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Lessons learned from being BOLD: Staff experiences of an institutional strategic project in Blended and Online Learning Development

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ABSTRACT

In recent years, tertiary institutions have engaged more with digital education, especially blended and online learning. One institution sought to transform its existing provision, and enhance learning and teaching, through a substantial strategic funding initiative comprising almost 20 individual projects.

To capture the learning from this substantial investment, 20 semi-structured interviews were carried out with staff involved in setting up or working on these projects, typically early adopters. Interviews sought to revisit motivations to engage with the project, and capture perceived benefits including lessons learned, challenges, enablers, support needs and recommendations going forwards.

Participants were motivated to enhance their own teaching practice and improve student learning experience/outcomes. Recognised benefits included enhanced learner experience, transformed teaching practice, flexibility and access, teaching efficiencies, and developmental opportunities for staff. Significant challenges related to the time required to design, develop and implement courses, as well as technological and student-related issues. Despite these challenges, participation in the project led to the development of new skills and transformed teachers' learning and teaching practice. This was made possible through a number of enablers including prior experience of blended learning, and supportive others from across various services, schools and colleges.

The study highlights the importance of strategic projects in expanding the digital capabilities of an institution to meet the expected—and unexpected—demands of the future. The findings are discussed in the context of the current literature on blended and remote learning, and existing institutional frameworks that support transitions to blended learning.

Keywords: blended learning, online learning, digital capability building, strategic projects, digital education

Introduction

Increasingly, higher education institutions (HEIs) are adopting blended and online learning opportunities, to enhance student learning experience, provide flexibility of access, and extend the reach of institutions globally (Gordon, 2014). Most recently, this has been extended through the provision of remote and blended learning in response to the Covid pandemic (Nordmann et al., 2020). However, this is not a new phenomenon; almost 20 years ago, Garrison and Kanuka (2004) promoted the transformative potential of blended learning in terms of promoting critical thinking and reflection for deep and meaningful learning. They argued that to take advantage of blended learning, institutions needed to pay attention to policy, planning and resources; resources required are financial (seed money and release time), human (instructional designers and learning technologists), and technical (reliable technologies). Work by Graham and colleagues (Graham, Woodfield, & Harrison, 2013; Porter, Graham, Spring, & Welch, 2014) focused on institutional transitions across three stages of blended learning adoption: (1) awareness/exploration, (2) adoption/early implementation, and (3) mature implementation/growth. Three sets of factors were seen to be essential to movement across the stages: strategy (including advocacy, definition, policy), structure (governance, scheduling and evaluation), and support (technical, pedagogical, incentives). These are reproduced verbatim in Appendix 1 for reference.

These considerations mirror the requirements of a transitional framework for institutions to transition to enhanced blended learning (Adekola, Dale, & Gardiner, 2017). That three-level framework included alignment of staff, students and the institution at its heart, influenced by several important considerations; an enabling institutional culture, effective management and organisation, digital pedagogy, a capable physical infrastructure, learning technology support, and attention to ethical/legal issues. External change agents framed these considerations. These considerations are mirrored in other studies highlighting the importance of leadership, infrastructure and support in transitioning to blended learning (Garrison & Vaughan, 2013; Moskal, Dziuban, & Hartman, 2013; Porter, Graham, Bodily, & Sandberg, 2016; Taylor & Newton, 2013). Similarly, in order to cope with the demands of remote and blended learning post Covid-19, infrastructural support, staff and student readiness, and pedagogically informed technology use are all needed (Ali, 2020).

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The institution in the study by Adekola et al. (2017) could be said to be at the second stage of Graham and colleagues’ framework. The third stage—mature implementation/growth—requires attention to be paid to evaluation. The evaluation in this subsequent study was one of staff experiences, carried out to determine the extent to which the institution had reached the mature implementation/growth phase, and to determine what additional actions needed to be undertaken to guide the institution’s investment in—and support for—blended and online learning. This involved ascertaining the benefits, challenges, and enablers associated with having completed a strategic project, as well as support needs and recommendations for the institution, going forwards.

