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Embracing distance education in a blended learning model: challenges and prospects

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ABSTRACT

Distance education reaches out to non-traditional students in geographically dispersed locations, who are unable to attend face-to-face classes. Contact institutions have been quick to realise the many advantages of distance (online) learning, such as easy access to learning materials, interactive activities, assessment and communication tools. However, the path to anything approaching dual-mode provision has not been without obstacles. In South Africa in the early 2000s, the Council on Higher Education reinforced the mandate of distance education universities and decreed that contact institutions should not encroach on this territory. Subsequently, various frameworks and guidelines emerged which can inform current consideration of dual-mode provision. This practitioner report presents two case studies (University of Pretoria, South Africa; and University of Oxford, United Kingdom) which explore the implications for contact institutions in expanding their provision to include distance education.

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Introduction

This article considers various models of learning, particularly combinations of face-to-face offerings (contact education), and distributed scenarios (distance education). I investigate the affordances of various learning technologies for two traditional contact education providers in embracing opportunities offered by distance education modes.

I make use of the interpretive paradigm (Cohen, Manion, & Morrison, 2000) to consider and report my subjective experiences, informed by a collection of conceptual frameworks that situate technology-enhanced learning in higher education. I draw on my own earlier and ongoing work, some of it individual, and some in collaboration with peers. I employ a comparative case study method that reflects my personal experiences – firstly at a large, modern, centrally managed university (University of Pretoria, South Africa) in the early 2000s, and at a traditional, research-intensive federated university (University of Oxford, England) since 2009. This article is designed as a practitioner report, rather than a formal research study.

The two case studies explore the implications for contact institutions in expanding their provision to include distance education and by implication, increased use of learning technologies.¹ Referring to other sources, the call for papers for this special edition states that:

Such a decision will necessarily call for the revisiting of an institution's assumptions about how people learn, how staff should work, how resources should be allocated and what policy changes are needed if quality is to be maintained or enhanced and the offerings sustainable. (T. Mays, M. Combrinck, & F. R. Aluko, personal communication, July 28, 2017)

The above quotation neatly and succinctly summarises the findings reflected in the two case studies presented here, particularly the emphasis on resourcing, quality and sustainability.

Distance education

Distance education, by its very nature, reaches out to so-called 'non-traditional' students in geographically dispersed locations, with employment and family responsibilities, who are unable to attend classes in face-to-face institutions. In recent years, the advent of the Internet in general, and online learning tools in particular (e.g., learning management systems, mobile learning, social media and MOOCs) has fundamentally changed the face of distance education (Cleveland-Innes & Garrison, 2010). Contact institutions have been quick to realise the many advantages of online learning, such as easy access to learning materials (interactive activities, tests, assignments, student-created content), and communication tools (discussion forums, chat rooms, social media tools) (Anderson & Elloumi, 2004).

This journal issue addresses some aspects of the debate regarding the blurring of boundaries between providers of contact and distance education, as a result of the affordances of learning technologies. I agree with Glennie and Mays (2013) that the notion of *distance education* remains relevant today, since 'distance education is premised on a very diverse and geographically distributed study body, a high level of independent learning and decentralised support for students who may never attend the central campus' (p. 131).

Technology-enhanced learning

For the purposes of this article, I assume similarity in meaning of the following terms: online learning, e-learning, web-supported learning and technology-enhanced learning (TEL). Although I may use some or all these terms synonymously, my preferred term is TEL. Kirkwood and Price (2014, p. 6) describe TEL as follows:

In education it is often taken for granted that technologies can 'enhance learning' and the term 'Technology Enhanced Learning' (TEL) is increasingly being used in the UK, Europe and other parts of the world. Referring to the application of information and communication technologies to teaching and learning, TEL subsumes the older term 'e-Learning', which was used with a confusing variety of meanings (Guri-Rosenblit and Gros 2011).

Kirkwood and Price (2014) investigated the purpose and design of various technology interventions, how enhancement is conceptualised, and the ways in which evidence of enhancement is presented. (These ideas are beyond the scope of this article.)

