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Early Adoption in An Agile Online Teaching Environment: An Intrapreneurial Perspective

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ABSTRACT

The Covid-19 pandemic has blown through the Higher Education sector like a Schumpterian "gale of creative destruction", accelerating the pace of change, disrupting entrenched pedagogical approaches, and revealing glimpses of the future of teaching. This study identifies how university-based early adopters responded to this 'gale', successfully implementing the rapid change required to pivot to online teaching while addressing institutional requests to support the reluctant majority. Adopting an innovative interdisciplinary framework, this study advances understanding about the criticality of early-adopter behaviour in implementing change. The triggers, dynamics and impact of early-adopter behaviours are identified, as are the resultant implications for institutions for resourcing, recognising, and rewarding early adopters. The research design is underpinned by polyphony. Theoretical aspects from entrepreneurship and networked learning are also incorporated, relating early-adopter behaviour to the entrepreneurial process in the context of virtual learning communities. This study uses vignettes from early adopters who have pivoted to online teaching in a university, identifying their experiences of instigating and supporting change. The findings highlight the facilitators of, and constraints on, early-adopter behaviour, identifying the contextual characteristics necessary to challenge preconceived institutional notions and develop intrapreneurial mindsets that more readily support and implement early-adopter behaviours.

Keywords: online learning, intrapreneurship, early adopters, community, innovation

Introduction

Covid-19 has brought unprecedented change to the higher education sector. We have seen substantial changes in the delivery of programmes and expectations from students that have placed significant demands on teaching staff. Throughout this challenging period, staff have reacted in a variety of ways from maintaining similar teaching approaches to asking if things can be done differently. The 'Creative Approaches in the Virtual Environment' (CAVE) group is more of the latter, bringing expertise from outside of the higher education sector and adopting an entrepreneurial perspective to the pandemic.

Pirates in a CAVE

In 1986, a group of scientists formed a group that came to be known as the 'Pirates' (Katz, 1993; Heracleous, Wawarta, Gonzalez & Paroutis, 2019). They pioneered new agile approaches before agility was considered elsewhere. The benefit of this self-styled 'renegade' philosophy lies in its ability to bring like-minded individuals together to effect change in an organisation. The Pirates could challenge the status quo and bring about change despite opposition, organisational politics, and inertia. In the Covid-19 Pandemic, the Creative Approaches in the Virtual Environment (CAVE) group formed at the University of Glasgow, demonstrating a 'Pirate' mindset. The five academics in this cross-disciplinary group had a similar outlook and teaching focus (despite diverse backgrounds including careers outside of the Higher Education sector), and a shared purpose to implement change to accommodate a rapid transition to online teaching for courses in progress. This required a rethink about how to deliver forthcoming courses in a more sustainable way, as the pandemic was predicted to last well into 2021. Across the University, this required a radical change in pedagogy, skills base and mind set, in a brief period. The CAVE group members collaborated during this transformation, demonstrating early-adopter behaviour in response to this institutional requirement, despite members' limited experience of online delivery. Drawing on individual experiences and support from the CAVE group, they sought ways to implement their courses, evidencing an experimental, reflective, and development-focused approach. In this article we explore the experiences of these individuals and share lessons for academic practice.

Literature

Self-initiative and entrepreneurial mindsets can contribute to the early adoption of new pedagogical ideas that can be viewed as an appropriate ad hoc response to meet intended learning outcomes (ILOs) but can be perceived as challenging the higher education institutional paradigm. These entrepreneurial actions deployed in an institutional context can be conceptualised as being "intrapreneurial", in the sense that they may be carried out without approval from a more senior member in the hierarchy, and/or may provoke bureaucratic, administrative conventions, that can be conceptualized as 'renegade' action (Heracleous et al. 2019). Furthermore, the nature of intrapreneurial action can range in a continuum from lone decision-making to multi-team-member collaborative boundary spanning that exhibit various behavioural and pedagogical intrapreneurial responses and experiences.