Method

Context

In 2013, the University of Glasgow (UofG) launched a funding scheme which became known as BOLD: Blended and Online Learning Development. £2.34M was invested in two strands of projects: Strand A, focusing on online distance learning programmes, and Strand B, focusing on blended courses and programmes. Three rounds of project funding were allocated, with each project running over two years to allow for design/development and implementation. Nineteen projects were funded in all; examples are listed in Table 1 with accompanying citations to indicate wider dissemination of project outcomes or subsequently informed work*.

Table 1 Examples of BOLD-funded projects

Fully online distance programmes	Blended programmes/courses
PGCert in Art Crime and Antiquities Trafficking, and associated MOOC (Kubincova, Dale, & Kerr, 2018)	Introduction to functional programming in Haskell (blended course including MOOC) (Dale & Singer, 2019)
MSc in Health Professions Education (Huser & Jamieson, 2018)	Research methods course for Adam Smith Business School PGTs (online course in traditional Masters) (Morgan-Thomas & Dudau, 2019)
MSc in Psychology (conversion) (Barrett, Horlin, Swingler, & Morrow, 2019)	Burns Online; online course as part of a traditional degree, and an associated MOOC (Young, 2016)
MSc in Global Mental Health (Sharp, Karadzhov, & Langan-Martin, 2018)	Maths support for science: Helping students to achieve their full potential (Paschke & Ahmed, 2017)
	Blended learning to support student dissertations, enhance employability skills and prepare GTAs for 21st century teaching (Boyle, Ramsay, & Struan, 2019)*

Coinciding with the development of Massive Open Online Courses (MOOCs) at UofG (Kerr, Houston, Marks, & Richford, 2015), some projects also included a MOOC either as a first stage to developing online provision and to increase market awareness (Kubincova et al., 2018) or as part of a blended offering (Dale & Singer, 2019). Technical equipment (laptops, cameras etc.) were incorporated into some individual project funds, and additional kit was centrally supplied for those who requested it.

Projects were offered academic development support for curriculum design, and two approaches to learning technology support were implemented; instructional designers supported the development of most online distance learning programmes, while other programmes and courses received support from local learning technologists at point of need. Digital media production support was also offered for high quality video production, as well as advising staff on video production techniques they could use themselves. The projects overall were overseen by a project board representing colleges and services across the institution.

This development coincided with a QAA Scotland funded project focused on transitions into and through blended learning (Adekola, Dale, Gardiner, Murray, & Fischbacher-Smith, 2017), giving the university an unparalleled opportunity to enhance learning and teaching and to share good practice..

Research methodology

Ethical approval for the study was granted by the College of Medical, Veterinary and Life Sciences ethics committee, #200160080.

Data collection

Twenty academic staff representing the gamut of programmes and courses from across all four colleges and university services were interviewed, using a semi-structured interview proforma. Semi-structured interviews have the benefit of being able to draw comparisons between respondents’ answers, while allowing for individuals to present issues important to them (Cousin, 2009).

Thus, the research methodology was qualitative, underpinned by a constructivist epistemology and realist ontology. Based on an existing approach to evaluating e-learning (Dale, 2014), participants were asked about their motivation for engaging in the project, experienced benefits, barriers and challenges, and support needs going forward. Participants were also specifically asked about the impact of the project on their academic practice, as well as recommendations for other educators and the institution.

Data analysis

A general inductive approach was undertaken with regards to data analysis (Thomas, 2006). Half of the interviews (due to project time restrictions) were first analysed manually on paper by the research assistant (author Kubincova), with findings discussed with the first author. Author Dale then analysed all 20 interviews, manually on paper, before importing the data and codes to NVivo, for detailed coding and to establish frequency of codes. Individual codes were organised under the top-level themes of the evaluation, and then these were categorised, bearing in mind the considerations in Adekola et al.'s (2017) institutional framework and the outcomes of the original coding. Results were discussed with the authors Murray and Kerr, who had access to the original data. Rich description of the context, and quotes from participants, have been included to aid credibility, trustworthiness and transferability (Ryan, Coughlan, & Cronin, 2007). Categories are indicated in italics.

