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Lessons Learned from Early Adopters of Blended and Online Learning

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ABSTRACT

In 2013, the University of Glasgow published an e-learning strategy, setting out a vision for the university's digital education delivery between 2013 and 2020. The strategy's aim, in part, was the creation of personalised, interactive and feedback-rich courses, and staff were noted as key enablers of the strategic priorities. As a result of this strategy, several initiatives were developed, including the creation of massive open online courses (MOOCs) and the implementation of the Blended and Online Learning Development (BOLD) project. These led to the creation of fully online postgraduate taught (PGT) master's programmes, blended undergraduate courses, and eventually, the creation of a Digital Education Unit. More recently, micro-credential courses have been developed, which bridge the gap between MOOCs and full online accredited programmes. Finally, in 2020, the COVID-19 pandemic led to the rapid pivot to remote teaching. In this article, we describe the roles, challenges and opportunities of early adopters in a number of these initiatives across the university through the authors' lenses, giving a reflective account of our lessons learnt and recommendations for staff involved in similar initiatives.

Keywords: e-learning, blended learning, MOOC, online-distance learning, micro-credential, COVID-19

Introduction

Early in the 21st century, the e-learning market increased rapidly, and was predicted to grow substantially (Adkins, 2011). Other Russell Group universities had higher numbers of students studying online outside the United Kingdom (UK) than did the University of Glasgow (UofG), and other universities were increasing their provision of online distance learning (ODL) courses (Appendix 2 in UofG, 2013). In 2013, UofG published an e-learning strategy (University of Glasgow, 2013), setting out a vision for the university's digital education delivery between 2013 and 2020. The e-learning strategy complements UofG's overall vision for a physical and virtual learning environment which offers "flexibility in what, how, when and where" (University of Glasgow, 2013, p. 1) students learn, thereby addressing the needs of a diverse learning community. In creating the e-learning strategy, UofG recognised the growing importance of the virtual learning environment, from being a space to store and submit documents, to a 'place' where educational interactions occur, multiple pedagogic approaches are integrated, and which enriches traditional campus-based learning (Dillenbourg, Schneider & Synteta, 2002). While the e-learning strategy was being devised, all courses at UofG switched to Moodle 2 in order to utilise the greater variety of functionalities available with this upgrade. A few functionalities, such as BigBlueButton, were being trialled in some courses at the time, and the aim of the e-learning strategy was to encourage and support such innovative endeavours.

Similarly to others (Sharpe, Greg & Richard, 2016; Singh & Hardaker, 2014), the e-learning strategy emphasised staff as key enablers of the strategic priorities, but noted that support mechanisms needed to be addressed in order to scaffold engagement with innovative e-learning technologies. As part of the UofG e-learning strategy, funding was advertised for several initiatives, including the development of massive open online courses (MOOCs) and the implementation of the Blended and Online Learning Development (BOLD) project in 2014. These initiatives led to the creation of fully online postgraduate taught (PGT) master's programmes from 2015 onwards, and eventually, the creation of a Digital Education Unit (DEU). More recently, micro-credential (MC) courses were developed, which bridge the gap between MOOCs and full online accredited programmes (Orr, Rampelt & Knoth, 2020).

Users of innovative technologies have been divided into categories based on their willingness to interact and engage with new technologies in Rogers' diffusion of innovations model (Rogers, 2003; Kaminski, 2011) and in Moore's (2014) 'crossing the chasm' adaptation. Both models use a bell-shaped curve to illustrate the relative low number of innovators, followed by early adopters. These groups are then followed by early majority, late majority and laggards. In both models, early adopters of technology are described as opinion leaders, trend setters, and can serve as role models for further groups of adopters. Although focused on the marketing of high-tech products, Moore (2014) describes a chasm between the early adopter and early majority categories, which needs to be overcome for new technology to be adopted in the wider community. Both models highlight the importance of early

adopters in showcasing new technologies to the early and late majority. The development of the UofG e-learning strategy and the ensuing implementation of initiatives served to foster the development of early adopters of e-learning technologies.

In 2020, the COVID-19 pandemic led to the rapid pivot to remote delivery of all undergraduate (UG) and PGT learning and teaching activities, and as a result of the implementation of the e-learning strategy, UofG found itself with a high number of early technology adopters able to respond at local, school and college levels. In the remainder of this article, we present, through the lenses of the early adopter contributing authors, case studies from the various initiatives across the UofG, and reflect on the roles of the early adopters as well as the lessons learned.

