



Learning Management System Adoption by Academics: A Perspective Following the Forced Lockdown of NZ Universities due to COVID-19 in 2020

Stephen Brown, Auckland University of Technology

Lyn Murphy, Auckland University of Technology

Kay Hammond, Auckland University of Technology

Abstract

An academic's adoption of online learning during the 2020 lockdown required new levels of engagement with the learning management system (LMS). In this position piece, we suggest that academics are pivotal to online course development, and they should determine alternative means of instruction and assessment during any transition to online learning. We present two models of an academic's interactions with the LMS and propose that the academic's engagement with the LMS, and their willingness to be in partnership with experts in e-learning, should remain central to their university's strategic development. The 2020 lockdown presented both challenges and opportunities to academics regarding their engagement with the LMS and online teaching—we suggest that the role of the academic is critical for successful implementation of the post-pandemic online ambitions of New Zealand universities.

Keywords: academic engagement; professional development; partnership

Introduction

An unprecedented situation arose in March 2020 when the COVID-19 pandemic forced a rapid transition to online learning at all New Zealand universities (Wilson, 2020). Institutions that had a strong tradition of distance learning were perhaps better suited to this transition, in part due to staff experience and the institutional support already in place. However, staff at institutions that predominantly delivered courses face to face on a physical campus (as in the case of the authors of this article), were suddenly required to reflect on their current practices, and potentially to re-focus their efforts on the online teaching and learning platform. We use the term “academic” to refer to anyone who has a responsibility for content and/or delivery of a course; for example, lecturers, teaching assistants, tutors, or other teaching staff at the tertiary level. Morreale et al. (2021, p. 117) recognised “the distinct difference between intentionally designed and structured online courses, typically referred to as ‘online pedagogy’, as compared with ‘crisis pedagogy’, the mandated remote learning transition recently witnessed”. An academic's engagement with the platform (usually in the form of a learning management system (a learning management system such as Moodle, Blackboard, or Canvas), and their ability to adapt to teaching while dislocated from their usual environment, requires some reflection.

The learning management system (LMS) has become an integral part of higher education and, over the last two decades, universities have adopted digital LMS platforms to deliver online education (Dobre, 2015; Walker et al., 2016). The ubiquity of the LMS has facilitated distance,

face-to-face, and blended teaching and learning processes, and online strategies are now included in most universities' strategic plans. Universities have invested heavily in developing online education, and position the LMS at the heart of this investment. The LMS offers an information technology resource to support online education, thus providing a return on the university's investment. The LMS has become a critical interface between academic and learner, expanding delivery options for content, knowledge assessment, practical exercises, and user collaboration. These attributes make the LMS an essential asset for any university (Watson & Watson, 2007). However, the constant push by higher education providers to flourish in the competitive online environment requires a commitment by academics to embrace the LMS model (Beckford & Mugisa, 2014).

This commitment to a standardised LMS, and a narrative that describes the academic's adoption and acceptance of the LMS during the rapid growth of online learning in all universities, remains largely unexplored (Gous & Roberts, 2015). Furthermore, the compulsion and expectation that academics would teach online during the COVID-19 pandemic provided a powerful impetus for them to fully engage with their university's LMS. We acknowledge that course delivery using only the institution's LMS can be limiting but we have experienced institutional resistance when attempting to use diverse platforms (e.g., Zoom, YouTube, Facebook) for course delivery. In our experience, sound academic practice that can deliver meaningful student experience—but relies on tools which are not supported by an institution's preference for an LMS—is not encouraged, whereas conforming to a standardised delivery using the adopted LMS is both supported and preferred. A formal institutionalised system for online courses can potentially stifle academic creativity, but the practicalities of using multiple platforms and software programs can also lead to problems (e.g., student access and inequality). Furthermore, using multiple platforms is also problematic when staff are team teaching on courses with large cohorts, because they need to be familiar with all platforms, and students must have access to all platforms.

