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The literature landscape of blended learning in higher education: the need for better understanding of academic blended practice.

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The literature landscape of blended learning in higher education: the need for better understanding of academic blended practice.

If we are to realise the potential of blended learning in higher education then further research into academic practice and relevant academic development is essential. Our review of literature relevant to blended learning in higher education reveals an interesting scholarship landscape which when described in detail pointedly directs attention to the lack of literature seeking to understand academics' current blended practices. It is argued this is problematic in terms of formulating the required professional development and support. In essence, this paper uncovers the need for further research into understanding not only why academics may choose to engage in blended learning, but also, once engaged, why some choose to integrate technology to create transformative blends while others choose minimally impacting blends. This paper may interest those supporting academics in developing blended learning. It provides a guiding resource for both researchers into blended practices and those embarking on blended learning implementations.

Keywords: blended learning; academic development, academic blended practice, blended learning literature, blended learning research

Introduction:

Although blended learning has gained much popularity in higher education, academics' blended learning implementations are most often used for the purposes of efficiency and supplementation, with only a minority implementing approaches that fully exploit the potential of blended learning to enhance the learning experience (Hofmann, 2006; Driscoll, 2002). In effort to gain a better understanding of academics' design and implementation of blended learning, a literature search was undertaken using Thomson Reuters' Web of Knowledge citation database. These results were classified according to their main stated purpose, into categories and sub categories. A synthesis of key themes of literature typical to each subcategory provided a sense of the shape of the scholarship landscape of blended learning in higher education and revealed a deficiency in literature related to understanding academic practice. It is argued that this deficiency is a major

impediment to the realisation of the unfulfilled potential of blended learning in higher education. From this perspective, the paper makes a valuable contribution in the form of underscoring a pressing need for further research aimed at understanding the factors shaping academics current practices in blended learning. This paper is of interest to those supporting academics in blended learning design and as guiding resource for researchers into blended practices and novice blended learning practitioners.

Blended learning in higher education – a structured review of literature:

Thomson Reuters Web of Knowledge online academic citation index allows access to multiple databases and “covers over 12,000 of the highest impact journals worldwide, including Open Access journals and over 150,000 conference proceedings” (Thomson Reuters, n.d, para. 1). The term ‘blended learning’, although widely used, is not well defined. The definitions and understandings of the concept are many (Driscoll, 2002; Vignare, 2007). For the purposes of this paper, ‘blended learning’ broadly refers to the use of technology with face to face teaching. The Web of Knowledge was used to search blended learning literature on the 10 December 2011 using the terms ((blended learning OR hybrid learning) AND (university OR higher education OR faculty), all languages, literature included journal articles and conference papers, for all years, all databases. Using the Web of Knowledge was deemed to give a better perspective of the cross-section of literature than searching through a set of specific journals, in which the focus of the journal skews the content of articles in each journal. The search yielded 1172 results of which 827 were relevant. An initial survey of articles, taking note of primary stated purpose or aim of the article generated the categories and subcategories in table 1 below.

[Table 1 GOES HERE].

It should be noted that the categories are not mutually exclusive; there is some overlap of topic between them.

For example, many of the “how-to” case studies consider the student experience and some of the papers focusing on the student experience make a mention of the academic experience. Hence sorting each of the 827 relevant articles took place according to its main stated purpose or aim, this being the dominant content of the paper. The results of sorting are shown in Figures 1 and 2 below. Figure 1 shows the proportion of papers in each of the main categories: ‘how-to’ case studies, student focus and academic focus. Figure 2 shows the percentage distribution of papers into each of the theme subcategories of: student experience, effectiveness, assessment, case studies of courses (units), case studies of programs (degrees) or faculties; ‘why some do/don’t’ (facilitators and inhibitors for adoption) , professional development and differentiating usage.

[Figure 1 GOES HERE].

[Figure 2 GOES HERE]

From figures 1 and 2, several features of the landscape of blended learning in higher education literature can be identified. Firstly, the surveyed literature was dominated by the ‘how to’ category (65.9%). Within this category the broader context (program/faculty) cases (33.86%) and course cases (32.04%) made up the larger portion whilst assessment specific literature was sparse (3.51%). Secondly, the student focus formed a substantial 25.63% of articles surveyed, with the majority of articles in this category concerned with the student experience (17.65%). Lastly, and most significant to the concern for professional development expressed in this paper, it was very apparent that there was a deficiency in literature addressing issues related to academics’ practice with blended learning with 4.2% of 827 relevant results in this category. Notably, literature relating to factors influencing current practices was rare with 0.6% (one paper out of the surveyed 827) literature concerned with factors impacting on uptake of blended learning and a mere 0.12% of literature

explaining the differential usage (from supplementary-integrated) of blended learning.