Results

Motivations

In terms of reflecting on motivations, these were categorised according to market demand (n=12), flexibility (n=10), opportunity to be involved in the project (n=10), improved learner experience (n=8), teaching efficiencies (n=8), enhanced teacher practice (n=6) and opportunity to showcase UofG (n=1).

Market demand factors included serving potential students who could not travel to Glasgow, including international students, serving professional and part-time learners, to increase student numbers, and scope for transnational education developments. *Flexibility* factors included giving students flexible learning at their point of need, including professional and study abroad learners. This was also to cater for larger student numbers, overcome timetable conflicts, and reduce the need for student travel.

"...having the ability to work at their own time, so the students kind of work through as fast or as slowly as they want. They've got the deadlines they have to meet, as I said, but around that the choice is completely theirs. So, I've been speaking to students about it and that's one of the things that they really like." (#9)

Opportunity to be involved included funding, support for blended and online learning in the college, or encouragement by a line manager. *Improving learning experiences* addressed deficits in existing face-to-face courses; either students did not enjoy the course, or there was a lack of participation. Other factors were to see how technology could enhance learning and teaching, and as a way to support a diverse cohort of learners.

"...in terms of computing science, teaching programming languages can be quite a dry and dull thing especially if it's just taught as a very traditional kind of lecture, you know, chalk and talk, that kind of thing. So I think the more you can make a programming language course interactive the better it is ... more engaging for the students..." (#12)

Enhanced teacher practice related to being expected to engage in online teaching and being able to reimagine face to face classroom teaching for online delivery. Being involved in teaching innovations including the flipped classroom, and being able to find out more about how to use learning technology, were also factors.

"...we reckon that this is the way that teaching will go and we wanted to start early to try and make our provision fit with the digital age." (#19)

Benefits

By far the biggest benefit to emerge was that it transformed teachers' approaches to teaching and assessment (n=16) including transforming their assessment practice (n=5). Other benefits included enhanced learner experience (n=11), flexibility and access (n=11), teachers' development of skills (n=9), and efficiencies (n=6). There was also recognition that the technologies worked well (n=2) and increased student numbers (n=1). Two participants stated that not all the benefits had been realised at the time of the study.

In terms of *transforming teachers' academic practice*, there was a strong recognition that they had developed (technology enhanced learning and teaching (TELT) skills they could use in other courses:

"Moodle's just like a dump for, you know, the PowerPoint slides and handouts and occasional announcements. Every course has one but they don't really use Moodle to its full potential. Even we don't with the online course, but ... we use a lot more of the modules ...and you start to really push what you can do with Moodle." (#8)

In some cases, this had transformed face to face teaching:

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"I do actually think it's quite a good way to teach and now I've started to do the online teaching, which was quite daunting to start, to be honest, how to actually do it all, I think it's enhanced my on campus teaching as well because I've started to bring in some of it on campus." (#5)

They were also able to reimagine their teaching for online delivery, including having developed confidence in chunking content for online delivery:

"One of the positive things about doing it with the BOLD is that I can see how I can chunk that information and encourage students to do a bit more work each week rather than all at the end." (#16)

Teachers' assessment practice was also transformed (more constructively aligned course design, diversified assessment methods, scope for more formatives, and improved feedback dialogue):

"So there was four exams. So that's all gone now. So, we introduced posters, a podcast, writing information sheets for other staff members or for patients. So these are skills that people kind of need to have, or would be useful to have." (#13)

Other ways in which teachers' academic practice was transformed related to more reflection on—and engagement with—student contributions, enjoyment of teaching including that of e-moderating, and using technology in transformative ways which enhanced teaching of the subject. As well as confidence in using learning technologies, teachers claimed to have developed media/video skills. It was also clear that teachers had learned 'on the job' with lessons derived from failure, such as the importance of clear signposting in blended learning, the need for a student induction to learning online, organisation and project management skills, the importance and value of good quality video, the need to continually maintain online courses, and adapting their approach in the light of ongoing evaluation.