A collection of conceptual frameworks

This section presents a collection of teaching and learning frameworks from the literature in order to inform our thinking about using learning technologies in both contact education and distance education. I make a plea here not to forget well-established guidelines and

frameworks concerning good practice guidelines for using TEL, levels of TEL and blended learning, all of which might inform our thinking about the nexus between contact education and distance education and the possible evolution of what might become known as dual providers.

Good practice guidelines for utilising TEL

The overarching nature of TEL implies that various technologies can be used to enhance learning and the learning experience, both in the classroom (see Pickering, 2015) and for students studying at a distance; as well as for different levels of study. In the late 1980s, Chickering and Gamson (1987, p. 4) formulated *Seven principles for good practice in undergraduate education* – seven key critical aspects for improving student learning and the learning experience. They are:

- (1) Encourages contact between students and faculty.
- (2) Develops reciprocity and cooperation among students.
- (3) Uses active learning techniques.
- (4) Gives prompt feedback.
- (5) Emphasises time on task.
- (6) Communicates high expectations.
- (7) Respects diverse talents and ways of learning.

Not only are the above guidelines good recommendations in themselves, but Chickering and Gamson (1987, p. 8) claim that, when utilised together, they support the following six powerful forces in education:

- activity
- expectations
- cooperation
- interaction
- diversity
- responsibility.

These forces remain desirable in higher education today, for both contact and distance modes. After the publication of Chickering and Gamson's (1987) seven principles, and with the advent of electronic learning technologies in higher education, Chickering and Ehrmann (1996) stated, 'If the power of the new technologies is to be fully realised, they should be employed in ways consistent with the Seven Principles' (p. 3). They provided examples of how learning technologies could be utilised to operationalise the seven principles, including those that enable synchronous and asynchronous communication; facilitate collaborative learning and group problem solving; facilitate apprentice-type learning and field trips; enable prompt feedback (including video and audio feedback); and encourage high expectations, such as student-generated content being published on the Internet (e.g., blogs).

Levels of TEL

Bonk, Cummings, Hara, Fischler, and Lee (2000) describe *A ten-level web integration continuum for higher education* – a continuum of the pedagogical choices that faculty need to consider

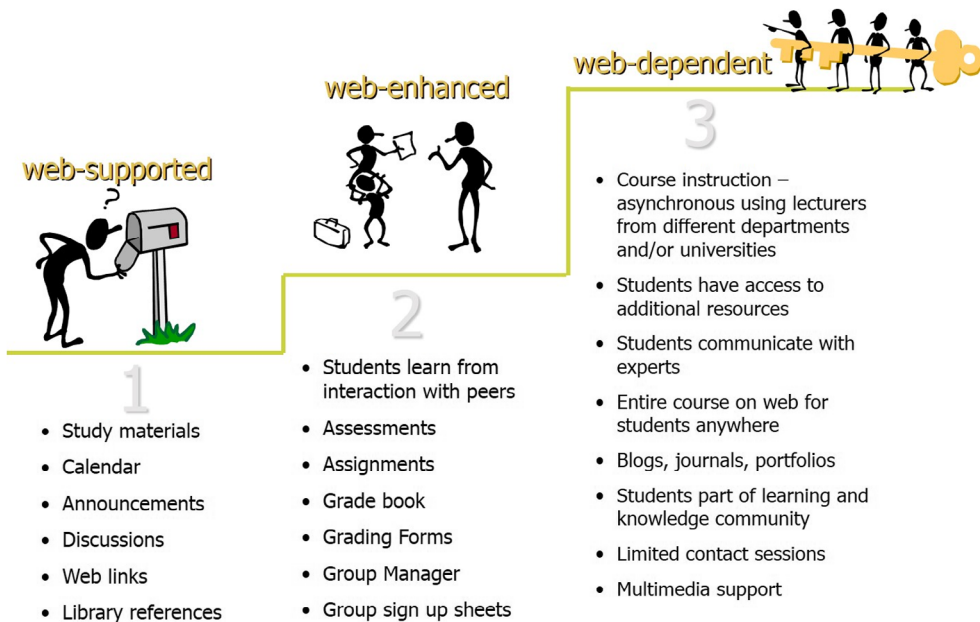


Figure 1. Three levels of technology-enhanced learning (developed by Fresen [2006]; adapted from the ten levels of Bonk et al. [2000, pp. 56–77]).