The following literature snapshots for each category provide a synthesis of the key themes addressed by literature in that category and exemplify the style of articles found in each category.

Literature snapshot: student focus

The student experience

This subcategory was characterised by an examination of student attitudes, acceptance, perception, different levels of engagement, differing tool usage by different students and the challenges faced by students. Some papers compared student experiences of traditional instruction with those experiencing blended instruction, while others reported on solely blended environments.

Key findings revealed high student satisfaction with hybrid face-to-face and blended learning (Salamonson & Lantz, 2005). Using virtual learning environments, Richardson and Turner (2000) concluded student satisfaction was impacted by individual student differences relating to learning needs, experience of the tutor, nature of the material being covered, and the mix of blended learning to face-to-face interaction. The need for providing additional student support was needed to reduce reliance on teacher-led learning was a commonly encountered finding. Similarly, Lust, Vandewaetere, Ceulemans, Elen, and Clarebout (2011) revealed the need for students to be coached in metacognitive skills so that they were able to make best use of the learning tools available in blended learning environments. In Mitchell and Forer's (2010) study, student satisfaction with blended learning was similarly affected by students' preferred learning styles and their responses were coloured by their perception of the overall university experience. Again, face-to-face, teacher-led learning encounters were highly valued. Match between student expectations and experience of learning,

and level of expertise with technology, were found to correlate strongly with reduced risk of failure (Holley & Oliver, 2010).

Effectiveness

The concept of effectiveness in this subcategory of literature referred largely to learning performance as assessed by test scores (sometimes assessed by pre- and post- test) as well as student perceptions. Commonly the approach to determining effectiveness involved comparing learning performance and student reactions of ‘experimental’ group of students exposed to blended learning techniques with a ‘control’ group exposed traditional face-face teaching only. Some literature reported no difference in achievement between blended and non-blended groups, such as in Hsu and Hsieh’s (2011) study of the use of a web-based teaching module with nursing students, while many other studies reported better student performance and increases in student motivation and acceptance of blended methods (e.g. Vernadakis, Antoniou, Giannousi, Zetou & Kioumourtzoglou, 2011; EL-Deghaidy & Nouby, 2008; Haripersad & Naidoo, 2008).

In many studies of this subcategory the reasons for the extent of effectiveness were not comprehensively explored. The role of student characteristics, the context and the blended learning design, especially the degree of integration, were not sufficiently related to the concept of effectiveness of blended learning approaches.

Literature snapshot: ‘How to’

Broader context case studies

Case studies at faculty or program level predominantly detailed implementation often using an underlying framework or model. For example, Salmon, Nie and Edirisingha (2010) applied Salmon’s (2000) five stage model to the use of Second Life across three different disciplines finding “structured model for scaffolding

learning in groups has value in a 3D multi-user virtual environment such as SL” (p. 169); Beutelspacher and Stock (2011) used a basis of behaviourism, cognitivism and constructivism to construct InfoCentre, a collection of tools for content and collaboration, finding positive student acceptance overall but expressing perceptions of collaborative learning online were less positive, and perhaps indicating the need for more support in this area.

Case studies at institutional level, focused extensively on the challenge of implementing widespread change and adoption of blended learning practices. Institutional level case studies communicate the complexity of blended learning systems and sought to highlight the enormous challenge of achieving institution-wide adoption of effective practices. Typical of these articles, Jones, Chew and Blackey (2011), Engert and von Danwitz, (2004), Chew and Jones (2009), and Le (2008) provide a useful reference for other institutions undergoing similar processes. Most commonly reported elements of successful strategies included: development of a single, university wide blended strategy (Engert & von Danwitz, 2004), emphasis on education over technology, appropriate professional development to develop ‘e-competencies’ (Engert & von Danwitz, 2004), provision of a central, multidisciplinary support unit, along with personalised support for staff in different disciplines, use of peer recommendations and good practice to act as good examples, and the recognition of excellence in blended practice from management; availability of funding and readily available technical support.