In terms of *enhanced learner experience*, participants received positive feedback from students:

"...they rated the course extremely highly. They nominated me for the online teaching awards." (#3)

Students were also more motivated and engaged, they performed better, there was more active discussion and a record of formative work online, and students' needs were addressed in real time.

"... another benefit to the students is that, you know, once...as they progress their studies, the fact that they can go back to an earlier course and that Moodle site's still there, all their dialogue they've been having with each other in the past is all captured, I think helps in terms of revision..." (#20)

Flexibility and access to students was seen as a big benefit; as well as being able to study to suit their schedule, students overseas could access the courses, including year abroad students. This enabled students from different backgrounds and experiences to learn together. *Efficiencies* related to reusing resources for on-campus courses, and a recognition that the blended approach saved staff time in the long run.

Challenges

Time (n=17), technological factors (n=17), student-related factors (n=17), pedagogical issues (n=14), content development (n=13) and project management (n=10) were the biggest challenges and barriers. Others included institutional processes (n=8), campus infrastructure (n=4), uncertain market demand (n=2) and limited funding (n=2).

Related to *time*, there was general recognition of staff time limitations, as well as noting the time-consuming nature of producing online or blended courses:

"The biggest barrier was staff time which has been the biggest barrier, as I said, getting people to record the materials, because a lot of people already had a full schedule, they didn't have free time in the week and then the online course was decided on and then they had to also generate online materials." (#5)

Other time issues related to time being not properly bought out by the project, a short timescale to develop a lot of new material, and online teaching being more demanding than face-to-face despite the fact that face-to-face work took priority for staff who ended up developing blended or online courses in their own time. Running face-to-face and online courses at the same time was also considered difficult.

Technological issues related to limitations of (internal and external) learning platforms, a low level of prior technological expertise, technology failure or a fear of technology failing, the difficulty in organising online groupwork or online peer assessment, accessibility of videos, and poor audio quality of resources. *Student-related issues* included students' difficulty transitioning to online learning:

"So for a number of them, they...this is their first online learning experience... some of them, they had to get over a couple of pretty strong technological hurdles. They're not necessarily very technologically inclined. But they're interested in the subject, so they're willing to go through it." (#3)

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Other student-related problems included varying digital literacies, underestimating or spending too much time on online learning activities, technical issues at the student end, and digital equity issues including varying device ownership and internet access.

Pedagogical issues related to learning design in terms of including too many online tasks for students and adapting face-to-face activities for online delivery:

"I think in terms of the way the course is with the sort of tasks that we have for students to do ... one of the courses was quite busy in terms of a lot of tasks ... for the next course that's sort of running at the moment, we've got core tasks and then supplementary tasks for people who have more time and more flexibility." (#13)

There was a recognition that a translational approach to learning design had been used. Other pedagogical issues related to maintaining an active cohort identity when students worked through the materials at different rates, knowing how to monitor students' progress online, and a recognised danger of online learners losing face-to-face teacher or peer support. *Content development issues* included copyright of learning materials, lack of open-access resources or library access to a particular e-book, and not getting content from colleagues in time or of a sufficiently high quality. *Project management issues* related to general project organisation and deadlines, project leadership, working across departments, and lack of continuity of staff. *Institutional processes* included university systems not having been adapted for online delivery and in one case a perceived lack of recognition or reward. *Campus infrastructure issues* related to lack of appropriate rooms for teaching, or audio or video recording.

Enablers

Despite the challenges, a number of enablers were evident in the interviews. These included supportive others (n=20), self (n=12), colleagues (n=13), institutional support (n=10), pedagogical (n=10), existing resources (n=6), successful project management (n=2) and technologies working well (n=2).