Entrepreneur or Intrapreneur?

The characteristics of the entrepreneur are contested and dependent on context. For this study, we use the following definition: "the pursuit of opportunity without regard to resources controlled," (Stevenson & Gumpert, 1985; Stevenson, 2006, p. 3) even when those resources are scarce. Intrapreneurship is merely an entrepreneur working within a larger system (Neessen, Caniëls, Bart & de Jong, 2019), displaying behaviours such as "innovativeness, proactiveness, risk-taking, opportunity recognition/exploitation and internal/external networking," (Neessen et al., 2019, p. 545), coupled with experience and self-efficacy (or self-belief) which can act as a multiplier of these behaviours. Stevenson (2006, p. 4) also suggests organisations move toward more entre/intrapreneurial behaviours in the face of "rapid changes" in technology (creating opportunity), "consumer economics" (such as the rise of new products or services) and "social values", where new styles of living emerge. The pandemic engendered rapid changes in all three aspects, creating what might be the perfect environment for uncovering intrapreneurial behaviours. This contrasts with administrative behaviours (Stevenson, 2006) that Craig, Amernic and Tourish (2014, p. 2), and Tourish (2011) claim have become endemic in British Business Schools, as part of a New Public Management ethos. McCarthy and Dragouni (2020, p. 2) equate this style of management to the "audit culture" (Craig et al., 2014, p. 3), borrowed from "corporate culture" which use metrics that result in "doing only what can be measured (papers, citations etc.)". Tourish (2011, p. 372) highlights the University of Queensland's "Q Index" as an example of metrification noting that it "measures an individual academic's research income, research publication (weighted by reference to journal ranking lists), higher degree completions and research degree supervision loads", but does not include other measures such as pedagogical innovation.

The Mind of the Intrapreneurial Academic

Academics are not always known for risk-taking behaviours (Lierse, 2016) but for being able to work within narrow confines to achieve the metrics mentioned above. This may be influenced by structural barriers for academics who are less likely to adopt new practices when the effect on learning cannot be quantified (Antón-Solanus et al., 2016). Within the typically conservative academic institution, cleaving to the one true path requires significant diligence and persistence, particularly in theory development and publishing in high-prestige journals (Tourish, 2019). The notion of displaying intrapreneurial behaviours in academia is thus challenging. Lierse (2016, p. 9) suggests that individuals who display such behaviours are often labelled maverick academics who can expect to remain in the margins. Rogers' (2003) Diffusion of Innovation theory provides the cornerstone for understanding the ideas of innovation and early adoption. Rogers' description of the innovation life cycle places early adopters second in the process after innovators, who are the producers of new ideas, services, or products. Early adopters play a crucial role in both diffusing new ideas into the wider society as well as providing early intelligence about the efficacy of the product or service. An important part of this is to support and nurture early adopters as Hixon et al. (2012) discuss in the establishment of a formalised mentoring programme for early adopters of online teaching.

Methodology

To capture the individual experiences of early adopters, we use the concept of polyphony, which recognises the pluralistic nature of work identity and work experiences. Polyphony affords opportunity for individuals to be heard, which lets researchers collect rich narrative accounts to illustrate vividly participants' experiences. These insights can be scrutinised to highlight relationships between participants' accounts in terms of contextual dynamics and pedagogical outcomes to draw broader thematic and conceptual understanding (Belova, 2010). The early adopters' experiences are captured in evocative individual accounts, or vignettes, of five University of Glasgow teaching staff's efforts to rapidly pivot their courses online in response to Covid-related restrictions introduced in March 2020. The profiles of the courses involved are summarised in Table 1.