All New Zealand universities defaulted to online teaching in the 2020 lockdown. When each university decided to develop and teach online courses, some aspects of quality remained directly under the academic's control. For example, the academic was responsible for online course content and how it was delivered in terms of structure, rigour, staff–student interaction, student–student interaction, and mentoring. Academics have always made these decisions for on-campus education (Andrade et al., 2020; Sebastianelli et al., 2015), and it has been suggested that online education simply represents another type of classroom (Fredericksen, 2017). We suggest that this decision-making power should remain with the academic during the transition to teaching fully online courses during the lockdown. Academics are uniquely positioned in the nexus of content expertise and the dynamic, progressive interaction between professional knowledge and digital teaching technologies. However, recent trends to standardise courses (e.g., to facilitate cross-crediting courses between institutions) can undermine the autonomy of an academic. We suggest that academics are central to course development, and further suggest that they should determine alternative means of instruction and assessment. Therefore, an academic's engagement with the LMS, and their willingness to be in partnership with experts in e-learning, is pivotal to their university's strategic development. This was highlighted in the lockdown of 2020.

Academic staff adoption of the LMS

Adoption of the LMS by a university requires the academic to be the main “actor on the stage” (Alshammari et al., 2016; Uziak et al., 2018), and the lockdown in March 2020 forced academics to reconsider their use of the LMS. Simply using the LMS as a repository for course documents and as an administrative tool to organise student grades, was particularly inadequate during the pandemic. Academics were expected to provide live online learning opportunities, create interactive materials that could be accessed asynchronously by a dispersed student population, and promote student engagement. The academic's motivation, attitude, experience, and

innovation were likely to determine the rapid and successful transition required to fully convert university courses to an online format.

Before lockdown, LMSs in higher education were under-used (Adzharuddin, 2013; Walker et al., 2018; Wichadee, 2015). Many academics didn't know how to use the LMS effectively—they found it challenging to implement LMS tools to enhance teaching and learning in face-to-face courses (Wichadee, 2015). The LMS tools most frequently used by academics were for making course announcements, organising folders of course content, and administrating and managing student grades. The predominant use of the LMS by academics was for course management and administration rather than for transforming face-to-face courses (Walker et al., 2016; Washington, 2019). They were likely to use the LMS as a repository for resources and materials, and to copy course content and course settings from one course to another (Washington, 2019). Thus, current evidence suggests that, in some areas of the higher education sector, there is a gap between the institutional rhetoric about developments in online teaching and learning progress, and the reality of academic practice.

Academics had mixed results when using the LMS to promote student interaction among peers—or student interaction with academics—although these activities can afford students an opportunity to feel connected with the culture of the institution. Other LMS tools designed to promote faculty–student interaction—such as discussion boards and online formative assessment with individualised feedback—have had limited use by academics (Rhode et al., 2017). Regardless of the reasons for the under-use of the LMS in higher education, courses that had a blended learning format had opportunities to interact with students before the pandemic.

Despite the hesitation of some staff to use any more than the basic functions of the LMS, there is research that looks at how to use LMS features to engage students. Kim et al. (2021) found students were engaged with several features of online learning, including active learning examples and activities; asynchronous features that allow them to pause and reflect on content; and additional resources in the form of readings, weblinks, and videos. Students also valued frequent course updates by staff, and guidance through their transition to online learning. Opportunities to engage with peers were also considered helpful for learning and support. However, Kim et al. (2021) noted that practices such as active learning are not necessarily equivalent in face-to-face and online formats. In online contexts, brighter students tended to engage more. Research has noted students' skills with synchronous instruction, which provides peer interaction and instant feedback in the LMS and other integrated platforms (Wolf & Uribe, 2020). Asynchronous instruction allows for flexible access and makes the course resources easy to navigate (Kim et al., 2021). Thus, prior to the pandemic, academics' engagement and use of the LMS for online teaching was variable—each academic could be selective about their commitment to online, blended, and face-to-face delivery.

The switch to fully online teaching in March 2020 required a shift from using the LMS as an administrative and content management tool to using it as an efficient teaching and learning platform, with instructors considering educational and social purposes to be the main reason for using the LMS (Nkonki & Ntlabathi, 2016; Stantchev et al., 2014). Even early adopters of online platforms were likely to be challenged in these times (Lewis & Abdul-Hamid, 2006). In the 2020 lockdown, opportunities for meaningful interaction among students, and particularly between academics and students, became crucial for both student engagement and retention. Academics were now required to create an online learning environment with vibrant interaction between the academic and the student as this was likely to underpin the successful transition to fully online education. Academics were forced to reflect on their current practice by taking an honest look at their own acceptance of, and competence with, LMS technologies. To facilitate this reflection, it can be useful to conceptualise an academic's acceptance and competence regarding the LMS. Academics with varying levels of technological competence who engaged with the LMS have