Supportive others included university services, which all participants recognised to be valuable. This included support from a central academic developer, the learning technology unit and digital media team (as they were at the time), school and college level learning technologists, and support from librarians, Information Services and systems developers, student learning support including that for maths and statistics, and local administration:

"It felt like it was more a peer review type of thing, rather than, maybe a little bit of mentoring. But, it was nice to, for example, personally, I really appreciated the opportunity to meet with [anonymous], show [them] what I'd done, and get some feedback from a person who's got even more expertise in that area than I do." (#11)

Supportive others also included colleagues (including those with prior online learning and teaching experience), graduate teaching assistants or post-docs who helped develop course material, supportive colleagues or line managers, and other colleagues contributing materials. Students were also part of the supportive others; in terms of positive feedback, being supportive or forgiving of technical glitches in new courses, or giving developmental feedback. External support in the form of developments at other universities, or external contributors also came under this category. *Self-factors* related to having already engaged in the online learning space, familiarity with existing content, or having pedagogical expertise. *Institutional enablers* almost all related to funding. *Pedagogical enablers* included the induction week created within one college, offered as a template resource across the projects. *Existing resources* related to courses available for reuse.

Support

Despite the support received, participants requested ongoing technological support (n=6), service support (n=5), a learning community (n=3), resources (n=2) and an institutional commitment to make TELT compulsory (n=1).

Technological support included ongoing support from learning technologists or instructional designers, media support, and other training. *Service support* included more library support for content, and more streamlined administrative processes. A *learning community* that facilitated 'show and tells' was requested. *Resources* related to a quiet space for working or media recording.

Advice

Advice to the institution related largely to creating an *institutional vision* (n=11) with appropriate digital education support and communication, a focus on quality over quantity, and more joined-up systems. Other recommendations to the institution related to *workload* (n=7) recognising the time involved and creating headspace or real buyout time for staff. *Continued developmental support* including the community of practice (n=5), and *more support for students* (n=3) including taster courses for online learning and an incremental approach to online degrees, were also recommended.

Advice to other educators was pedagogical (n=12), workload-related (n=11), the need to seek support from others (n=7), organisational (n=6), content related (n=3), marketing related (n=3), the importance of piloting and evaluation (n=2), and to try out technologies in advance (n=1). *Pedagogical advice* concerned rethinking learning and assessment for online delivery, and to consider how to engage learners and enhance learning:

“Don’t have video for the sake of it and certainly don’t just put your pre-existing lectures on camera and say to the students, go and watch that for an hour, ‘cause they won’t. Similarly, don’t just put up pre-existing articles ... you’ve got to lead the learner through a course.” (#8)

Workload-related advice included being realistic about the amount of time required. Organisational advice included working as part of a team with clear responsibilities, but not too many contributors.

Discussion

The findings can be mapped to the frameworks of Graham et al. (2013) and Adekola et al. (2017), as shown in Table 2. In terms of ‘pedagogy’, represented in both frameworks, the study revealed that the majority of participants felt their teaching practice had been transformed. A study of blended nursing teachers noted the same finding; blended learning activities and assignments had to be different from face-to-face teaching (Jokinen & Mikkonen, 2013). This is relevant in the context of ‘Technological, Pedagogical And Content Knowledge’, as outlined in the TPACK model (Mishra & Koehler, 2006); that is, knowing how the technology can be used well within a specific subject domain, how that subject domain lends itself to specific pedagogies, and how technology and pedagogy influence each other. Despite this, and the associated improvements in learner experience and outcomes, the participants still experienced challenges.

In terms of challenges, many of these findings align with ‘management and organisation’ in Adekola et al’s (2017) framework, and the ‘structure’ elements of Graham et al. (2013). The biggest challenges related to staff time, technological factors, and student-related factors, despite the significant support offered by services across the institution, which all participants recognised. This support was seen as an enabler to effective blended and online learning development. There were institutional lessons learned from issues relating to staff time; for example, funded buy-out time does not work because less experienced staff are unable to do the work of their senior colleagues, despite the fact that teaching assistants played an invaluable role in creating learning materials. The technological infrastructure of the HEI was subsequently strengthened with the newly formed Information Services team consolidating their learning technology provision and support. A new Learning Innovation Support Unit was also established to offering digital upskilling sessions for staff, with input from other digital education experts across the institution. Together with ongoing support from other services, this stood the institution in good stead for when the Covid pandemic hit.