Table 1: Course profiles relative to participants

Participant	**MO**	**NQ**	**PH**	**HM**	**KT**
Course level	UG, Level 1	UG, Level 3/4	PGT	PGT	PGT
Students	318	30	15	14	7
Credits	10	10	10	60	60
Duration	10 weeks	10 weeks	6 weeks	10-12 weeks	8-10 weeks
Start date	Sept 2020	Sept 2020	March 2020	March 2020 and June 2020	April 2020
Core activity	Foundational course in management	Group consultancy project with external partner	Group consultancy project with external partner	Individual project – dissertation, industry placement, or startup	Individual placement project (research and practical) with external partner
Learning and teaching methods	Large group teaching, lectures, tutorials, workshops	Workshops, external mentoring, masterclasses and client meetings	Lectures, small group discussion	Small group discussion, formative feedback tasks, mentoring, company placement	Small group discussion, 1-2-1, peer feedback presentations, mentoring, work placement
Online tools	Moodle, Zoom, Mentimeter, Padlet	Zoom, MS Teams	Moodle, Zoom, MS Teams	Moodle, Zoom, Padlet, MS Teams, Mentimeter	Zoom, MS Teams, Mahara, Padlet

Each vignette is structured systematically (Bernabeo et al., 2013) to identify key insights that allow patterns of meaning to be established. This contributes towards elements of Lincoln and Guba's trustworthiness criteria such as prolonged engagement, persistent observation, peer debriefing, and member-checking which uphold credibility; thick description for upholding transferability; and triangulation and reflexivity which uphold confirmability (Lincoln & Guba, 1986). The framework created to structure the vignettes incorporates four key areas (see Table 2) representing the participants' journey through recognising their individual situations at the onset of lockdown; their experiences of responding to the pivot request in terms of adapting their teaching methods; the learning gained; and their reflection on the experience. We then adopt thematic analysis (Braun & Clarke, 2006) to draw out conceptual understanding. Thematic analysis is viewed as an effective analysis technique of narrative accounts to identify patterns of meaning across participants' experiences (Allen, 2017).

Table 2: Framework for structuring vignettes

Topic	**Sub-topic**	**Reflection points**
1.Scene setting	1a. Context	Describe your situation in terms of course context, level of pivot, and online teaching experience.
	1b. Activity type	What activities did you have to undertake?
	1c. Novelty level	Describe what you did that was new to you, the rationale for doing this, and what facilitated it?
2.Opportunties and challenges	2a. Opportunities	What opportunities did the move to online learning provide you with?
	2b. Challenges	What were the main challenges?
3. Learning and application	3a. Learning gain	What did you learn during this process in relation to (but not limited to) yourself, your discipline, and your approach?
	3b. Dissemination	Considering your learning to date, how have you applied this, shared this, and used it to inform your future practice?
4. Early adoption	4a. Self-perception	Would you describe yourself as an early adopter and what is the rationale for this?

Findings

In this section we introduce five key themes that emerged from our analysis: pedagogy, innovation, community building, situational characteristics, and early adoption challenges.

Pedagogy

The focus on pedagogy was a consistent theme in our analysis. Pedagogy influenced early adopter behaviour in four key areas, namely decisions about course design; the choice and use of technology; the iterations required in course implementation; and in providing evidence for participants to support confident decision-making. Despite technology's dominance in online learning, pedagogy drove selection of technology platforms and how they were used:

> As time progressed, and my knowledge and experience increased, the focus was less about the mechanics of material development and learning to use the tools, and more about focusing on defining and delivering the teaching and learning outcomes. (HM)

Analysis of the vignettes indicated that participants clearly recognised the importance of pedagogy over technology, identifying the limitations of technology in trying to replicate offline lectures in an online environment:

> I, like so many colleagues, merely transposed my teaching onto Zoom. It was clunky, stilted and pretty awkward. Students wouldn't respond to questions and were isolated from each other. (NQ)

Likewise, the need for redesign of the courses was important using technology as a teaching tool: "We proposed that quickly adopting technology would afford opportunity to address the course ILOs successfully" (PH).