been classified into groups (Gregory & Lodge, 2015). An “expert” group spent considerable time and effort experimenting with LMS features but sometimes required support to incorporate these features in their teaching. A “reluctant” group, who were late adopters of LMS technologies, were likely to use the LMS as a repository for information. A “novice” group was enthusiastic but required significant support to enhance their technological competence. We suggest this initial grouping could be expanded further by using a quadrant model (Figure 1) in which one axis represents an academic’s acceptance or hesitancy to engage with LMS technologies, and the other axis represents an academic’s level of technical competence.

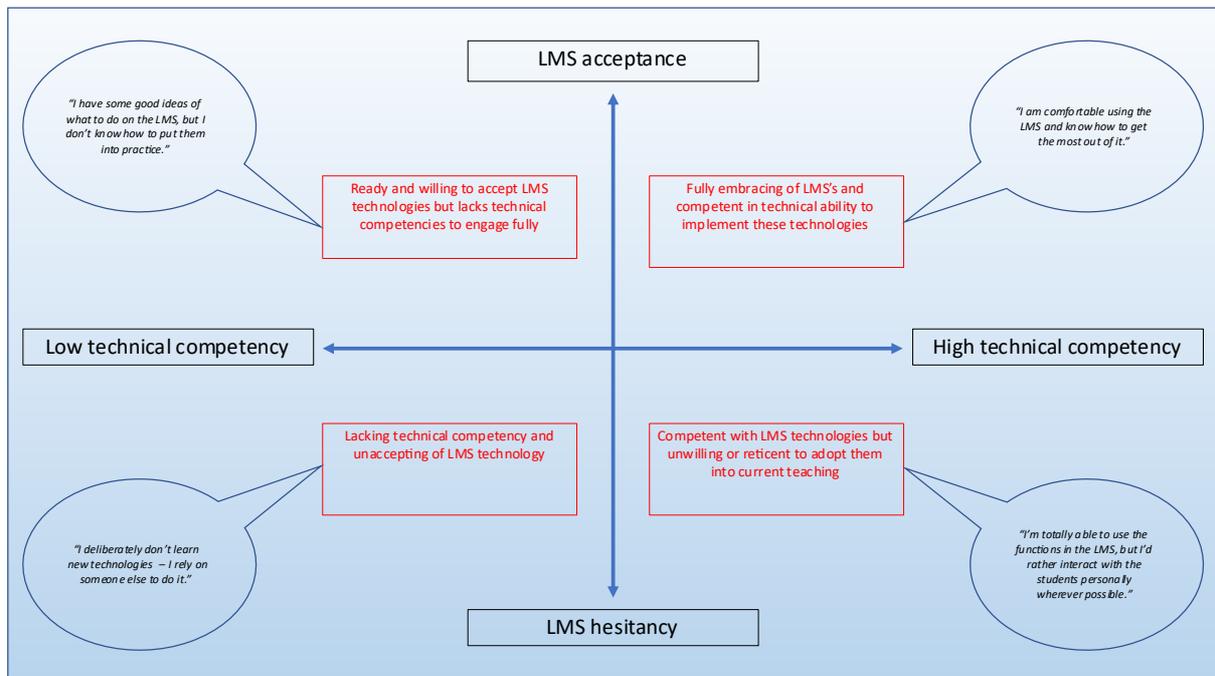


Figure 1 A quadrant model of academics’ acceptance of LMS technologies and technical competence with these systems

