Literature-evidence base for UQ2U

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Defining blended learning

While there has been significant uptake of blended learning over the past ten years, the associated processes have been in development since the late 1990s (Mirriahi, Alonzo, & Fox, 2015). Despite a relatively extended timeframe, there has been a general reluctance to define blended learning. This reluctance is both an advantage and a disadvantage. Firstly, a purposely open definition such as "a thoughtful fusion of face-to-face and learning experiences" (Garrison and Vaughn, 2008 p.5), while sufficiently broad in acknowledging context and allowing freedom in implementation (Moskal et al., 2013), fails to capture some of the complexities and scale of such a process. Alternatively, the lack of a definitive understanding also creates confusion and a lack of cohesion in the blended learning research space (Smith & Hill, 2018).

Another similarly broad definition of blended learning reflect its historical origins; "The integrated combination of traditional learning with web-based online approaches" (Oliver & Trigwell, 2005 p.17). One challenge with this definition is that it can lead to construals of blended learning as a crude method of combining traditional classroom teaching and online learning activities (Clark, 2003). This can be very appealing to educators who are time-strapped and reluctant to change much of their courses, to believe they can simply add extra online activities to an existing traditional course and call it blended learning. While common practice in the literature (Brunner, 2006), it does not capture the essence of blended learning.

Bliuc et al. (2007) attempted to capture the core tenet of blended learning by further narrowing the definition: "Blended learning describes learning activities that involve a systematic combination of co-present (face-to-face) interactions and technologically mediated interactions between students, teachers and learning resources." (p. 234). By conceptualizing blending learning as systematic, it strongly implies that the blending process requires thorough planning and consideration**.** However, Verkroost, Meijerink, Lintsen, and Veen (2008) argue that such a definition posits 'new' and 'old' media against each other, where technology can be added on as supplementary information or used to teach difficult concepts. This does not address the idea that the whole process of learning is transformed through the use of technology.

In comparison, Verkroost et al.'s own definition veered to the other end of the spectrum: "The total mix of pedagogical methods, using a combination of different learning strategies, both with and without the use of technology." (p.501). One clear problem with this definition is that it can describe a purely online distance education course (Alammary, Sheard, & Carbone, 2014). Thus it is evident that multiple definitions of blended learning exist on a spectrum, from very broad definitions that encompass various learning modes, to very specific phrasings that potentially limit the innovation possible with blending.

What these definitions have in common is the essential integration of two different instructional methods: conventional face-to-face learning and technology-mediated learning. Given the ubiquity of technology in many, if not all aspects of formal and informal learning in higher education, it could be argued that all higher education is essentially blended in some form (Alammary, Sheard, & Carbone, 2014). Blended learning has been used to describe the use of word clouds in an anthropology course (Mostert & Townsend, 2016) to institutional, wide-scale implementation (Garrison & Vaughan, 2013). The flexibility of the term enables innovation (Garrison & Vaughan, 2013), recognises and acknowledges context (Moskal et al., 2013) and can be tailored to support local implementation (Sharpe et al., 2006).

Thus, for the purposes of this project we adopt a catch-all approach with aspirational impacts and outcomes included. This definition informs the UQ Teaching and Learning Plan 2018–2021:

> *Blended learning combines face-to-face interactions with online activities. The balance between face-to-face elements and digitally enabled activities varies depending on the purpose and outcomes*

to be achieved. There are clear links between in-class and out-of-class activities and a clear purpose for the use of digital content. Digital tools used in or out of class can enhance students' ability to create, share and discuss content, and provide increased opportunities to learn from multiple perspectives.

(*Teaching and Learning Plan, 2018–2021*)

Blended learning can also be viewed as a pedagogical approach that offers institutions like UQ the opportunity to:

…customise their learning using synchronous and asynchronous delivery modes to increase levels of interaction among the agents involved (generally, students and faculty). Therefore, the synergy between instructional and training models and/or processes to implement successful BL initiatives must evolve, not only to prepare students to satisfy their personal learning needs but also to foster academic community outreach and guarantee high quality standards in rich and flexible scenarios.