Case study 1: The BOLD project

The BOLD project was instigated at UofG in 2014. It was "a strategic, institutionally-funded project to pump-prime developments in blended and online learning" (University of Glasgow, 2020). BOLD funding encouraged 'buy-in' and release of academic staff time for course development. Technological support and digital and curriculum design expertise was available centrally, while those in the College of Medical, Veterinary and Life Sciences (MVLS) benefited from the establishment of the DEU.

SJ led the former on-campus programme in Health Professions Education (HPE). There was a clear rationale for redeveloping this as a modular part-time, online distance learning (ODL) programme: increased flexibility and access. SJ, CH and another colleague developed the ODL MSc HPE, which first ran in 2015-16. The MSc in Advanced Practice in Veterinary Nursing (APVN) was developed by SF and first ran in 2017-18. The first fully online MSc programme to be offered specifically to vet nurses potentially had a global reach, and being fully ODL was key to accessing this relatively niche market.

Reflection on challenges in ODL course creation

Developing a three-year part-time PGT degree is a full-time job over three years. After the initial development, there is continuing commitment: online lessons need reviewed to identify updates and reviewed again to check the changes, and moderating forums and assessment take time. It is challenging to be teaching one week's material and reviewing a couple of others simultaneously. Interaction with learning technologists means you are dependent on other people's time scales.

Budgets were focused on digital provision and cost of software, not staff time. There have been hidden and delayed costs: e.g. the need to provide transcripts for accessibility has required investment in transcription services by the APVN programme.

Certainly prior to the COVID-19 pandemic, the institution's policies and procedures catered primarily for face-to-face, on-campus programmes. While there is now greater appreciation of online learning, there may be less appreciation of the distinction between the rapid "online pivot" and well-designed ODL courses (Nordmann, Horlin, Hutchison, Murray, Robson, Seery & MacKay, 2020).

Reflection on challenges specific to ODL learners

Our online learners are often juggling full-time jobs, ODL studies and personal lives. They want everything signposted; they do not want to waste time finding things. If learning activities do not contribute to assessment, learners may not engage. This may explain why we have found it difficult to recruit class representatives.

When developing courses for ODL, we were encouraged to engage with lots of technology; in hindsight, it may have been better for staff and students to keep things simple and intuitive. Experience on the HPE and APVN programmes is that students are not necessarily comfortable with technology and many express anxiety when being introduced to something new. They appreciate 'how-to' videos to walk them through using new technologies (e.g. for Teams, Sway, Padlet, Moodle, wikis). On the HPE programme, in an in-course quiz about digital education, most students regarded themselves as 'digital visitors' (White & Le Cornu, 2011) and acknowledged that engaging with the programme substantially increased their digital footprint.

To develop academic performance in the online context, the APVN programme has used non-compulsory formative feedback activities, but SF has found there is more 'buy-in' to formative activities if they involve submitting a piece of written work to the course leader, as opposed to participation in formative discussion boards, a trend observed by others (Vickerman, 2009; Kaufman & Schunn, 2011). The HPE programme has opted for compulsory formative activities, including compulsory posts on topics that students otherwise avoid, and formative critical appraisals each semester in Year 1. One common concern, also raised by others (Guiller, Durnell & Ross, 2008; Williams & Lahman, 2011) was how to ensure learners demonstrated criticality and a mechanism used by both programmes is the weekly 'reflection point forum' (critically reflective summative posts).

Reflection on benefits of being early adopters

Digital, technological and pedagogical support provided centrally and locally removed some of the burden of identifying software and ideas for online course design. DEU colleagues advocated development of asynchronous courses, recommended interactive software, and dealt with purchasing and contracts.

Our experience added to institutional knowledge of what works in ODL. Early adopters effectively road-tested certain software and aspects of course design.

The organisation of an internal BOLD conference enabled sharing of experiences with other staff delivering ODL courses. This was important because, prior to the COVID-19 pandemic, there was limited acceptance of ODL courses as bona fide university provision.

