students were set the task of producing an animated video, which outlined the pathogenesis of a chosen disease. Students were then encouraged to view each other’s videos. Students in the same course in 2012 engaged in a purely written, non-shared task. The depth of topic understanding did not change between 2012 and 2013. Moderating for cohort variation, students in 2013 showed poorer overall learning outcomes than students in the 2012 cohort. The authors speculate that the peer mediated aspect of the learning activity failed, and that the video task was disruptive to wider learning, due to it being time consuming and unfamiliar to students.

Keywords: Mobile Learning, Peer Mediated Learning, Student Generated Learning, Student Generated Multimedia, Visual Literacy

INTRODUCTION

The way in which university students engage with their typical course syllabus in the electronic age has changed dramatically (Johnson, Adams Becker, Estrada & Freeman, 2014). Among these changes, the digital environment enables a large potential for visual literacy as well as for peer mediated learning to be incorporated into the learning process (Brandon & Hollingshead, 1999; Dyson, 2012; McDonald & Hoban, 2009). This article explores the efficacy of attempts to introduce these concepts into the teaching of health sciences.

The concept of visual literacy has itself been the subject of much scholarship. In order to be visually literate, students are required to be proficient in their ability to identify the
message behind a constructed image, as well as produce material with a visual component that conveys an intended message of its own (Avgerinou, 2009; Hattwig, Burgess, Bussert & Medaille, 2011; Metros, 2008). Adhering to this thought: if one were to consider a literate person as one who can interpret and convey meanings using language and its associated alphabet, then a visually literate person is one who can do the same with purely visual cues.

Much literature points toward the beneficial impact of visual literacy in education. Wakefield, Frawley, Dyson, Tyler and Litchfield (2011) trialled the use of student generated screencasts in an introductory accounting course. The authors suggest, “the screencast project facilitated higher student engagement and performance.” Wilson, Niehaus, White, Rasmussen and Kuchel (2009) set ecology students the task of making a short documentary that communicated the science behind an environmental issue, and found that the unique research and production process prompted additional learning. Rossetto and Chiera-Macchia (2011) report that student-generated graphic narratives, accompanied by Italian annotations, also help English-speaking students learn Italian as a second language. Furthermore, learners with low prior knowledge in a field, learn descriptive facts in that field better when they are presented alongside still and animated images (Chanlin, 1998). These findings would appear to support the notion that student generated visual texts, which explain the meaning behind concepts, aids the learning of those concepts.

Other studies provide insight into the value of visual communication specifically for higher education in biological and health sciences. Watson and Lom (2008) integrated an image portfolio assignment into their Developmental Biology course, with the aim of encouraging students to communicate using images. The authors report that the use of visual literacy to communicate scientific data “…stimulated confidence in the student’s own evaluations of current scientific literature to assess research conclusions.” Hall and O’Donnell (1996) set students the task of learning a body of content pertaining to the autonomic nervous system in either the form of a knowledge map or a 1500 word passage, and tested both groups on the content two days afterward. Students who had learned from the knowledge map not only displayed better recall, but reported having better concentration and motivation around the test as well. Thus, visual literacy seems specifically relevant to health science education.

There is also extensive evidence supporting the benefits of peer mediated learning in tertiary education. In this article we take “peer mediated learning” to mean that in which students share their knowledge and understanding with one another, as a means to further learning or understanding of relevant content. Trautman (2009) reports that students in an undergraduate science course who either reviewed their peer’s toxicology reports, or had a review done for them, made more revisions to their own paper, than those who did not engage in peer review at all. Hanson (2011) asked students of a dental hygiene course to present to their peers each week in an online blog about problems in community oral health, and to also post a reply to two other students’ posts in that time. The blog project was found to foster greater levels of critical discussion about relevant topics amongst involved students. Peer mediated learning, as it is seen in these examples, would appear to help students in coming to conclusions regarding learning topics, and thus develop a greater understanding of course content.

Visual literacy in the context of peer mediated learning seems to be of great benefit. McDonald and Hoban (2009) utilised student generated “Slow Motion Animations” (“Slow-mations”), to integrate both visual literacy and peer mediated learning into the learning syllabus of a university course. Based on qualitative data taken from interviews, concept maps and the knowledge conveyed in the animations themselves, the authors conclude that students, who created their own animations, viewed their peers’ animations and then if necessary modified their own animations, increased their own knowledge of the related scientific topics. Dyson (2012) also found that student generated mate-
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