This new learning environment also required an iterative and adaptive approach to teaching to meet students' learning needs, for example:

> Each week I indicated what activities were required, tutorial times and so on. Although this information was also available online, it allowed us to create synchronous touch points and improve signposting for students who reported being 'lost'. The course entered a period of co-creation, working with students to make it work for both adherents and detractors of online teaching. (MO)

Pedagogical theory and reflective practice were strong factors in supporting how participants approached this unfamiliar environment. There was notable evidence in the vignettes of participants identifying how they had drawn on pedagogy to inform their activities, and the benefits that had accrued, for example:

> The establishment of the course was possible, and particularly so in the tight timescale, because of my active engagement in pedagogically based course design and redesign and experience of technology enhanced teaching. This enabled an agile approach to pivot online. (KT)

Innovation

The second theme that emerged was innovation. This was important for all participants and was inherent in their response, their approach to implementation, and their teaching delivery and outputs. A continuous drive for innovation was evident, not just about making it happen, but ensuring it would enhance the student experience and incorporate robust pedagogical underpinnings: "The experience showed the potential to develop new learning opportunities through creative approaches in teaching." (KT). There was also an inclination to view the crisis from a higher, non-technical, level, which focused on innovation in pedagogy and student experience, rather than transmitting content through a new channel:

> …we also discovered that students exploited Teams as a support mechanism to strengthen social bonds and support each other through the combined pressures of the anxiety of the pandemic and the pressures of academic work. (PH)

The participants recognised that in crisis, there was an opportunity to innovate: "Once I was operational in online teaching, there continued to be the opportunity to experiment." (HM). Innovation was associated with adaptation and problem solving. Most of the newly inducted digital students were quite unlike typical online students (see Kauffman, 2015), so new problems emerged which were equally novel to seasoned digital educators. Innovation was about solving such problems by using diverse methods and lateral thinking: "We hit upon using MS Teams as an analogue for meeting each other, not just as an alternative to synchronous sessions as with Zoom." (NQ).

Communication was at the heart of the efforts by the CAVE group to innovate and to learn from each other: "Maintaining open lines of communication throughout a project is also important" (PH). Finally, innovation let academics develop new techniques which had little to do with technology. For example, in trying to create greater engagement online, new non-technical teaching methods were embraced: "I learned that technology, of itself, adds little value. It is therefore important to use technology thoughtfully and in service to the pedagogy." (MO).

Community building

Community building was the third theme identified and evident as a driver, facilitator, and output for early adoption. Participants wanted to create communities for specific purposes, draw on communities to acquire knowledge and support with implementation, and establish lasting networks. As early adopters, we proactively built communities for specific purposes. This included creating connections with colleagues in similar situations to gain support and knowledge "by leveraging our combined experience in previous complex business management contexts to gauge an appropriate response." (PH) which helped create innovative engagement mechanisms for students, staff, and external partners. Community building as a driver was apparent across all vignettes, but more so in those that had to act immediately to tackle students' worries about a lack of tutor presence and communication: "The biggest concern from postgraduates was not having contact with the teaching team." (HM).

Community building was also used by early adopters to mobilise connections and obtain information about online teaching and pedagogy: "This [teaching team] provided an opportunity to discuss ideas, reflect on how things were going, and repurpose resources to share across courses" (HM). Such community linkages were also sought out to gain personal support with ideas, sense checking, confidence building, and reflection: "Discussions across the university with colleagues […] provided invaluable opportunities to share ideas which helped me to have the confidence to redesign the course for an online context." (KT). Such support networks are recognised as important when developing teaching practice using digital tools (Alexander et al., 2019).