In Fig. 1 we have included hypothetical comments from academics who could be in each quadrant. For example, an academic who is a reluctant user of the LMS might have little competence with technology and might consider the LMS to be intruding into their professional practice. Alternatively, an academic who is competent with technology and comfortable exploring the functionalities of the LMS, might consider these capabilities to be complementary to their role as an academic. Technical incompetence should be addressed with appropriate professional development, because it is incumbent on universities to provide appropriate training in the technologies embedded in the LMS. The need for this professional development was acute in the early part of the 2020 lockdown, and most universities placed considerable emphasis on the need for academics to engage with this support. In this support, the university should provide suitable instruction on how to use their LMS and clearly demonstrate how to integrate LMS features in a course, whether this is supporting face-to-face delivery, fully online delivery, or an asynchronous blended approach. If this training is effective, technological challenges can be minimised (Ziraba et al., 2020). However, we accept that there are instances where academics believe their current pedagogical practices are sound and would not be further enhanced by using technology. We also agree that providing professional development in the use of technology is unlikely to affect these beliefs. However, if hesitancy is not based on sound pedagogical choice it is possible that an intermediate step will convince the reluctant academic of the benefits of engaging with digital technologies to enhance the student experience. One example is offering

consultation sessions with peers and/or with LMS champions who have successfully integrated digital technology into their course delivery. This would enable hesitant staff to ask questions and explore their relevant beliefs and wider cultural protocols when considering the role of digital technologies in their teaching.

In addition to institutional support, our model acknowledges that technical competence can be accompanied by an unwillingness to apply the technologies to teaching practices (LMS reluctance), particularly in institutions that don't have a strong history of distance learning as central practice. This was the case in our institution, where early adopters of technology achieved greater use of LMS functions and supplementary tools to explore digital technology in pedagogical practice. Also, staff relied on early adopters to develop and maintain the digital components of a course, which removed the need for all staff to engage with digital technologies beyond the basics. We propose that it is incumbent on academic staff to stay up to date with digital tools and technology-assisted learning applications, and to understand how these applications can best contribute to student learning (Lenert & Janes, 2017). Regular reflection by academic staff, combined with institutional course auditing, can encourage academic staff to engage with professional development opportunities to ensure their courses meet appropriate institutional standards. Institutions and academics can work together to develop standards that enable people to identify which stage of development they are at, and where they need further development. We propose a quadrant model that uses the dimensions of skill level and frequency of appropriate use (Fig. 2).

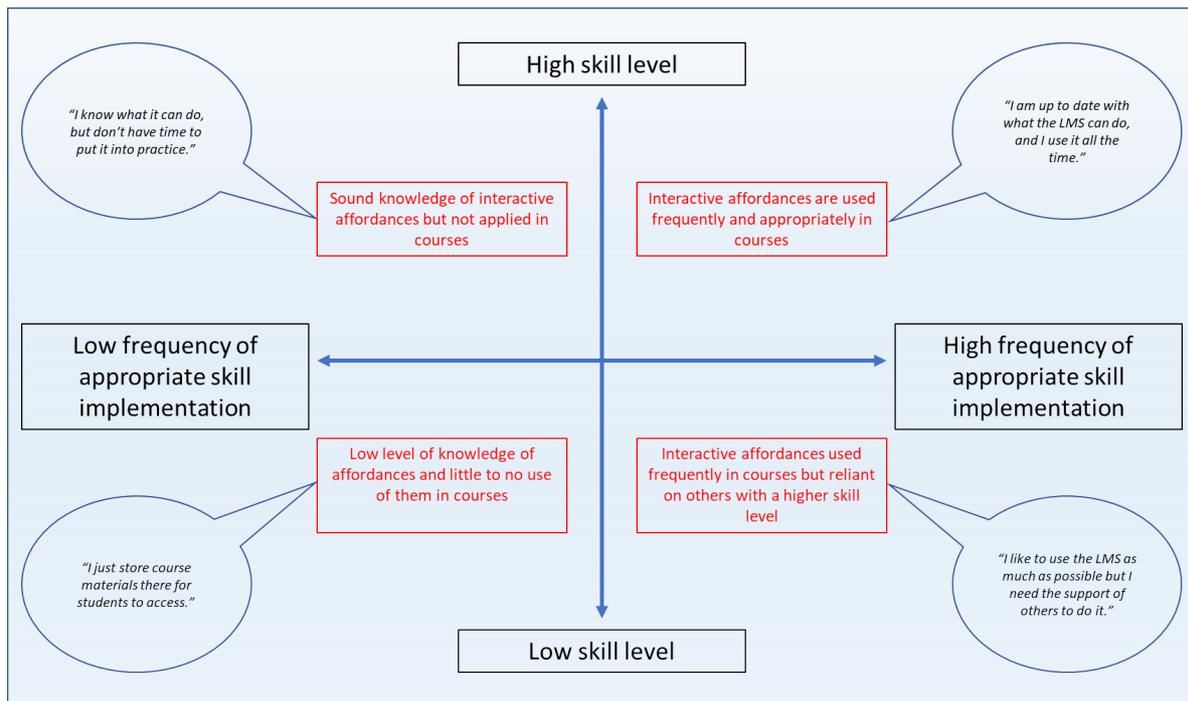


Figure 2 A quadrant model of academics' skill level in LMS technologies, and the frequency of appropriate implementation of these skills