in developing web-based course components. Fresen (2006) adapted and simplified the ten levels to three levels²: web-supported, web-enhanced and web-dependent (Figure 1).

The three levels indicate three most common ways of using an online platform to enhance and support student learning. Level 1 (web-supported learning) reflects the very common use of an online platform as a repository (or post box) to provide information and study materials to students. Level 2 (web-enhanced learning) extends the use of the platform to include interaction, assessment and collaboration opportunities. Level 3 (web-dependent) shows more extensive use of and reliance on the online platform, with the entire course available online for students in any location. Interestingly, the Council on Higher Education (Council on Higher Education, 2014) synthesises similar levels, calling them *internet-supported programmes*, *internet-dependent programmes*, and *fully online programmes* (p. 10); that report states that ‘a mix of some online and some offline modes is termed a “blend”’ (p. 11).

Blended learning

As far back as 2006, Moore (2006) wrote the following about the notion of *blended learning*:

The emerging view is of a mutually respectful relationship between teaching at a distance and teaching in the classroom, and the idea that ‘each can do its proper work’ is now encapsulated in the concept of blended learning. Like distance education itself, under whatever name one prefers to call it, blended learning is a long-neglected idea whose time has arrived. Importantly, growing numbers of educators and influential policymakers are discovering not only the advantages but

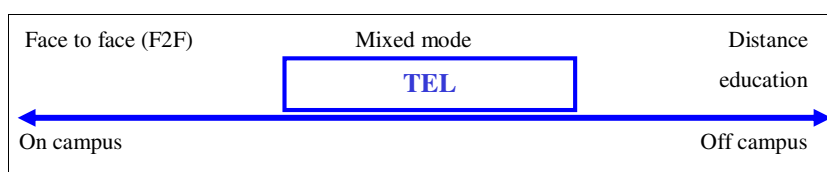


Figure 2. Blended learning continuum, enabled by TEL (adapted from Council on Higher Education [2014, p. 11]).

also the lack of threat in combining the advantages of teaching and learning in the two different environments: classroom and home or workplace. (pp. xxiii–xxiv)

The above quotation nicely encapsulates what I believe to be the desirable philosophy to pursue, namely using the face-to-face and distance environments for what each does best, blending them together in a complementary way to design and deliver effective and satisfactory learning experiences for students.

Blended learning is often shown on a continuum, with the pure face-to-face (campus-based) mode at one extreme and pure distance education at the other (Council on Higher Education, 2014). The combination of various aspects of the two extremes is what yields the blend, which is located somewhere along the continuum. The Council on Higher Education (2014) report notes that ‘With the increasing use of supporting educational technologies there is likely to be rapid movement to the centre’ (p. 10) (Figure 2). I take the statement by the Council on Higher Education (2014) further by claiming that TEL is precisely the mechanism that enables the blend and the move towards the centre.

This section has presented various frameworks incorporating aspects of TEL, namely good practice guidelines, levels of TEL and the blended learning continuum. The next section presents two cases studies at contact institutions, which demonstrate that it is possible for extremely traditional contact institutions to introduce aspects of dual provision, although these attempts have not been without their challenges.