(Medina, 2018, p. 43)

Why blend? Re-imagining teaching and learning

A general response to the question "why blend?" offers a number of positive arguments well documented in the literature. In line with other thematic reviews of blended learning (Halverson et al., 2014; Zhang & Zhu, 2017), Smith & Hill outlined the abundance of research that focuses on beneficial student outcomes in engagement, motivation, grade achievement, autonomy and active, self-directed learning. Blended learning models also allow more flexibility for staff and students in course delivery to alleviate space and time barriers in accessing content on-campus (Wanner & Palmer, 2015), increased staff and student satisfaction, and the promise of more interaction both online and on-campus between staff and students and students and students (Smith & Hill, 2018).

It is, however, the promise of transformation that offers the strongest case (Smith & Hill, 2018). The opportunity to revitalise curriculum, introduce new pedagogies, build staff and student capacity, personalise learning, piece together courses at a program level, and to insert new initiatives that focus on employability, entrepreneurship and innovation that provide the best incentives. Medina (2018) comments that blended learning "fosters not only the use of different information and communication technologies but also facilitates the emergence and development of different kinds of interactions and encounters amongst participants" (p. 42).

As the technology landscape of society continues to evolve and alter the way we think, transformation of learning environments in higher education settings is critical to meet the need for intellectual talent (Garrison & Kanuka, 2004). The unbounded communication and limitless access to information online challenge our cognitive abilities to process information in the traditional classroom paradigm**.** This does not represent the end of conventional campus-based learning, but rather emphasises the need to utilize both face-to-face and online communication by creating an efficient learning environment that supports rich interactions and learning via online learning resources (Köse, 2010), while enhancing the quality of face-to-face activities that students can integrate with online learning activities and resources.

Students will increasingly look to institutions for learning support and help with the development of skills needed in a digital age, rather than with the delivery of content. Blended learning offers possibilities to create environments that can effectively facilitate dynamic communities of inquiry, where students shift paradigms from assimilating content, to co- creating meaning and knowledge through active participation in the inquiry process. Hudson (2002) argues, ''that the very basis of thinking is rooted in dialogue, drawing on a socially constructed context to endow ideas with meaning'' (p. 53). By leveraging on dynamic partnerships with student and staff, the process of inquiry is fundamentally about engaging students in critical discourse and reflection**,** balancing the abundance of information on the Internet for open dialogue, critical debate, negotiation and agreement - the cornerstone of higher education (Garrison & Kanuka, 2004).

In 2011, to address the challenges of maximizing student learning in large introductory classes, Queens's University funded a faculty-level initiative in the faculty of arts and science to redesign courses from sciences, social science, arts and humanities with the aim of increasing student engagement and critical thinking (Ravenscroft & Luhanga, 2018). Using the model of blended learning, all course content was moved online and classroom time focused on active learning involving group work and problem solving.

Courses were developed using the description by Garrison and Vaughan (2008) as the thoughtful, purposeful and complementary integration of face-to-face learning with online learning. There was also a focus on engaging students through active and collaborative learning. Online materials were used as the mode of content transmission, with classroom contact time reduced compared to the traditional course hours. Instructors were encouraged to choose their own pedagogical strategies that best suited them in delivering the content and learning objectives.

Team members involved an instructional designer who provided course design expertise and project management. Other members included an educational technologist, web developer, subject-specialist, and librarian to advice on appropriate learning resources, and in some courses a graduate student to help facilitate selected classroom activities. Peer mentoring was also organised via informal, open meetings for all staff involved in the redesign, allowing for multidisciplinary staff exchanges with different levels of experience in blending.

Baseline evaluations were collected as part of the longitudinal data prior to blending. The measure used was CLASSE (Ouimet & Smallwood, 2005), a survey which measured student engagement at the course level consisting of five sections: engagement activities, cognitive skills, other educational practices, class atmosphere and demographics. Items that made up the engagement section in CLASSE were organized into six categories of student educational experiences, with a focus on the categories of active learning during class and student-staff interaction. The majority of courses underwent 4 iterations of blending and showed consistent, statistically significant improvements in perceptions of both categories after the course was blended. Notably, grades were not discussed as changes in assessment over the course of blending were likely to have influenced grades, and could not be directly attributed to course changes when assessing effectiveness of course design.

To ensure that the benefits of blended courses were carried on, institutional policies were developed to formalize the structure as a redesigned course in entirety moving forward. The policies in place helped establish the ethos of blending courses as student and learning-centred. This approach has seen the generation of high quality online materials and further enhancements in educational technology tools in achieving learning outcomes, benefiting over 10,000 students annually. Other faculties in the university have adopted similar blending approaches and classroom spaces are progressively being renovated to accommodate active learning, demonstrating the potential of successful blended learning spreading as the 'new normal' in transforming the learning experience in higher education.