By using the skill level and appropriate frequency model in specific institutional contexts, educators can agree on the level of skills required to meet the requirements for high skills. For example, decisions can be made as to whether the required skills include teaching- and learning-related functions (such as providing interactive sessions), or whether they need to include administrative functions (such as operating grade centres), or whether administrative skills would be the responsibility of online learning support staff. Along the dimension of appropriate use of

skills, agreement can be reached on which affordances offer real learning potential and experiences (in consultation with evidence-based research) and which affordances theoretically promise learning but are impractical or ineffective. Therefore, this model offers a basis on which skills can be defined, developed, and recognised in higher education.

The pandemic-induced lockdown and rapid adoption of online teaching has highlighted the importance of academic professional development for up-skilling staff in using the LMS. This remains important because online courses are being released at a faster rate than faculty are being trained to deliver quality education in the digital age (Lenert & Janes, 2017). Providing appropriate professional development may address scepticism about the effectiveness of online teaching and reduce the anxiety of those who lack confidence in their skills to teach online. Establishing faculty-wide learning communities has been shown to improve staff engagement with online platforms (Haresnape et al., 2020) and this led to improved educational outcomes for learners (Hollowell et al., 2017). Institutional initiatives to formalise professional development in LMS proficiency have also been effective (Harkness, 2015). Considering our quadrant model of LMS acceptance/hesitancy and levels of competence, we propose a framework of levels of LMS proficiency that formalises the professional development of staff involved in online teaching. Furthermore, we propose that professional development for using the LMS is an ongoing element of academic culture—from initial conversations through to development of advanced skills and reflective practices. This continuum is shown in Table 1, where we refer to a “pre-proficiency” level that addresses the need to engage with hesitant adopters, moving through to an expert level of proficiency. In this framework, we suggest that the “proficient” level is the minimum level of achievement required for staff who are both teaching online and developing courses with an online component. We also suggest that most academics involved in online teaching should aim to achieve the “advanced” level of proficiency. In our experience, early adopters of the LMS, and faculty LMS “champions”, are now at the advanced level and can mentor others at lower levels of proficiency. The framework considers those at the level of “expert” proficiency include software developers who can modify the functionality of the LMS to integrate it with other platforms, and staff who have formal responsibility to instruct others in using the LMS. It’s possible that those at the expert level are not involved directly in online teaching but are employed in academic support roles.

Although it could be argued that the professional development proposed in Table 1 is difficult to schedule into an already precarious work/life balance, we argue that responsible autonomy necessitates the need for all relevant staff to become proficient in the use of their LMS. Institutions also have a responsibility to factor this training into workload time allowances. Furthermore, we argue that this responsibility should be shared equally in teaching teams to maintain flexibility during periods of staff absence and to ensure equality of duties.

Table 1 A suggested framework for formalising professional development of proficiency with an LMS

Level	Abilities and attitudes	Duties and culture
Pre-proficient	<ul style="list-style-type: none"> - Can perform some functions in the LMS - Recognises the value of the LMS and is willing to learn about it - May be hesitant to use the LMS 	<ul style="list-style-type: none"> - Seeks training opportunities or has discussions about hesitancy - Collegial willingness to engage with mentors
Proficient	<ul style="list-style-type: none"> - Can perform all basic functions required to run a course - Has some confidence in using the LMS 	<ul style="list-style-type: none"> - Uses the LMS for course teaching and leading - Takes responsibility for own proficiency
Advanced	<ul style="list-style-type: none"> - Can perform advanced administrative functions and uses specialised features - Is confident in using and teaching with the LMS - Develops awareness of students' experience with LMS 	<ul style="list-style-type: none"> - Responsible for mentoring others; ensures team members are proficient - Point of call for basic trouble-shooting
Expert	<ul style="list-style-type: none"> - Complete understanding of LMS software and functions - Very confident in using the LMS to a professional and specialist level 	<ul style="list-style-type: none"> - Learning designer who trains others formally in workshops - Provides support and integration with learning needs of course teams