Case study 1: University of Pretoria, South Africa

The three levels synthesised by Fresen (2006) (Figure 1) have been in use since 2007 at the University of Pretoria to structure the implementation of TEL and academic staff training in the use of a learning management system (LMS). Untiedt (2014) audited and categorised all University of Pretoria courses presented in the LMS according to the three levels and found that the majority of courses across the university ‘were operating at the web-supported level (mainly providing information to students) with little interaction. About 14% were web-enhanced courses that embraced some of the interactive features like online assessments or assignments’ (p. 13). These findings are not surprising for an institution that is primarily a contact institution, with few courses offered purely at a distance.³

Quality of TEL

While working as an instructional designer and project manager at the University of Pretoria, I investigated factors that enhance the quality of blended courses, and how standard quality assurance theory might be applied to the instructional design process for TEL (referred to

as 'web-supported learning') (Fresen, 2005b, 2007).⁴ I proposed a taxonomy of critical success factors to promote quality web-supported learning, categorised as follows:

- (1) Institutional factors (e.g., technology strategy, student entry into courses, programme evaluation)
- (2) Technology factors (e.g., reliability, availability, accessibility, support)
- (3) Lecturer factors (e.g., interaction, provision of feedback, professional development)
- (4) Student factors (e.g., time management, self-directed learning, communication)
- (5) Instructional design factors (e.g., layout and presentation, use of media, learning principles)
- (6) Pedagogical factors (e.g., learning outcomes, assessment strategies, self-reflection).

My study concluded that:

The web medium offers increased convenience and alternative methods of communication and assessment. There are changing roles for both lecturers and students in learning how to make optimum use of electronic media in order to enhance the learning process. Issues such as change management, accessibility, learner-centered environments and technology access and reliability have an impact on the quality of web-supported learning products. (Fresen, 2007, p. 360)

Clearly, in the process of convergence of modes of provision (and by implication – increasing TEL prospects and challenges), institutions need to consider the above factors, in addition to broader institutional issues, such as policy, costs, student access and retention, resourcing, monitoring and reporting.

NADEOSA quality criteria

In 2005, the National Association of Distance Education and Open Learning in South Africa (NADEOSA) worked with the South African Institute of Distance Education to develop *Quality criteria for distance education in South Africa* (National Association of Distance Education & Open Learning in South Africa, 2005). The 13 categories of criteria are listed in Appendix 1.

I applied the NADEOSA quality criteria as part of a self-evaluation exercise in the e-learning unit of the Department of Telematic Learning and Education Innovation⁵ at the University of Pretoria (Fresen, 2005a). The goal of the self-evaluation exercise was to encourage reflective practice in academics and support staff and to improve the online teaching and learning experience for academics and students. The exercise found that 'online communication and interaction were recognised as providing benefits in the teaching and learning situation, but organizational and administrative advantages are more practical and quicker to achieve' (Fresen, 2005a, p. 190).

The NADEOSA criteria remain relevant more than ten years later and could be applied more broadly in the field of TEL in higher education. Any institution which is planning to move towards dual-mode provision will do well to consider and address the NADEOSA quality criteria (Appendix 1) in their own context.

An integrated management approach

The application of the NADEOSA quality criteria at the University of Pretoria formed part of a comprehensive effort to design and implement a formal quality management system for e-learning, backgrounded by an ISO 9000 approach to quality assurance (Fresen, 2005b). In