Reflection on challenges of being early adopters

The purchase of software was decided centrally. To course leaders who were perhaps not very digitally-aware, purchases appeared driven by technology rather than pedagogy. Central decision-making regarding software makes sense in terms of purchasing power and institutional support, but potentially disenfranchises staff while impacting their workload.

Some training needs were misjudged. It was difficult to access specific training in facilitation of asynchronous and synchronous online sessions. While there was training and support to try lots of different software, the distinctions between their functionalities was sometimes complex and the choice often overwhelming. Standard UofG staff development provision assumed involvement in delivery of face-to-face courses.

The experience of developing BOLD programmes was particularly isolating for SF, since she was the only member of staff in her school working on an ODL programme.

Summary and recommendations

In summary, being an early adopter of ODL was generally positive, due to interest and variety on the job, more support initially, being seen as knowledgeable, access to other online opportunities, more chance to innovate, a global perspective, and being able to engage a breadth of learners. Our recommendations are:

- Digital teams and e-learning technologists should build learning around a core of software options that are easy for students and staff to use.
- Talk to experienced providers about “hidden costs” and “must haves”.
- Advice is needed on what is nice to have versus what is necessary.
- Support academics as teachers e.g. how to facilitate an online course.
- Script content and record slide by slide for ease of updating.
- Ensure consistency – staff often have different opinions on how materials should look.
- Do not be scared of trying things; but be open with students and evolve courses with them.
- Be flexible with working hours to accommodate learners’ time differences and work schedules.
- Set expectations – students understand you need weekends and are appreciative of accommodations, such as two time zone repeats.
- Enjoy working with enthusiastic dedicated students!

Case study 2: Blended MOOCs

With respect to blended learning, we now consider two diverse disciplinary contexts in which we innovatively blended MOOCs with existing undergraduate teaching practice.

In the final year of their undergraduate studies, Computing Science students at UofG take several elective modules. One option is ‘Functional Programming’ which introduces the Haskell language. Due to the language’s historical associations with Glasgow, most Computing Science students select this module which gives them a distinctive sense of institutional and professional identity. The ‘Functional Programming in Haskell: Supercharge your coding’ MOOC was developed at UofG, using and adapting resources from the first half of the face-to-face elective module on Functional Programming with co-aligned learning outcomes. The twin objectives of this initiative were (1) to enhance the learning journey of campus-based students, and (2) to reach out to

distance learners with an opportunity to experience the Haskell programming language. A detailed mixed-methods evaluation (Dale & Singer, 2019) revealed that students appreciate the flexibility afforded by blending. Students in a focus group said they valued the mix of different types of learning activities hosted on the MOOC platform. Since MOOC participants include external learners, the campus-based students have a broader educational experience in a more diverse community.

The MBChB medical curriculum at UofG provides the opportunity for students to pursue their own interests for a proportion of the course, in line with General Medical Council (2020) guidelines. This is partly achieved through Student Selected Components (SSCs). In response to increased student numbers and requests for a wider range of topics of study, the use of MOOCs as SSCs was explored. The use of our own MOOC 'Cancer in the 21st Century: The Genomic Revolution' to provide an SSC for up to 25 second year students was trialled. Core teaching on the SSC used the six weeks of the MOOC, condensed into two weeks. During this time students also attended in-person weekly tutorials with MOOC teaching staff, to consolidate their learning and discuss any issues needing clarification. The second half of the SSC comprised students working in teams to produce a case report on a topic relevant to the MOOC. The range of skills students felt they had developed varied, but there was an interesting emphasis on the development of self-knowledge and self-directed learning (Marks & Meek, 2018).

Reflection on benefits of being early adopters

Support was readily available for our development activities, both financially and in terms of media services, as the work was aligned with flagship corporate strategy on blended learning.

The MOOC platform provides opportunities for rich data gathering and analytics, enabling agile and iterative improvement of the learning resources (Singer & Archibald, 2018).

Opportunities for scholarship in this area were abundant due to the innovative nature of the work. Engaging with colleagues internationally provided impetus to teaching staff and led to collaborations and sharing of ideas and good practice over a number of years.

Reflection on challenges of being early adopters

We encountered endemic scepticism as to whether high quality learning and teaching was possible using a MOOC explicitly designed to cater for a wider generalist audience.