The framework highlights the supportive culture required to help academics to achieve a level of proficiency that is appropriate for their online teaching if using the LMS is a sound pedagogical choice. The framework does not explicitly require considering the student experience while attaining initial proficiency with the LMS; however, we suggest that institutions continually monitor the student experience to remain informed about interactions between students and academics in all types of course delivery (online, blended, and face to face), and understand the role of the LMS in fostering student engagement with learning opportunities. As proficiency increases, the academic can reflect on the student experience and gain valuable insight into the current use of an LMS, and then feed this back into the framework for professional development. Educators need to be aware of the student experience and behaviour with online pedagogies, how an understanding of the LMS and knowledge of other tools needs to match requirements to provide what works—and how to explore new possibilities for engaged and effective learning. For example: Which pedagogies can be effectively scaled up to large cohorts—and which can't? Academics also need to pay particular attention to developing an online pedagogy of care to promote student engagement and a sense of connection (Burke & Larmar, 2021).

Academics require ongoing professional development and support to be successful (and remain successful) in their online teaching (Martin et al., 2019; Schmidt et al., 2016). Professional development increases the likelihood that they will pursue online course delivery after the pandemic, and it may address concerns and misconceptions held by some academics about online teaching at university. It is incumbent on the university to support and empower academics in this central role to develop their online teaching skills. In addition, the academic should demonstrate a responsible autonomy in which they acquire technical competence, remain guided by both discipline-specific evidence and generic evidence-based pedagogies using online tools, and maintain awareness of the student experience. The drive to digitalise higher education seems to be a global phenomenon (Saari & Santti, 2018) and academics should be convinced of the necessity of this digitalisation and thus implement it willingly. The 2020 lockdown presented challenges and opportunities to academics regarding their engagement with the LMS and online teaching—we suggest that the central role of the academic is critical to successfully implementing the on-line teaching ambitions of New Zealand universities post-pandemic.

References

- Adzharuddin, N. A., & Ling L. H. (2013). Learning management system (LMS) among university students: Does it work? *International Journal of e-Education, e-Business, e-Management, and e-Learning*, 3(3), 248. <https://doi.org/10.7763/IJEEEE.2013.V3.233>
- Alshammari, S. H., Ali, M. B., & Rosli, M. C. (2016). The influences of technical support, self efficacy and instructional design on the usage and acceptance of LMS: A comprehensive review. *Turkish Online Journal of Educational Technology*, 15(2), 1161–25. <https://files.eric.ed.gov/fulltext/EJ1096463.pdf>
- Andrade, M. S., Miller, R. M., Kunz, M. B., & Ratliff, J. M. (2020). Online learning in schools of business: What influences faculty to teach online? *Open Learning: The Journal of Open, Distance and e-Learning*. Advanced online publication. <https://doi.org/10.1080/02680513.2020.1755643>
- Beckford, C., & Mugisa, E. (2014). Learning management systems: The current picture. In T. Bastiaens (Ed.), *Proceedings of World Conference on E-Learning* (pp. 153–163). New Orleans, LA, USA: Association for the Advancement of Computing in Education (AACE). <https://www.learntechlib.org/primary/p/148946/>
- Burke, K., & Larmar, S. (2021). Acknowledging another face in the virtual crowd: Reimagining the online experience in higher education through an online pedagogy of care. *Journal of Further and Higher Education*, 45(5), 601–615. <https://doi.org/10.1080/0309877X.2020.1804536>
- Dobre, I. (2015). Learning management systems for higher education: An overview of available options for higher education organizations. *Procedia: Social and behavioral sciences*, 180, 313–320. <https://doi.org/10.1016/j.sbspro.2015.02.122>
- Fredericksen, E. E. (2017). A national study of online learning leaders in US higher education. *Online Learning*, 21(2). <https://doi.org/10.24059/olj.v21i2.1164>
- Gous, I. G. P., & Roberts, J. J. (2015). About time: A metacognitive view of time and workload created by technological advancements in an ODL environment. *Distance Education*, 36(2), 263–281. <https://doi.org/10.1080/01587919.2015.1056334>
- Gregory, M. S-J., & Lodge, J. M. (2015). Academic workload: The silent barrier to the implementation of technology-enhanced learning strategies in higher education. *Distance Education*, 36(2), 210–230. <https://doi.org/10.1080/01587919.2015.1055056>
- Haresnape, J. M., Aiken, F. J., & Wynn, N. C. (2020). Sharing good practice and encouraging community cohesion online: A programme of tutor-led online events for Open University tutors. *Open Learning: The Journal of Open, Distance and e-Learning*. <https://doi.org/10.1080/02680513.2020.1752165>
- Harkness, S. (2015). How a historically black college university (HBCU) established a sustainable online learning program in partnership with quality matters. *American Journal of Distance Education*, 29(3), 198–209. <https://doi.org/10.1080/08923647.2015.1057440>
- Hollowell, G. P., Brooks, R. M., & Anderson, Y. B. (2017). Course design, quality matters training, and student outcomes. *American Journal of Distance Education*, 31(3), 207–216. <https://doi.org/10.1080/08923647.2017.1301144>