Challenges: Where do we go next?

The challenge facing higher education today is to determine the optimal mix of online and on-campus teaching and learning, both within individual institutions and across whole systems of higher education (Hill & Smith, 2018). The changing nature of both the student body and available technologies has required academics to change their approaches to teaching. Academics are under pressure to embed ICTs into their face-to-face teaching and to work in blended and online modes (du Boulay et al., 2008).

Andrews & Tynan (2011) are highly critical of how the university sector has embraced Web 2.0 tools in enhancing learning environments – "despite the rapid acquisition of technology and the increasing focus on blended learning, most universities remain largely mired in a 20th century approach to pedagogy which focuses on transmission of knowledge. Technology serves mainly as a means of delivering information rather than supporting and fostering engagement. Web 2.0 tools are either overlooked by the majority of

lecturers or adapted in a simple manner" (Andrews & Tynan, 2011:120). At the heart of this criticism is that the quality and quantity of the interaction in a community of inquiry suffers if there is ineffective integration of technology.

To be effective in an online environment, academics need a range of knowledge and skills such as the use of appropriate pedagogical approaches to enable the design, facilitation and assessment of the course, and the ability to support the social and emotional well-being of the students and technical skills (Redmond, 2011). The substantial disruptive change in pedagogical practices is considerable and can be met with resistance from staff who do not see the incentives sufficient to adapt accordingly (Hill & Smith, 2018). Additionally, external support is required as blended and fully online learning requires a range of design skills that most academics do not have. Clearly, access to media producers who can create videos, digital graphics, animations, simulations, web sites, and access to blog and wiki software is essential. Without access to such technology support, academics are more likely to fall back on tried and true classroom teaching, citing the onerous demands of time (Ravenscroft & Luhanga, 2018).

It must not be forgotten in the process that the cornerstone of blended learning is clear pedagogical design (Oliver & Trigwell, 2005). While blending can be seen as a mammoth change, teachers can start with simple technologies and gradually adapt their teaching and courses into a blended mode over time. To achieve learning outcomes, there need to be strategic clear links between in-class and out-of-class activities, and a clear purpose for the use of digital content. In the figure below is the UQ2U design framework for thoughtful consideration of course design, wherein all steps in the process draw on evidence of how students learn (Wiggins & McTighe, 2005; Kavanagh et al. 2017).
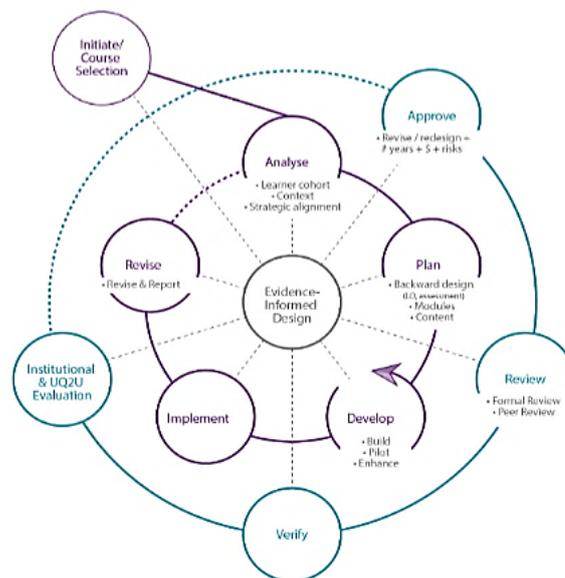

Figure S-1:   Course re-design process in UQ2U

Another challenge in the blended learning space is that much of the prior research is focused on 'grassroots' bottom-up, small-scale studies. There is a need to move towards developing top-down policy that focuses on institutional adoption (Porter & Graham, 2016; Pima, Odetayo, Iqbal, & Sedoyeka, 2018) regarding models for implementation and project management, which offers the opportunity to incorporate more comprehensive innovative BL approaches in inducing a paradigm shift. While the dearth of research in this area suggests insufficient research is being conducted, it is also symptomatic of the reluctance to publish blended learning research for confidentiality reasons, or where disciplinary research takes priority over learning and teaching research (Macfarlane, 2011). Yet, as Sharpe al. (2006) argues, there is a need for

more institutional evaluation that is distributed externally if higher education is to learn from and build on successful adoption and implementation strategies as a field.