Another finding relates to the ‘ethical’ and ‘pedagogy’ component of Adekola et al’s (2017) framework. Although previous work had highlighted the importance of supporting student transitions to blended and online learning (Adekola, Dale, Gardiner, & Fischbacher-Smith, 2017), there were still issues around digital equity including device ownership and access to reliable internet, and varying student digital literacies—despite the fact that a shared induction course for students proved to be a valuable enabler. The most recent Jisc digital insights survey for students indicates that all HE students who took part had access to at least one device; however, it was not clear whether the device specifications were sufficient to fulfill all student learning needs, and it was recognised that many learners’ digital capabilities still need developing (Killen & Langer-Crame, 2020). The recent Gravity Assist report echoes the need to better support students in this regard (Barber et al., 2021).

Another challenge experienced by a minority of participants included unsupportive colleagues, represented in Adekola et al’s (2017) ‘institutional culture’ and Graham et al’s (2013) ‘strategy’. There has been some work done on the experience of early adopters of technology-enhanced learning; this has been described as ‘emotional work’ (Bennett, 2014), in terms of the personal effort invested by early adopters, who despite positive experiences of learning and teaching, often take the brunt of innovation in terms of risk of failure, and negative attitudes of unsupportive colleagues. In contrast, colleagues with experience of blended learning were seen to be enablers in this study. This echoes VanDerLinden’s (2014, p.80) observation that “faculty members who are already engaged in blended learning are critical players in creating awareness, encouraging others, and celebrating success”. A number of the early adopters in this study are the ones to have successfully led their colleagues through the transition to remote and blended learning in the wake of Covid 19, and some staff involved in BOLD-funded projects have contributed to guidance aimed at the sector, e.g. (Nordmann et al., 2020). Some colleges and schools across the institution appointed ‘flexible learning leads’ to produce guidelines and recommended working practices to support their colleagues, to be followed in line with guidance from the centre on recommended supported technologies, and how to use them in pedagogically effective ways (e.g. Singer et al., this issue). The experiences of other BOLD project leads as early adopters, and their response to the Covid 19 pandemic, are described in Huser et al., this issue. Others contributed their expertise through various learning and teaching committees.

Table 2 Findings mapped to critical considerations of Adekola's (2017) institutional framework and Graham et al.'s (2013) mature implementation/growth phase.

Coding categories from this study	Adekola et al (2017)	Graham et al. (2013)
<ul style="list-style-type: none"> Market demand Opportunity to be involved Improving learning experiences Enhanced teacher practice 	Change agents	
<ul style="list-style-type: none"> Institutional vision Institutional processes Institutional enablers Supportive others 	Institutional culture	Strategy: Purpose, Advocacy, Implementation, Definition, Policy
<ul style="list-style-type: none"> Time Project management Existing resources Workload Workload-related advice to other educators 	Management and organisation	Structure: Governance, Models, Scheduling, Evaluation Support: Incentives
<ul style="list-style-type: none"> Transforming teachers' academic practice Enhanced learner experience Flexibility and access Student-related issues Pedagogical issues Self-factors Pedagogical enablers Pedagogical advice to other educators 	Pedagogy	Support: Pedagogical
<ul style="list-style-type: none"> Campus infrastructure Service support Resources 	Physical infrastructure	
<ul style="list-style-type: none"> Technological support Technological issues Continued developmental support (communities of practice) 	Learning technology support	Support: Technical
<ul style="list-style-type: none"> More support for students Content development e.g. copyright 	Ethics and legal	

Given the unanticipated Covid-19 pandemic, the 'change agents' in the institutional framework could be modified to include 'unknown factors' (threats/opportunities). Despite this tragedy, staff, students and the institution—as replicated across the tertiary sector—worked hard to provide continuity of care and high-quality learning experiences for learners. In addition, in late March 2020, the University made the decision to open over 20 MOOCs including those that had stopped running, to increase wider access to online education after Covid-19. Many of these were developed by academics involved in BOLD projects. Building on the substantial progress of the BOLD project, the pandemic has provided an opportunity to consolidate blended learning strategy, structure and support to the extent that the institution can be said to have reached the mature implementation/growth phase. Further efforts to address the requirements of remote/blended delivery in response to the Covid-19 pandemic have further strengthened the institution in this regard.