Finally, the creation of a community was itself an output of the early adopters' activities. Its most tangible manifestation was the CAVE group as a formal community of practice that endured beyond the online pivot. Community building was also evident in more temporary groups formed for the course involving staff, students and external partners: "We were also able to strengthen our professional network with the placement mentors." (KT); and simpler communication channels for staff and students for the course duration that were used for course evolution and promoting student engagement: "Exploiting technological applications to institute communities of practice by creating small groups of students on MS Teams or equivalent, is viewed as important to maintain social presence." (PH).

Situational characteristics

The final theme identified from the vignettes related to the participants' personal context. All were required to act quickly. Their approach to this was what set them apart from the reluctant majority. Participants were proactive early adopters, whose response was ostensibly shaped by their experiences, personal characteristics, attitudes, and work responsibilities. All the participants had prior experience working in industry before joining the university and valued working with external partners. This experience was a strong theme in the vignettes and was used by participants to inform their approach, drawing on previous learning processes, and implementation of change:

> I had experience of managing research and consultancy projects, having worked in industry for over 20 years and then as a Research Associate. All of this meant that I was used to responding to change and dealing with uncertainty, identifying what needed to be done, and then mobilising resources to make it happen. (HM)

For some participants, early adoption was facilitated by their previous experience of working with educational technology or other relevant platforms: "I had some experience with digital delivery. Prior to my academic career I worked with a corporate education company in the Middle East dealing with hybrid delivery models on Moodle specifically." (MO).

While such experience was not evident in most of the vignettes, there was a clear desire to learn, and a proficiency with adapting to the use of new technology and techniques. This included getting help to address deficits in knowledge and other resources, and resulted in developing, discussing, and testing innovative solutions: "Having access to contacts with expertise in this area was helpful particularly around course design." (HM).

There was ongoing adoption and adaption of techniques across all vignettes. This ability to connect to inform participants' teaching was also apparent in relation to students and external stakeholders, where the feedback generated helped make the sought-after continuous improvement a reality: "None of this was without risk; we relied on student and client support from the beginning." (PH). Engagement with multiple networks from students and stakeholders, fellow early adopters and the wider teaching community allowed ideas to be re-evaluated and improved after use: "This was a great chance to work collaboratively and to learn from each other. The exchange of ideas helped to inform my pedagogy for the course as well as technical 'fixes.'" (MO).

Early adoption challenges

Participants encountered challenges due to strict time constraints, resources, a lack of technical expertise, and general anxiety concerning the pandemic. Time constraints and workload pressures meant there was a limited opportunity to plan and develop materials systematically given a lack of technical expertise. This created significant pressure: "I had a month to work with colleagues to pivot the course to run remotely. The development of an online course in a short time was…a challenge." (KT) and: "We had no time to prepare as hitherto the University had not signalled that the campus was likely to close, so we had not created contingency plans" (PH). Administrative constraints could not always be removed, and the reluctance of other staff members was often overtaken by the necessity to teach online. Resource, time, and workload issues were more intractable, requiring innovation and consistent and sustained effort.

Discussion

The five themes identified are further considered in the context of early adoption triggers, dynamics, and impacts, to enable analysis and identification of the implications for practice and Higher Education institutions.

Triggers

The participants responded to the Covid "disruptive gale" and initiated early adoption behaviours and rapid diffusion of both technology and pedagogy. The crisis created an opportunity to innovate, which suited intrapreneurial behaviour by removing some administrative constraints (Stevenson, 2006; Lierse, 2016). Early adopters could rapidly shift from small projects to larger ventures across a wide number of courses, directly building them or assisting colleagues to do so. Although innovative behaviour is triggered by external events (the crisis itself), the early adoption inclination is the trigger for wider innovation. We suggested that early adopters are comfortable working in the margins especially due to the reluctance of other academics to adopt online learning (Hixon et al., 2012), but early adopters did not always have experience of online technology. The desire to embrace change and deliver a high-quality, evidence-based learning experience drove participants to overcome resource gaps, and make change happen irrespective of institutional context. In the CAVE group, participants could discuss, experiment, and make mistakes (Shankar & Clausen, 2020) together, which in turn facilitated more widely applied early adoption practices to online learning.