Conclusion

As a top 50 globally ranked university, continual enhancement of the quality of the student teaching and learning experience is vital and ensures that UQ remains at the forefront of both education and research. UQ2U helps maximise both by supporting our talented academics to bring their research expertise to life for students, by redeveloping UQ's largest courses to deliver greater face-to-face active learning experiences that engage as many UQ students as possible in higher-order thinking for the real world, and flexible online learning environments tailored for the modern student's needs for increased access and convenience.

That blended learning initiatives have attracted large funding budgets suggests that there is an institutional imperative to ensure that the strategic goals associated with the blending process are attained and that there is appropriate evidence to support the success of the program. Parallel to this a need to understand how and why blended initiatives support student learning and not just lead to changes in student preferences, with Phillips, Kennedy and McNaught (2012) arguing that studies of blended learning require a focus on evaluation for institutional purposes and also evaluation for research. Of the few institutional examples offering case studies to support benchmarking, the evaluation processes engaged in have generally not captured a comprehensive picture of the efficacy of the teaching approaches (Ravenscroft & Luhanga, 2018), or tend towards simple to gather, but insufficiently rigorous measures, such as student satisfaction surveys (Previtali, & Scarozza, 2018), and various forms of clickstream data. While important, they only provide distal indicators of the student experience and student learning at UQ.

It is important that we assess and evaluate the effectiveness of blended learning approaches by tracking learning outcomes, student satisfaction, retention and achievement. In addition to assessing baseline learning outcomes, the learning process should also be assessed in terms of higher-order learning to explore the impact of blended learning in achieving more meaningful learning experiences (Garrison & Kanuka, 2004). That is the philosophy that is being applied to the evaluation of UQ2U. Using a mixed methods approach and combining the best of qualitative and quantitative evaluation methodologies, we aim to understand the lived reality of UQ students that underpins the data collected through learning analytics.

References

Alammary, A., Sheard, J., & Carbone, A. (2014). Blended learning in higher education: Three different design approaches. *Australasian Journal of Educational Technology*, *30*(4), 440–454. doi:10.14742/ajet.693

Andrews, T. & Tynan, B. (2011). Changing student learning preferences: What does this mean for the future of universities? In G. Williams, P. Statham, N. Brown & B. Cleland (Eds.), *Changing Demands, Changing Directions. Proceedings ascilite Hobart 2011*. (pp.118-122). Retrieved from: http://www.ascilite.org/conferences/hobart11/downloads/papers/Andrews-full.pdf

Bliuc, A., Goodyear, P., & Ellis, R. A. (2007). Research focus and methodological choices in studies into students' experiences of blended learning in higher education. *The Internet and Higher Education*, *10*(4), 231-244. doi:10.1016/j.iheduc.2007.08.001

du Boulay, B., Coultas, J., & Luckin, R. (2008). *How compelling is the evidence for the effectiveness of e-Learning in the post-16 sector? A review of literature in higher education, the health sector and work-based learning and a post-review stakeholder consultation.* Brighton, UK: University of Sussex. Retrieved from: http://www.sussex.ac.uk/informatics/cogslib/reports/csrp/csrp595.pdf

Brunner, D. L. (2006). The potential of the hybrid course vis-à-vis online and traditional courses. *Teaching Theology & Religion*, *9*, 229–235. doi:10.1111/j.1467-9647.2006.00288.x

Clark, D. (2003). Blended learning: An epic white paper. Retrieved from http://www.oktopusz.hu/domain9/files/modules/module15/261489EC2324A25.pdf

Garrison, D., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education*, *7*(2), 95–105. doi:10.1016/j.iheduc.2004.02.001

Garrison, D. R., & Vaughan, N. D. (2008). *Blended learning in higher education: Framework, principles, and guidelines*. San Francisco, CA: Jossey-Bass.

Garrison, D. R., & Vaughan, N. D. (2013). Institutional change and leadership associated with blended learning innovation: Two case studies. *The Internet and Higher Education, 18*, 24–28. doi:10.1016/j.iheduc.2012.09.001

Hudson, B. (2002). Critical dialogue online: Personas, covenants, and candlepower. In K. E. Rudestam, & J. Schoenholtz-Read (Eds.), *Handbook of online learning: Innovations in higher education and corporate training* (pp. 53–90). London: Sage.