Although the majority of students chose the particular blended courses because of personal interest in the topic rather than the style of learning, a few commented that they thought it would be easier than traditional in-person courses. This perhaps reflects the erroneous assumption that online teaching is seen to be a watered down version of in-person education.

Students' prior knowledge of MOOC platforms is easy to overestimate. The majority had never engaged with online learning before the blended course, and unfamiliarity with the virtual environment was perhaps a factor in some students' reluctance to contribute on public forums.

Summary and recommendations

- Despite a superficial perception that the deployment of MOOCs has the potential to dilute the educational experience, we found that a thoughtful blending approach could amplify and strengthen learner engagement.
- Blending MOOCs cannot be used as an avoidance mechanism for rich educator participation. Staff engagement and commitment to the student experience are paramount.
- Students place high value on their interactions with educators, whether they be clinicians, software engineers or teaching staff within the University. Therefore, an emphasis on the meaningful, though non-traditional interactions which are mediated through MOOC platforms can enhance the student learning experience.
- Finally, the opportunity for students to take on the role of educators in designing and producing MOOC content has been a highlight of our experience thus far, and though applicable to a smaller number of students, has been a universally rewarding experience.

Case study 3: Microcredential courses

This section describes the experience of SC and SJ as course leaders on two of the first micro-credential (MC) courses offered by UofG, in the summer of 2020. MCs are "small chunks of learning for which learners can obtain recognisable credentials" (Orr et al., 2020, p. 590). The Scottish Funding Council (SFC) established a new model to resource PGT provision, funding the development of MCs and free places for Scottish-domiciled employees who meet course entry requirements. Crucially, the new MCs must deliver skills (and underpinning knowledge) to meet existing skills gaps in the Scottish workforce. UofG engaged

enthusiastically with the Upskilling Project, offering seven 10-credit MCs for 2020. The plan was to re-purpose existing material from UG or PGT courses.

Previously, a number of National Health Services (NHS) / Scottish Government reports (NHS Education for Scotland, n.d.; NHS Scotland, 2013; Scottish Government, 2016; Scottish Social Services Council, n.d.) had identified a need to support health and social care staff in developing strong leadership and management skills. SC leads the UofG master's programme in Health Services Management and an online postgraduate certificate in Leadership in Health and Social Care, and could see the need for a MC on Introduction to Management and Leadership in Health and Social Care (IMLHS).

While the primary role of healthcare professionals (HCPs) is the delivery of healthcare, a secondary role is to teach fellow HCPs and students. HCPs have traditionally received little formal training in how to teach. Existing PGT provision is typically short, non-credit-bearing courses or standard academic qualifications. SJ leads the UofG online master's programme in Health Professions Education and could see the rationale for a MC in Teaching Healthcare Professionals (THP).

Seven MCs launched in July 2020, managed by a project team comprising staff experienced in delivering MOOCs. They were responsible for liaising with FutureLearn (FL, the platform provider), marketing, etc. Each MC was supported by a learning technologist and had a small budget to organise part-time academic support. The College of MVLS used some of the Upskilling funding to employ a part-time administrator to support the five MCs being developed by its staff (including ours). While learning materials were hosted on the FL platform, assessment was administered via the UofG's standard virtual learning environment, Moodle. Learners could undertake assessment to gain 10 credits at master's level or do the course on a non-assessed basis. The IMLHS and THP MCs respectively had 151 and 181 learners enrolled in the first run; of these, 81 and 90 chose to undertake assessment.

Reflection on challenges of being early adopters

Timing: Development of the MCs coincided with the coronavirus pandemic in the UK; initial team meetings were shortly before the first UK lockdown in March 2020. Thereafter, development activity was conducted wholly online. Institutional processes and services were not geared towards learners arriving in late July, causing tensions. The first run of the MCs followed the 'first wave' of COVID-19 in the UK. Since our learners were HCPs, they were under enormous pressure although, anecdotally, some found the MCs to be welcome relief, giving them an opportunity to reflect on their practice during the pandemic.

Workload: We quickly discovered that "repurposing" existing material for the FL platform required significant redevelopment. We continued delivering our parent programmes and contributing to the 'pivoting' of undergraduate courses, so workload was high.

Technology: We had no personal experience of the FL platform. While there was support from learning technologists, the new (for us) framework for course delivery meant investing time in learning about FL's functionalities.