- Kim, A. S. N., Khan, S. A., Carolli, A., & Park, L. (2021). Investigating teaching and learning during the coronavirus disease 2019 pandemic. *Scholarship of teaching and learning in psychology*. Advanced online publication. <http://dx.doi.org/10.1037/stl0000296>
- Lenert, K. A., & Janes, D. P. (2017). The incorporation of quality attributes into online course design in higher education. *International Journal of E-Learning & Distance Education*, 33(1), 1–14. <https://files.eric.ed.gov/fulltext/EJ1146391.pdf>
- Lewis, C. C., & Abdul-Hamid, H. (2006). Implementing effective online teaching practices: Voices of exemplary faculty. *Innovative Higher Education*, 31(2), 83–98. <https://doi.org/10.1007/s10755-006-9010-z>
- Martin, F., Ritzhaupt, A., Kumar, S., & Budhrani, K. (2019). Award-winning faculty online teaching practices: Course design, assessment and evaluation, and facilitation. *The Internet and Higher Education*, 42, 34–43. <https://doi.org/10.1016/j.iheduc.2019.04.001>
- Morreale, S. P., Thorpe, J., & Westwick, J. N. (2021). Online teaching: Challenge or opportunity for communication education scholars? *Communication Education*, 70(1), 117–119. <https://doi.org/10.1080/03634523.2020.1811360>
- Nkonki, V., & Ntlabathi, S. (2016). The forms and functions of teaching and learning innovations on Blackboard: Substantial or superficial? *Electronic Journal of e-Learning*, 14(4), 257–265. <https://files.eric.ed.gov/fulltext/EJ1120627.pdf>
- Rhode, J., Richter, S., Gowen, P., Miller, T., & Wills, C. (2017). Understanding faculty use of the learning management system. *Online Learning*, 21(3), 68–86. <http://dx.doi.org/10.24059/olj.v21i3.1217>
- Saari, A., & Santti, J. (2018). The rhetoric of the “digital leap” in Finnish education policy documents. *European Educational Research Journal*, 17(3), 442–457. <https://doi.org/10.1177/1474904117721373>
- Schmidt, S. W., Tschida, C. M., & Hodge, E. M. (2016). How faculty learn to teach online: What administrators need to know. *Online Journal of Distance Learning Administration*, 19(1). https://www.westga.edu/~distance/ojdl/spring191/schmidt_tschida_hodge191.html
- Sebastianelli, R., Swift, C., & Tamimi, N. (2015). Factors affecting perceived learning, satisfaction, and quality in the online MBA: A structural equation modeling approach. *Journal of Education for Business*, 90(6), 296–305. <https://doi.org/10.1080/08832323.2015.1038979>
- Stantchev, V., Colomo-Palacios, R., Soto-Acosta, P., & Misra, S. (2014). Learning management systems and cloud file hosting services: A study on students’ acceptance. *Computers in Human Behavior*, 31, 612–619. <https://doi.org/10.1016/j.chb.2013.07.002>
- Uziak, J., Oladiran, M. T., Lorencowicz, E., & Becker, K. (2018). Students’ and instructor’s perspective on the use of Blackboard platform for delivering an engineering course. *Electronic Journal of e-Learning*, 16(1), 1–15. https://www.researchgate.net/publication/323276676_Students'_and_instructor's_perspective_on_the_use_of_blackboard_platform_for_delivering_an_engineering_course
- Walker, D. S., Lindner, J. R., Murphrey, T. P., & Dooley, K. E. (2016). Learning management system usage: Perspectives from university instructors. *Quarterly Review of Distance Education*, 17(2), 41–50. https://www.researchgate.net/profile/DarrellWalker/publication/308338607_Learning_Manag