Kavanagh, L., Reidsema, C., McCredden, J., & Smith, N. (2017). Design Considerations. *The flipped classroom*, pp.15–35. doi:10.1007/978-981-10-3413-8_2

Köse, U. (2010). A blended learning model supported with Web 2.0 technologies. *Procedia - Social and Behavioral Sciences*, *2*(2), 2794–2802. doi:10.1016/j.sbspro.2010.03.417

Macfarlane, B. (2011). Prizes, pedagogic research and teaching professors: Lowering the status of teaching and learning through bifurcation. *Teaching in Higher Education, 16*(1), 127–130. doi:10.1080/13562517.2011.530756

Medina, L. (2018). Blended learning: Deficits and prospects in higher education. *Australasian Journal of Educational Technology*, *34*(1), 42–56. doi:10.14742/ajet.3100

Mirriahi, N., Alonzo, D., & Fox, B. (2015). A blended learning framework for curriculum design and professional development. *Research in Learning Technology, 23*(1), 28451. doi:10.3402/rlt.v23.28451

Moskal, P., Dziuban, C., & Hartman, J. (2013). Blended learning: A dangerous idea? *The Internet and Higher Education, 18*, 15–23. doi:10.1016/j.iheduc.2012.12.001

Mostert, L. A., & Townsend, R. (2016). Embedding the teaching of academic writing into anthropology lectures. *Innovations in Education and Teaching International, 55*(1), 82–90. doi:10.1080/14703297.2016.1231619

Oliver, M., & Trigwell, K. (2005). Can 'blended learning' be redeemed*? E-learning and Digital Media*, *2,* 17–26.

Ouimet, J. A., & Smallwood, R. A. (2005). Assessment measures: CLASSE—The class-level survey of student engagement. *Assessment Update*, *17*(6), 13–15.

Pima, J. M., Odetayo, M., Iqbal, R., & Sedoyeka, E. (2018). A thematic review of blended learning in higher education. *International Journal of Mobile and Blended Learning*, *10*(1), 1–11. doi:10.4018/ijmbl.2018010101

Porter, W. W., & Graham, C. R. (2016). Institutional drivers and barriers to faculty adoption of blended learning in higher education. *British Journal of Educational Technology, 47*(4), 748–762. doi:10.1111/bjet.12269

Previtali, P., & Scarozza, D. (2019). Blended learning adoption: a case study of one of the oldest universities in Europe. *International Journal of Educational Management*, *33*(5), 990–998. doi:10.1108/ijem-07-2018-0197

Ravenscroft, B., & Luhanga, U. (2018). Enhancing student engagement through an institutional blended learning initiative: A case study. *Teaching & Learning Inquiry, 6*(2), 97–114. doi:10.20343/teachlearninqu.6.2.8

Redmond, P. (2011). From face-to-face teaching to online teaching: Pedagogical transitions. In G. Williams, P. Statham, N. Brown & B. Cleland (Eds.), *Changing Demands, Changing Directions,* (pp. 1050–1060). Proceedings ASCILITE Hobart 2011. Retrieved from: http://www.ascilite.org.au/conferences/hobart11/procs/Redmond-full.pdf

Sharpe, R., Benfield, G., Roberts, G., & Francis, R. (2006). *The undergraduate experience of blended e-learning: A review of UK literature and practice*. York: Higher Education Academy.

Smith, K., & Hill, J. (2018). Defining the nature of blended learning through its depiction in current research. *Higher Education Research & Development*, *38*(2), 383–397. doi:10.1080/07294360.2018.1517732

Verkroost, M. J., Meijerink, L., Lintsen, H., & Veen, W. (2008). Finding a balance in dimensions of blended learning. *International Journal on E-Learning*, *7*(3), 499–522.

Wiggins, G. P., & McTighe, J. (2005). *Understanding by design*. Alexandria, VA: ASCD.

Wanner, T., & Palmer, E. (2015). Personalising learning: Exploring student and teacher perceptions about flexible learning and assessment in a flipped university course. *Computers & Education*, *88*, 354–369. doi:10.1016/j.compedu.2015.07.008