Resources: Each MC had funding for a part-time graduate teaching assistant. However, university procedures and organisational constraints made timely recruitment very difficult. We relied on the goodwill of colleagues to provide materials for specific teaching weeks.

Integration: There were significant challenges working across the FL/Moodle interfaces. We were working with different teams on our MCs and the corresponding parent programmes. Some MC team members were unfamiliar with UofG assessments, including governance issues and timescales.

Learners' expectations: Many of our learners had not undertaken academic courses since their UG degree, often some years previously. They were unused to independent study and some were unfamiliar with conventions in academic writing.

Reflection on benefits of being early adopters

Learner-centredness: Using new technology and a different platform encouraged us to identify what is core for the learners. Learning materials had to be clear and easily accessible online.

Innovation: We trialled innovations. On THP we put sustainable assessment (Boud and Soler, 2016) into practice, building our second assessment around feedback given for the first. On IMLHS we trialled formative peer assessment.

Accessing new learners: We attracted learners from across Scotland and further afield. For THP we recruited a wider range of HCPs than we see on our parent programme.

Community of learners: On IMHLS, interaction between a range of healthcare workers in different geographical areas and at various stages of their careers was facilitated by the course design. On both MCs, staff put considerable effort into the FL mentoring function (moderating and facilitating online discussions). Discussion forums allowed teaching to be responsive to students' needs in a timely way. Forums were moderated seven days a week with moderating being shared across a team.

Enrichment: Engaging with MC learners on online discussion forums enriched our understanding of their work context in Scottish healthcare, feeding into the development and relevance of our parent programmes.

Recruitment: Although the 'carrot' of recruiting learners to our parent programmes has not been fully realised, one IMLHS learner from the first run signed up to the relevant parent programme, with more anticipated for the 2021 academic year.

Variety: The opportunity to work on new materials, with new technology, new learners and new colleagues added great variety to our academic roles.

Recommendations

- For your MC to be cost-effective, design it to run a few times.
- Do not underestimate the time for moderation and assessment. On the IMHLS MC there were 3,137 comments from moderators and students on the 10-week course.
- It is vital to have an e-learning technologist on your team.
- Build a good team and emphasise potential gains, e.g. some teaching staff who were involved in our MCs are now looking to develop MCs in their own speciality.
- Give students access to external specialists. Short, recorded interviews with external specialists minimises the specialists' time. Students could ask follow-up questions in the discussion forum and specialist responses could be given on the platform.

Case study 4: Pivot to online delivery in response to coronavirus pandemic

When the COVID-19 pandemic forced universities to close their campuses and rapidly move to online teaching delivery, early adopters of online teaching were asked to advise, set up technologies and train staff and students. In medicine, for example, early adopters helped design and deliver small group teaching for over 60 groups of students within days of the campus shutting down (Sneddon, Stapleton, & Huser, 2021), and interactive virtual wards were designed and delivered with weeks of lockdown being announced (Huser, Templeton, Dhanani, Stewart, Hughes, & Boyle, in press).

Reflection on benefits of being early adopters

While the pivot to online was still no doubt a source of consternation, early adopters at least had the advantage of experience, being more comfortable with technology and particularly with getting to grips with and trialling new software. As early adopters, we were also familiar with the concept of software updates, which became more frequent as the software developers worked to adapt to the new uses of their products. We were also comfortable with innovation in online teaching and familiar with the pedagogic approaches used. Early adopters also had a sense of the challenges faced by ODL students.

Reflection on responsibilities of early adopters

By virtue of being experienced and comfortable with e-learning technology, early adopters shouldered additional responsibilities on an ad-hoc basis, albeit linked to pre-existing formalised roles:

Offering reassurance to colleagues: As staff pivoted their teaching material for online delivery, early adopters were used as a sounding board. The early adopters' reassurance that the pivot plans would work encouraged colleagues to spend the time required in creating online content.

Recommending a pedagogic approach suited to online learning: Early adopters advised teaching staff on teaching techniques such as chunking lectures into smaller parts. Other common suggestions included the use of interactivity through interspersing quizzes between lecture chunks, use of interactive functionalities such as H5P on Moodle and flipping classes (Huser et al., in press; O'Flaherty & Phillips, 2015). Early adopters played an important role in encouraging not just the translation of face-to-face teaching material to an online platform, but the transformation of teaching practice to suit the online environment. For example, the use of breakout rooms allows the application of a socio-constructivist teaching approach not as easily achieved in a normal lecture theatre (Sobko, Unadkat, Adams, & Hull, 2020).