The biggest limitation of this study is that it is a single case study of early adopter experiences in one HEI at a single point in time before the current pandemic. The findings are not intended to be generalisable; rather, transparency in the context, methodology

and results (Ryan et al., 2007) has been demonstrated so that the findings may be transferable to other institutions looking to future-proof their own institutions to more effectively support blended and online learning. Future work should include the ongoing evaluation of teacher experiences in tandem with that of learner experience research and evaluation of learner outcomes.

Conclusion

The study revealed the experiences of early adopters in pushing the boundaries of an institution evolving to meet the demands on an increasingly digital education landscape. Despite the significant benefits such as academics' transformed teaching practice and enhanced student learning experience, the evaluation revealed challenges around limits to technological infrastructure and other service support issues, which were subsequently resolved, leading to institutional resilience to cope with disruption, though some issues, such as student digital equity and staff workload, remain challenging. Key recommendations for other institutions, aligned with the frameworks by Adekola et al. (2017) and Graham et al (2013), would therefore be to:

- Continue to invest in physical infrastructure, such as wifi and resilient learning technology platforms;
- Offer learning technology support at point of need; this may be centralised and/or locally across the institution;
- Consider the pedagogical affordances of blended and remote learning and teaching, opting for a transformative approach that uses technology optimally, providing academic development opportunities for staff, and supporting students through appropriate induction activities;
- Consider the ethical and legal aspects of digital education, including copyright and digital equity (and although not raised in this study – GDPR and digital accessibility);
- Continue to develop a supportive managerial culture, appropriately recognising and resourcing staff workload and incentives; and
- Support appropriate risk and innovation through an enabling institutional culture, in conjunction with forward-thinking strategy.

The key recommendation to educators would be to learn from early adopters who are willing to share their experiences and expertise; institutions should help facilitate such communities of practice.

There is no doubt in the authors' minds that without the institution's strategic BOLD project, the university would have had a more difficult job transitioning to increased blended and remote learning associated with the Covid-19 pandemic which subsequently provided an opportunity to consolidate strategy, structure and support. The implications, as we move forward as a sector, are that such strategic capability building projects are essential to the survival and growth of tertiary education, and that robust evaluations of their progress are needed to ensure ongoing expansion and success.

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John Kerr, BSc (Dist) MA, FHEA, CMALT, is the Learning Innovation Unit Manager at the University of Glasgow. John leads a team of Learning Innovation Officers, tasked with delivering digital culture change across the institution. John is responsible for developing Glasgow's MOOC portfolio with FutureLearn and Coursera. His responsibilities also include delivering on a range of MicroCredentials and fully online degrees in partnership with these platforms. John also chairs the Scottish MOOC Committee and is the author of the MOOC Design Mapping Framework.

Jo-Anne Murray, PhD, MSc, PgDip, PgCert, BSc(hons), BHSII, RNutr, PFHEA, is Professor of Educational Innovation and has led digital education strategy for the University of Glasgow since the BOLD project. Jo-Anne has also led the development of a range of innovative learning and teaching approaches including virtual worlds, mobile apps and MOOCs. Jo-Anne has also led and

participated in a range of research activities in education and is often invited to speak at educational conferences about her work in digital education.

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Appendix 1: Indicators of mature growth/implementation of blended learning (BL), reproduced from Graham et al., (2013)

Strategy

Purpose: Administrative refinement of purposes for continued promotion and funding of BL

Advocacy: Formal BL advocacy by university administrators and departments/colleges

Implementation: Departments/colleges strategically facilitate wide-spread faculty implementation

Definition: Refined definition of BL formally adopted

Policy: Robust policies in place with little need for revision, high level of community awareness

Structure

Governance: Robust structured involving academic unit leaders for strategic decision making

Models: General BL models encouraged not enforced

Scheduling: BL designations or modality metadata available in registration/catalog system

Evaluation: Evaluation data addressing BL learning outcome systematically reviewed

Support

Technical: Well-established technological support to address BL/online needs of all stakeholders

Pedagogical: Robust course development process established and systematically reviewed

Incentives: Well-established faculty incentive structure for systematic training and implementation