Blended Media: 
Student-Generated Mash-ups to Promote 
Engagement with Science Content 

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ABSTRACT 
The aim of this study was to gather university student perspectives on a new type of assessment task requesting them to create “blended media”. Blended media is a new form of student-generated multimedia whereby students devise a narration or voiceover to explain a science concept complemented by any combination of visuals such as video, animation or still images that are original or created by others to enhance the explanation. In the assessment task all the students successfully made a blended media product in their own time using their own technology and only requiring one session of media instruction. Surprisingly, the three case students who volunteered to be interviewed stated that they had never made a media product for a science assignment before and enjoyed creating this new form of assignment because they found it engaging and interesting. It also required them to represent content in new ways. Blended media is an innovative way for students to make digital media that engages them with content and as an assessment task could be used in any subject. 

KEYWORDS 
Blended Media, BYOD, Communication, Engagement, Explanations 

INTRODUCTION 
The tsunami of technological advances, especially in mobile devices, is enabling students in schools and universities to create a variety of innovative digital media to share with others. It is therefore not surprising that of the six key trends predicted for the next five years in the 2014 Horizon Report for higher education (Johnson, Adams Becker, Estrada, & Freeman, 2014), the two most prominent are students as content creators and students’ use of social media for learning. The Horizon Report predicts that there will be a pervasive “shift from students as consumers to students as creators” (p. 14) that will drive change in higher education within 3–5 years. Whilst we agree with the prediction, we disagree with the timing—it is happening now. Examples can be found around the world as evidenced in a recent edited book that includes chapters detailing ways that tertiary instructors have their students create a digital media product as an assignment (Hoban, Nielsen, & Shepherd, 2016). Further, these examples cross a range of science subjects, for example, biochemistry (Vanderlelie, 2016); engineering (Belski & Belski, 2016); technology (Jablonski, 2016); pre-service science teacher education (Amos & Campbell, 2016; Keast & Cooper, 2016; Kidman, 2016); environmental biology (Rayner, 2016) and pharmacology (Pearce, 2016). 

DOI: 10.4018/IJMBL.2016070103 

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This shifting of responsibility from content consumers to content creators is being fuelled by the accessibility of mobile technologies that include various affordances for representing content. In particular, access to personal technologies such as smart phones and tablets serve to increase students’ capacity and mobility to create media anywhere and anytime (Cochrane, 2011; Jones & Issroff, 2007). According to Traxler (2010), mobile technologies provide users with more ownership of knowledge and responsibility for learning since “mobile devices demolish the need to tie particular activities to particular places or particular times….mobile technologies have converged with the wider user-generated movement associated with Web 2.0 rhetoric and technologies” (p. 151-155). Whilst students are increasingly creating digital media, it is mainly for the purpose of uploading to social media sites such as Facebook, YouTube and Instagram. However, there are several important reasons why students in schools and universities should be encouraged to create digital media for educational purposes.

First, creating digital media is a way to engage students with content. Blumenfeld, Kempler and Krajcik (2006) define engagement as “students’ willingness to invest and exert effort in learning …the use of strategies can be superficial or deep …deep level engagement involves the use of elaboration and organizational strategies as students try to connect new ideas to old” (p. 475). In designing and creating a digital product to represent content, students first need to understand the content and then make decisions about how to synthesise and represent the information into a coherent media product. This process requires organization and decision-making skills consistent with Blumenfeld et al.’s definition of engagement. Students are also usually willing to invest their own time in using personal technology such as smart phones and computers. All such devices have access to free media-making software, which, further, gives students a sense of ownership and authority in representing content.

Second, in making decisions about how to create or use various forms of digital media, students develop important digital literacy skills in relation to modal awareness (Macken-Horarik, 2004). We believe that creating opportunities where our students use their own digital technologies to design and integrate different modes of representation is a good way for them to develop digital literacies, widely recognized as important for students in the 21st century (US National Research Council, 2012). Critically, developing modal awareness means that students understand how and why to use different modes for particular purposes, as well as how different modes offer affordances for effectively communicating ideas. Royce (2002) called this multimodal communicative competence. A mode is a “meaning-making system in order to articulate the meanings demanded by the social requirements of particular communities” (Kress, Jewitt, Ogborn, & Tsatsarelis, 2001, p. 43). Examples of modes for expressing meaning include writing, diagrams, graphs, gestures, music, layout, images (still and moving), 2-D and 3-D models as well as voice. Each of these modes or text forms can be manipulated digitally and integrated which, according to Prain (2006, p. 180), “alters the role of written language as the major or dominant medium of learning”.

Third, students’ access to media making devices, software and the internet is becoming increasingly easier and more available. Easy-to-use and free software programs are available on most computers to support students in representing their ideas, enabling them to integrate different modes such as text, sound, still and moving images in digital media such as animations, videos, screencasts and podcasts (Jones & Issoff, 2007). Further, “Bring Your Own Device” (BYOD) as a technology model is likewise becoming more common in learning environments in schools (Kong & Song, 2015; Song, 2014) and universities (Cochrane, Antonczak, Keegan, & Narayan, 2014; Falloon, 2015; Kobus, Rietveld, & van Ommeren, 2013), which then prompts instructors to develop opportunities to utilize the affordances of BYOD in teaching and learning. Using a preferred personal technology offers the possibility for students to develop additional communication and presentation skills if they are encouraged to share and justify their digital science explanations with peers. The affordances of Web 2.0 technologies enable students to disseminate their ideas more widely and seek feedback by uploading the digital media product to social media sites such as Facebook or YouTube.

Fourth, it has been argued that creating a digital media product to explain content is a good way for students to learn. Several research studies have monitored university students making simplified
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