Course specific case studies

Typically these smaller, more specific case studies describe a pedagogical framework such as Bloom’s taxonomy (De George-Walker & Keeffe, 2010), active learning (Shen, Wang, Gao, Novak & Tang, 2009) and collaborative knowledge construction (Zhao & Jiang, 2010) for the implementation of blended learning within courses. Rather than focusing on change as in broader case studies, these studies tend to focus on advantages

of the blended approach such as the ability to provide experiences that would not otherwise be possible (Sancho, Corral, and Rivas et al., 2006), flexibility, self-pacing and access (Jun & Ling, 2011; Sardesai & Kamat, 2011; Shen, Wang & Gao et al., 2009). These case studies detail the use of specific tools such as Wikis, online modules, blogs, learning management systems and reported generally positive experiences for both student and staff with the blended approach using such tools (Toboso, 2010; Verhaart, 2010; Perez-Marin and Pascual-Nieto, 2010). Some studies highlight the use of blended approaches to solve an existing issue in a course such as challenge of contexts such as large classes (Shen, Wang, Gao, Novak & Tang, 2009, Perez-Marin & Pascual-Nieto, 2010) or enhancing particular competencies required of the discipline (Hirama, 2010; Uren & Uren, 2009).

Assessment

Literature in this group described, and evaluated in terms of outcomes and student reaction, a (usually) technology driven assessment approach within either courses (e.g. Shih, 2011) or at institution level (e.g. Chew, Jones & Blackey, 2010; Luchoomun, McLuckie & Van Wesel, 2010). As in other cases in this subcategory, assessment literature provides a useful bank of ideas about how specific tools might be used to implement assessment in blended approaches. For example, Shih (2011) described the integration of Facebook with peer assessment in a college English writing class; Purvis, Aspden, Bannister, and Helm (2011) document the redesign of a teaching model to enable technology assisted strategies to be used. Flexibility, increased motivation, depth of understanding and critical thinking were commonly reported advantages of technology driven assessment (Purvis, et al., 2011; Shih, 2011; Wyllie, 2010). The necessity of supporting students to develop confidence and provide guidance emerged as a common finding (Purvis et al., 2011; Wyllie, 2010; Doolan, 2011).

At an institutional level, the view expressed by Chew, Jones and Blackey (2010, p.456) that “it is meaningless to embed new technologies but at the same time recycle the current ineffective assessment

practices” was echoed by others, as was the observation of Luchoomum, McLuckie, and Van Wesel (2010), that widespread adoption of technology assisted practices is challenging involving “considerable course realignment” and a shift in culture for tutors to move from tutor “predominantly in control, to that where students take more responsibility” (p.27).

Literature snapshot: academic practice focus

Professional development

Overwhelmingly, the dominant theme found in this subcategory was the challenge of promoting integration of technology into instructional approaches. This literature typically described implementations (many of them using blended strategies) and evaluated them, in terms of impact. The reoccurring message in this body of literature is the necessity of providing “planned intervention...to guide staff in innovative, interactive approaches to course design” (Salter, 2006, p.717). In the absence of such intervention technological tools are used to do little more than “replicate existing practice in an online environment” (Salter, 2006, p.717). The strategies for professional support described in these papers aimed to address this challenge. Interweaving the development of technical skills with pedagogical approaches, rather training technical skills in isolation was reported as a significant feature of successful intervention strategies such as the ‘e-Scholars Programme’ at Hong Kong Polytechnic University described by Salter, (2006) and the faculty training approach described by Keengwe, Georgina and Wachira (2010). Reported successful approaches (Salter, 2006; Keengwe, Georgina & Wachira, 2010) were characterised by encouraging the immediate goal of implementing the new skill, providing opportunity for feedback, offering technical support to individual staff between training sessions and in particular ‘point of need’ support, encouraging departmental forums and other workshops (Keengwe, Georgina & Wachira, 2010, p.8), small participant numbers in workshops, establishing communities of practice (Brookes, 2010; Thompson, Jeffries & Topping, 2010), mentors and the use of mentors to provide

“just-in-time “ support (Thompson, Jeffries & Topping, 2010, p.311).