Offering practical, individualised help: General pedagogic principles and guides were being distributed centrally by UofG, and we found that early adopters had a role in providing local practical guides and walk-throughs, directly relevant to the context of individual teaching staff. For example, the College of Arts ran a highly active Moodle forum where educators could ask for practical advice, while in the School of Critical Studies, RY led weekly drop-in sessions to enable colleagues to discuss practical steps towards remote delivery of their own classes. Occasional 'themed' drop-ins also allowed collective discussion on unfolding developments; for example, new public sector digital accessibility requirements, early feedback from students on how online teaching was working, or newly introduced teaching tools such as Mentimeter. The latter shows the important role of the early adopter in trying out and promoting new tools and technologies for teaching. Individual meetings can also be an effective way of sharing early

adopter experience in a manner that is meaningful for colleagues, and suited to each individual's comfort and ability with technology. Rather than dictating a set of rules for online teaching, such sessions allowed colleagues to discuss practice within the specific context of their own classes. Here, the role of early adopter might usefully be described as a facilitator or mentor, supporting colleagues in designing their teaching, helping them decide which software will achieve the learning goals, or whether to opt for asynchronous, synchronous or the emergent model of 'bichronous' delivery (Martin, Polly and Ritzhaup, 2020), as appropriate to their course, specialism and students.

Summary and university-level recommendations

The benefit to the UofG of having supported and driven early adopters in ODL provision is that we developed significant institutional knowledge about successful delivery of ODL, which made us well-positioned to respond to the pandemic. Some of the newly developed ODL teaching material surpassed the pre-pandemic face-to-face teaching, as it encouraged more active learning. The sharing of expertise and good practice in ODL means that when campuses re-open, we anticipate a better blended learning experience for our students than pre-pandemic. Our recommendations include:

- Avoid overwhelming staff with advice. The nature and extent of advice given, no matter how well-meaning, can increase pressure on colleagues. With the rapid pivot to online delivery, numerous advisory articles were produced by online educators generously sharing their expertise with the sector, while locally we added to a growing mountain of resources with yet more written advice and teaching tips. Already overburdened staff did not always have the time to engage fully with these resources, which led to colleagues being overwhelmed by the amount of advice from school, college, university and the higher education sector more widely.
- Early adopters should help academic colleagues make the decision about which software to use, focusing on a core of technologies and tools that are easy to support, then create step-by-step instructions. Staff can then concentrate on creating and delivering the material, without having to make decisions about technology or spend an excessive amount of time learning how to use it.
- Implement local support mechanisms which factor in the time of early adopters and colleagues in a support role. Filter support which can be dealt with locally (e.g. pedagogy and teaching practice) and which are for central services.
- Review and where necessary adapt institutional policies, procedures and services to ensure they are flexible enough to support new blended-learning formats, staff who deliver ODL courses, and the needs of ODL students. For example, services are often geared towards on-campus students, and include some face-to-face elements. Institutions should therefore ensure that ODL students have similar opportunities for training, counseling, access to societies, etc. as on-campus students. Similarly, ODL courses are not restricted to the general university calendar, as they can and often do take place over different term lengths or times. University policies and processes should be revised to ensure flexibility of timing of courses which do not fall within the standard for on-campus courses.
- Applaud enhancements and positive changes in learning and teaching in response to the pivot so that they might be recognised as such, and not aberrations to be swiftly corrected by a return to pre-COVID-19 practices and 'business as usual'. In our School of Critical Studies, for example, we held a showcase to share good practice during the pandemic, which showed that colleagues were not only surviving but in some cases thriving, developing innovative online practice in teaching and community building.

Reflective discussion

In accordance with Moore's (2014) model of adoption of innovations, we, the early adopter authors of this article, have extrinsic reasons for adopting innovations, and can be considered as opinion leaders or role models in terms of our use of technology-enhanced learning. In some cases, when we have been first to implement a technology at UofG, we have fallen into the category of innovators, with intrinsic as well as extrinsic motivation, tolerating ambiguities and setbacks (Elgort, 2005) as the price to pay for more varied, enriching and rewarding work. In contrast, those in the early majority category will adopt innovations once these have been shown to work well, and are integrated with the other systems in use (Moore, 2014).