Dynamics and Impacts

The characteristics and experiences of early adopters, combined with common purpose of the CAVE group, generated a beneficial dynamic at individual, group and institutional levels. Organisational preparedness (Adekola, Dale & Gardiner, 2017) was apparent at an individual level in the early adopters' activities (community, collaboration, commitment, competence) irrespective of its presence at organisation level. The focus on pedagogically informed teaching and reflective practice, supported by the experience of early adopters within and outside of the university sector, gave early adopters increased confidence to pivot online to develop effective online courses. A robust evidence base enabled adaptability, using digital literacy skills and a willingness to learn new capabilities and learn from others. This reflects the experience of others transitioning to online teaching and, while this often reflects the novice teacher approach (Englund, Olofsson & Price, 2017), it also reflects the experience of the group. There was an element of risk in these rapid adaptions. This was managed in several ways including a pedagogically informed approach and reflective practice including the use of reflective logs/journals during teaching in recognition of the value in informing practice (e.g., Boettcher & Conrad, 2016; Nordmann et al., 2020).

Learning outcomes, not the technology or the resources, were acknowledged by early adopters as the essential driver in course design, which is recognised in good pedagogical design whether online or in person (Biggs & Tang, 2007). The technology was perceived to facilitate teaching and learning, reflecting Torrisi and Davis's (2000, p.175) description of "Conceptualizing online materials development is a process based on a continuum of transformation of practice rather than translation of lecture content to another medium." The teachers learning by doing alongside the co-creation with students enabled students' learning needs to be more effectively met whilst creating a shared learning environment (Boettcher & Conrad 2016, p.56). This reflects the role of social and teacher presence in supporting and fostering cognitive presence in an online learning environment as represented in Garrison, Anderson and Archer's (2001) "Community of Inquiry", as well as the role of co-creation (Bovill, Morss & Bulley, 2009). Increased use of synchronous teaching, asynchronous learning, and signposting was introduced in courses as it was more effective (for example, Boettcher & Conrad, 2016; Nordmann et al., 2020). This process was iterative and adaptive corresponding with elements of early adoption theory to explore, learn, test, and grasp the benefits of implementing new ideas and practice (Rogers, 2003).

The CAVE group was an important part of the dynamics of early adoption. CAVE incorporated a lean start-up (Ries, 2011) mentality and community of practice which allowed members to "fail fast" (Shankar & Clausen, 2020). "Fail fast" approaches use rapid experimentation to maximise learning during the low-stakes stage of any project (Ibid). Like entrepreneurs we were identifying gaps in support that students and colleagues faced and undertaking delivery of solutions. We adopted and tested innovative solutions and had the support of others to build, measure and learn (Ries, 2011). We also adopted the Pirates' 'renegade' methodology, trying novel approaches even if these challenged norms. This, and Covid-19, let us use entrepreneurial approaches and "fail fast", where this would not normally be possible. Failure as strategy seems at odds with academic culture, but a low-stakes experimental approach coupled with rapid learning was appropriate to the situation.The impacts of early adopter behaviours were evident in the successful delivery of diverse online courses characterised by positive student experience and strong academic performance. The CAVE community itself became the product of early adopter behaviour in a virtuous spiral of an ever-widening network. The community grew and became more diverse as early adopters shared ideas with other networks of academics, professionals, students, and practitioners. This community of inquiry (Garrison, Anderson & Archer. 2010) helped shift attitudes and knowledge of online learning. It helped participants consider future learning strategies, encouraged experimentation, shared learning widely through scholarship and established itself as a long-lasting network with aims to continue beyond the pandemic. Early adopters disseminated their knowledge not only to each other but to other colleagues within the institution.