In an attempt to improve the provision of “just-in-time” mentoring support, some such as Thompson, Jeffries and Topping (2010) and Brookes’ (2010), found the use of virtual collaboration tools to be a “viable and culturally sensitive” complement to the more traditional face-face faculty support (p.261), and an effective way supporting communities of practice (Ryberg, Brenstein, Pilt, Moczadlo, Niemczik and Dirckinck-Holmfeld ., 2008).

Understanding practice: Adoption of blended learning/technology

Studies in this subcategory acknowledge the complexity of the instructional task and the challenge of the pedagogical change. The aim of these studies was to identify barriers to, and motivators for the adoption of technology with face-face teaching. Wang (2009), Davis and Fill (2007), Kistow (2009), Ocak (2010) and, Bagher Marek and Sibbald (2007), typical of studies in this subcategory, identified factors impacting on the adoption of blended learning including: perceptions of usefulness, professional support, point of need technical support, funding, preparation time, institutional infrastructure, involvement of senior staff, and efficacy as key determinants of technology adoption.

Understanding practice – differential usage

Studies addressing why some academics choose to or not to adopt technology together with their face-face practice, although useful for informing strategies to initiate uptake, provide no clear understanding of differential usage following adoption. That is, once adopted why it is that some academics use blended strategies simply for course management and efficiency while others fully integrate them into the curriculum for enriched, often innovative learning experiences. Only one article of the 827 surveyed attempted to address the issue. Woods, Baker and Hopper (2004) examined responses from 862 faculty members across 38 institutions using Blackboard learning management system. The authors, among other questions, explored the

factors predicting the type of usage of Blackboard whether as a supplement or for various instructional purposes such as community building, collaboration or interactivity. Study results indicated administrative rather than integrated instructional use was more prevalent. Factors impacting on differential usage included age, gender, nature of subject matter, faculty perceptions about how students would learn best and their personal preferences. Experience with the tool was the most significant factor of usage predicting positive attitudes towards the pedagogical potential of Blackboard and to its usefulness for course administration was experience with the tool. Instructional experience impacted on the faculty perceptions of the benefits of Blackboard. The study is limited by the investigation of a specific learning management system and does not take into account institutional factors.

Why is the lack of literature understanding academic blended practice problematic for the widespread adoption of effective blended learning?

In the 21st century higher education faces the challenge of providing cost-effective, high quality learning experiences appropriate to the needs of an ever-increasing, culturally diverse student population and to meet the competency demands of a digital, knowledge driven society. Traditional methods ingrained into the culture of tertiary education are compelled to change (Swail, 2002; Vasileiou, 2009). Blended learning is being embraced by tertiary institutions as a strategy with considerable promise in implementing the required change (Garrison & Kanuka, 2004; Bonk & Graham, 2006; Bonk, Kim & Zeng, 2006; Hoffman, 2006; Graham & Robison, 2007; Garrison & Vaughan, 2008;).

Despite this interest, the majority of blended learning implementations in higher education fail to fulfil its often-stated potential (Hoffman, 2006; Driscoll, 2002). Graham and Robison (2007, p. 107) argue that, ultimately, it is the adoption of effective blended practices that will determine if blended learning becomes a successful, widely used, institutional strategy for implementing change needed to meet the challenges faced by higher education in the 21st century (Graham & Robison, 2007). Effective blended learning practices

engage the learner in active construction of knowledge and result in transformation of pedagogy (Graham, 2006, p.13, Garrison & Kanuka, 2004). The idea of transformation of pedagogy refers to the view that the most effective blended practices, do not merely “old content in a new medium” Garrison & Kanuka, 2004, pp. 96-97), but rather necessitate significant course redesign. Course redesign includes the creation of new activities and reconsideration of assessment practices. Blends that transform pedagogy tap into the pedagogical potential of blended learning. The pedagogical potential of blended learning relates to the idea that the attributes of technology and face to face teaching can be exploited to achieve enriched learning experiences or perhaps create better learning experiences that are not possible through the use of face to face teaching or technology alone.

Widespread adoption of effective, transformative blended practices is proving a challenge. Generally, current blended learning practices tend to replicate traditional teaching methods and are used solely for reasons of flexibility and efficiency (Graham, 2006) or, at best, are simply ‘stretching the mould’ by making some minor changes to pedagogy taking form of additional resources and supplementary materials (Graham, 2006) rather than impacting on teaching and learning in any significant manner (Collis & Van Der Wende, 2002, as cited in Graham & Dziuban, 2008, p. 273). It is recognised in literature that an important barrier to the widespread adoption of effective, transformative blended learning practices is the lack of appropriate professional development and support (Garrison & Vaughan, 2008).