ement_System_Usage_Perspectives_From_University_Instructors/links/5807cf5308aefaf02a2c6396/Learning-Management-System-Usage-Perspectives-From-University-Instructors.pdf

- Walker, R., Jenkins, M., & Voce, J. (2018). The rhetoric and reality of technology-enhanced learning developments in UK higher education: Reflections on recent UCISA research findings (2012–2016). *Interactive Learning Environments*, 26(7), 858–868. <https://doi.org/10.1080/10494820.2017.1419497>
- Washington, G. Y. (2019). The learning management system matters in face-to-face higher education courses. *Journal of Educational Technology Systems*, 48(2), 255–275. <https://doi.org/10.1177/0047239519874037>
- Watson, W. R., & Watson, S. L. (2007). An argument for clarity: What are learning management systems, what are they not, and what should they become? *TechTrends*, 51(2), 28–34. https://web.ics.purdue.edu/~brwatson/publications/Watson_Argument_Clarity_Techtrends_2007-4.pdf
- Wichadee, S. (2015). Factors related to faculty members' attitude and adoption of a learning management system. *Turkish Online Journal of Educational Technology*, 14(4), 53–61. <https://files.eric.ed.gov/fulltext/EJ1077631.pdf>
- Wilson, S. (2020). Pandemic leadership: Lessons from New Zealand's approach to COVID-19. *Leadership*, 16(3), 279–293. <https://doi.org/10.1177/1742715020929151>
- Wolfe, K. A., & Uribe, S. N. (2020). What we wish we would have known: Tips for online instructors. *College Teaching*, 68(2), 57–59. <https://doi.org/10.1080/87567555.2020.1711701>
- Ziraba, A., Akwene, G. C., Nkea, A., & Lwanga, S. C. (2020). The adoption and use of Moodle learning management system in higher institutions of learning: A systematic literature review. *American Journal of Online and Distance Learning*, 2(1), 1–21. <https://ajpojournals.org/journals/index.php/AJODL/article/view/489>

Biographical notes

Stephen Brown

stbrown@aut.ac.nz

Stephen James Brown graduated in 1993 with a BSc (Hons, class 1), and completed a PhD in 1997 from the University of Wolverhampton, UK. He has held lectureships at The University of London, DeMontfort University (UK), Massey University (NZ), and Federation University (AUS). Dr Brown's research interests are in student engagement and attitude to the STEM subjects, and the study of chemistry at undergraduate level. Dr Brown collaborates internationally with colleagues in Australasia, particularly at Central Queensland University, Australia, and The University of The South Pacific, Fiji.

Lyn Murphy

lyn.murphy@aut.ac.nz

Lyn Murphy is a senior lecturer in health management at Auckland University of Technology. She has a diverse academic background in education, health, psychology, management, and accounting, and has more than 30 years' teaching experience from business and health faculties. Lyn has served on several New Zealand boards, including local bodies, and has held government directorships. Her primary area of research is in obtaining value in health.

Kay Hammond

kay.hammond@aut.ac.nz

Dr Kay Hammond completed a PhD in Psychology from the University of Auckland, and an MSc in TESOL from Aston University. She has taught at universities in New Zealand and Japan. Her research interests include the scholarship of teaching and learning, with a particular interest in student and staff wellbeing. She recently won an excellence award for online team teaching from Auckland University of Technology.

Brown, S., Murphy, L., Hammond, K. (2021). Learning management system adoption by academics: A perspective following the forced lockdown of NZ universities due to COVID-19 in 2020. *Journal of Open, Flexible and Distance Learning, 25(2)*, [55–65].



This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License](https://creativecommons.org/licenses/by-nc-nd/3.0/).