Challenges

The challenges early adopters faced provided an opportunity rather than a constraint. Participants could demonstrate early-adopter behaviours by collaborating across departmental boundaries to learn how to use various technological applications and new pedagogical approaches. This echoes the work of Hixon et al (2012) about advantages of early adopter behaviours in a pedagogical environment. It also connects with the work of Badoiu, Segarra-Ciprés and Escrig-Tena (2020), and Boon, Van der Klink and Janssen (2013), illustrating the positive impact of intrapreneurial behaviours in undertaking innovative practice to tackle organizational projects more effectively. Nevertheless, caution is warranted particularly in a higher-education institutional context characterised by deep-seated bureaucratic and pedagogical traditions (Lawrence, Suddaby & Leca, 2011) that produce cautious and complacent behaviours. This corresponds with the challenge of tackling reluctance from sceptical colleagues which was experienced by the early adopters (Hixon et al., 2012), that was often overtaken by the necessity to pivot online quickly. Time pressures and a lack of institutional resource for technology or specialised learning technology experts were also experienced that required more sustained effort to address.

Conclusion

Early adopter behaviour was triggered by a desire to find good teaching solutions when faced with the rapid pivot online. The crisis afforded the opportunity to build an intrapreneurial interdisciplinary network, boosting confidence with the knowledge that there was an early adopter community. The opportunities offered by necessity, and the support of the community of practice (Garrison et al., 2010) triggered growing confidence and evidenced early adoption, experimentation, and intrapreneurship. Establishing these connections to improve pedagogy by harnessing technology, echoes the concept of Networked Learning (Katz & Earl, 2010) where participants form virtual bonds to develop a discrete community to tackle education projects. This echoes our experience working in CAVE whereby we collaborated virtually with some members having not met previously.

Our study is a reflection on the experiences of a group of like-minded academics. We accept, therefore, that the narrative cannot avoid bias. As second career academics we characterise ourselves as drawing from both practical and intellectual backgrounds allowing us to critically explore both traditions. However, we recognise it is simplistic to categorise ourselves as innovators, or other academics as conservatives. While we have used our vignettes systematically and empirically, we also point out that we have not collected data or applied a deep systematic qualitative or quantitative analysis. Our first-hand narrative is intended to explore key aspects of innovation and crisis response in an academic environment from the point of view of early adopters. The themes explored here would benefit from further systematic research.

Our experience will certainly reflect those of many colleagues impacted by the need to pivot teaching online in response to the pandemic that involved challenging established rules and norms. Through an intrapreneurial approach to teaching and the creation of Networked Communities of Practice, these examples of early adopter behaviour helped to exchange ideas on how to improve online teaching approaches (Li et al., 2009; Katz & Earl, 2010). The individual early adopters' collaboration with like-minded people seeking change meant that the group itself became an early adopter and a trigger, influencer, and product of the transition to online learning. The environment created opportunities to explore innovative ideas informed by evidence-based practice, and where the potential for 'failure' was an acceptable risk. Continuing to foster such creative environments, where university structures allow for innovative and maverick activities, should be maintained even when we return to a more normal teaching context.

Practical implications and recommendations

Encouraging intrapreneurship in HE institutions can be beneficial in supporting change. We recommend that colleagues take action to learn new skills and reach out across institutional boundaries to exchange ideas, knowledge, and experience to develop new teaching practice. This can create an agile pedagogical ecosystem that connects various people and departments that hitherto had not collaborated regularly or had not collaborated at all. A potential, positive consequence of this arrangement is the possibility of richer scholarship output and dissemination of innovative learning ideas that are informed by cross-disciplinary knowledge.

We suggest that HE institutions can support staff transitioning to online teaching by focusing on pedagogy. It is recommended that senior management encourage colleagues to take initiative and reach out across institutional boundaries to improve teaching practice. Senior management should consider regular communication of examples of successful collaboration to emphasise positive outcomes. Investment in appropriate support in terms of providing access to suitable technology, training, mentoring, and shadowing is recommended.

Biographies

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