Given effective blended practices are characterised by transformation of practice, the goal of appropriate professional development is not merely adoption, but rather, it must be to facilitate integration of technology into the core of the teaching strategies so as to create innovative or improved student centred, meaningful learning experiences. This means professional development must target the required “transformation of practice” (Graham 2006, p.13) at the level of personal academic practice. Drawing upon Mishra and Koehler’s (2007) TPACK framework, appropriate professional development must be informed by

insights into the academic's current pedagogical, technical and content knowledge, and using this insight, the role of professional development must be to initiate and strengthen the inter-relatedness of those three levels of knowledge. Herein lays a major challenge to the transformational application of blended learning. Many academics may possess the skills necessary to teach effectively in more traditional settings, but may not have the skills to fully exploit the attributes of technologies to deliver effective student-learning experiences. Academics are often faced, not only with the task of learning to use technologies but also with redefining their roles from instructor to as facilitators and guides in what can be a complex teaching landscape. For example many academics are well versed in skills to promote discussion and reflection in face-face situations, but they may not be so well equipped to handle the guiding and moderating an online forum.

The task of blended learning design is an extremely demanding one. Academics must expand their knowledge of what tools are available, know what are the pedagogic advantages and disadvantages of those tools, and identify how to best integrate those tools within the learning environment they are designing. Blended learning increasingly brings the role of educational designer to the skill set of academics. In this context, the provision of professional development and support in blended learning is challenging (Hanrahan, Ryan & Duncan, 2001). Established approaches to professional development, rooted in traditional teaching approaches, often fail to reach the “majority of staff or to lead to significant change in those they do attract” (Angelo, 1999; Boud, 1999; Jenkins, 1997 cited in Hanrahan, Ryan & Duncan, 2001, p. 130). The journey to integration of technology and transformation of practice often involves stages of “fear and uncertainty”, exploration, affirmation and connection with current knowledge and eventually a “new perspective of the impact of using technology in educational processes” (King, 2003, p. 54). Professional development, if it is to be successful, must recognise these stages and be well formulated to initiate and support the journey.

In order to provide this support, King and Lawler (2003) advocate an “integrative approach to professional development” (p. 12). The ‘integrative approach frames professional development as learner

centred, adult education that addresses both motivation and learning technology, and results in transformative learning. As adult learners, academics may critically analyse their practice, a process that “may entail the redefinition of their mental models – or deeply ingrained assumptions and beliefs – about teaching and learning” (Brancato, 2003, p. 63). Taking the learner-centred perspective, reflection and connection of new knowledge to existing ideas is a critical component of deep, transformative learning required to achieve change in practice.

Put simply, “we make sense of the world through our experiences”, developing “habits of mind or a frame of reference... [absorbing] values, assumptions and beliefs about how things are” (Cranton & King, 2003, p.32). Understanding academics current practice sheds light on the values, assumptions and beliefs they hold about teaching, technology and blended learning – it helps explain why they may or may not choose to adopt blended approaches and ‘why they do what they do’ when technology interfaces with face-face teaching. Professional support strategies founded on an understanding of academics existing practice is thus critical not just for facilitating adoption, but for effecting connection to existing practice; the pre-condition to reflection and subsequent transformation in practice. Hence the lack of literature directed at understanding academics’ current practices is considered problematic and the need for increased research seeking to understand factors shaping academics’ blended practice is self-evident.

Conclusion

There is a dire need for academic development and support that promotes understanding as well as the implementation of transformative blended learning. A comprehensive survey of 827 articles located by keyword search of the Web of Knowledge uncovered a scholarship landscape characterised by a severe deficiency of blended literature describing research into current academic practices. Although the case and student focus studies dominating the blended learning scholarship landscape are undeniably useful, and

necessary, the identified scarcity of literature contributing to understanding of academic practice is concerning, given the importance of this understanding as a basis for formulation of the appropriate strategies to facilitate academics' effective implementation of blended learning. The design and provision of much needed professional development and support, aimed at fulfilling the promise of blended learning in higher education through the integration of technology, transformation of practice and subsequent widespread use of effective blended learning practices evidently still requires significant scholarly research.

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