A systematic review published in 2014 indicates that e-learning strategies tend to be geared towards technically literate and innovative staff, equivalent to innovators and early adopters (Singh & Hardaker, 2014). However, these strategies might reduce the likelihood of early and late majority staff adopting technology. Singh and Hardaker (2014) argue that the role of social dimensions must be recognised, such as goals, interests and needs of staff, as well as sources of support and patterns of work. UofG has published a new learning and teaching strategy in February 2021 (University of Glasgow, 2021), which includes aims to consolidate online and blended learning, continue innovating new educational strategies, and increase staff support and development.

Being innovators and early adopters on the initiatives described has allowed us to become comfortable with the use of technology in learning and teaching, as well as with the inevitable bugs, glitches and software updates which naturally accompany such endeavours.

The cost of being early adopters has mainly been in the increased amount of time needed to investigate, learn to use and test new software, as well as time taken to navigate institutional systems which were not geared towards online delivery. Academic silos have also hampered sharing of good practice across disciplines, and university-wide events have been invaluable in overcoming this particular barrier. Moving forwards, communities of practice could ensure continued inter-disciplinary sharing of good practice.

As early adopters of technologies, we benefit from testing software early in the development phases, giving us an opportunity to make suggestions and ensure the new functionalities meet our needs. Through refinement of our online teaching processes, we have earned the trust of early majority adopters, which has helped new technologies bridge the gap to being adopted more widely within our academic community (Moore, 2014), and which has been invaluable in our response to the COVID-19 pandemic.

In this context, perhaps it could be said that early adopters are simply *primus inter pares*, and one could wonder whether early adoption may mean less in a post-pandemic world in which we have all adopted the use of technology for learning and teaching. However, we believe that early adopters will have an important role in the development of post-COVID-19 blended learning. There are many local examples of teaching having been improved by adaptation to the emergency pivot to online learning, and we will need to ensure these good practices are sustained and blended with face-to-face teaching when campuses are re-opened. As the majority of staff become comfortable with technology, the role of e-learning strategies via early adopters will therefore be to ensure developments are pedagogically-, rather than technologically-led.

In conclusion, the UofG's e-learning strategy and consequent developments have encouraged early-adopters to take part in a variety of initiatives, paving the way for a quick response to the COVID-19 rapid pivot to remote teaching delivery. As we move forward, e-learning is now incorporated into the university's main strategy and use of flexible learning is becoming the norm. However, there is a risk of assuming that following the COVID-19 pandemic, all academics are now fluent with technology and willing and able to engage with further new technologies. While there is no doubt that the general IT literacy of academics has increased since the start of 2020, the university will need to continue to support early adopters of e-learning technology in order to continue to develop innovative ways to learn, teach and collaborate.

Author biographies

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Leah Marks is Senior University Lecturer in Medical Genetics and Academic Director of the MSc Genetic and Genomic Counselling. She was Co-lead on UofG's first MOOC: 'Cancer in the 21st Century', and has a particular interest in co-development of MOOCs with students as partners, as well as in using MOOCs in innovative ways in the medical undergraduate curriculum.

Samantha Fontaine is a Lecturer in the School of Veterinary Medicine. She is the Programme Director of the MSc Advanced Practice in Veterinary Nursing. This is the first fully ODL master's specifically for veterinary nurses (VNs) and the first year (PG Certificate) is accredited by the Royal College of Veterinary Surgeons.

Ronnie Young lectures in Scottish Literature at UofG, where he was part of the team that developed a suite of online and blended learning courses on Robert Burns, including the Futurelearn MOOC 'Robert Burns: Poems, Songs and Legacy'. He currently runs regular support sessions to assist colleagues in the transition to online delivery during the pandemic.

Jeremy Singer is a Senior Lecturer in the School of Computing Science at the University of Glasgow. He is Flexible Learning Lead for Science and Engineering, involved in the coordination of the institutional pivot to remote teaching due to the Covid-19 pandemic. Jeremy has co-developed two MOOCs on the FutureLearn platform, including the popular "Haskell MOOC".

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