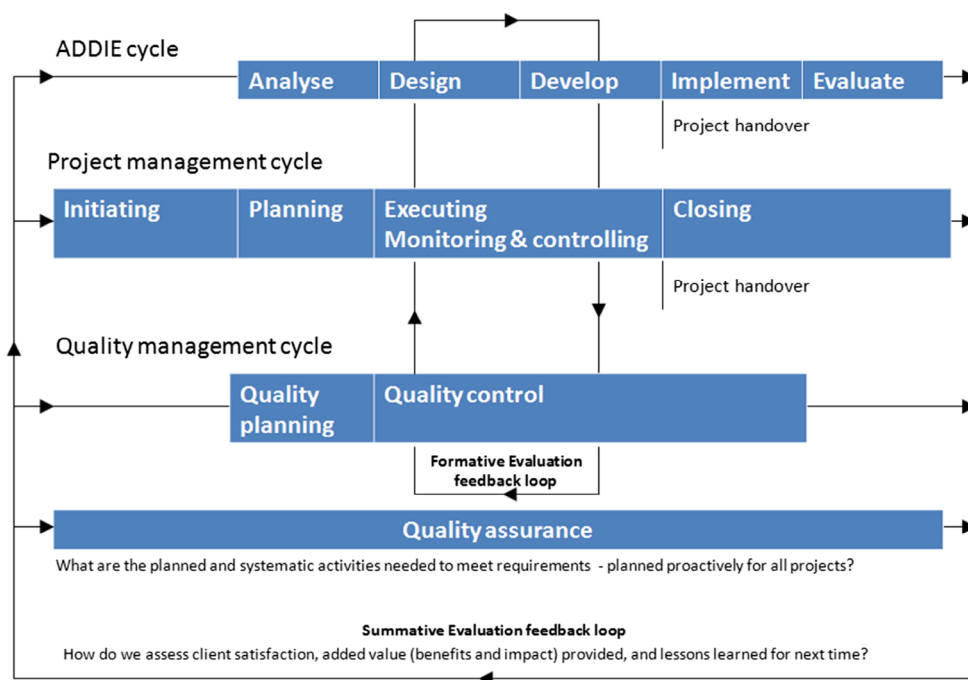


Figure 3. Relationship between the ADDIE instructional design process, project management, and quality management during the project lifecycle (Boyd & Fresen, 2013, p. 225).

later reflective work, Boyd and Fresen (2013, p. 206) synthesised various frameworks that usually overlap invisibly when designing, managing and quality assuring TEL projects (Figure 3):

[We] describe the implementation of a formal, online, process-based Quality Management System (QMS) in response to management challenges of communication, resourcing, measuring client satisfaction, and accountability. The application of a systems and process approach is illustrated, in order to self evaluate, document, and improve the instructional design process. A consensus-driven, mutually owned system was produced which addressed the complex web of interrelationships and responsibilities inherent in the development of educational technology solutions. The system provided a mechanism to support a consistent project management approach, and the case illustrates successful integration between three cycles: Project Management (PM), Quality Management (QM), and the ADDIE instructional design process.

The ADDIE model (Smith & Ragan, 1999) was already in place to direct the instructional design process in the TEL unit at the university, as were informal project management practices. Figure 3 shows how the ADDIE Analyse stage overlaps with the PM and QM planning stages; the Design and Develop stages map to the executing, controlling, monitoring and quality control stages (in the form of a Formative Evaluation feedback loop); the Implement stage maps to the closing stage of a project; while the Evaluate stage maps neatly to the ongoing quality assurance process (in the form of a Summative Evaluation feedback loop) to inform future improvements.

Conclusion to the University of Pretoria case study

The work done by the TEL unit at the University of Pretoria shows how distance education experts, instructional designers, project managers and quality assurance consultants can work together according to an integrated framework, with the goal of improving the effectiveness and consistency of TEL for staff and students alike. It would be valuable for contact institutions to consider such methods of working from the start to inform any expansion of provision into the distance education space.

Case study 2: University of Oxford, UK

Introduction

'Until recently, the world-renowned and traditional Oxford University in the UK had offered very few fully distance courses [– mostly only] short courses located in the Department for Continuing Education (ContEd), or professional development courses that 'usually require a significant amount of face-to-face contact time, in the form of *Oxford weeks*. The university's centralised LMS (branded WebLearn) is used to support students studying in the traditional face-to-face model, as well as those studying through ContEd (Fresen & Laurent, 2016, p. 10).

Oxford University launched a Digital Education Strategy in 2016 (University of Oxford, 2016) which aims to realise 'expressed aspirations for a more technology-enhanced approach to teaching' (p. 2). The university already 'makes accessible a huge range of open education resources (OERs) in the form of audio and video recordings and teaching resources for schools' (p. 15). (Fresen & Laurent, 2016, p. 10)

The Digital Education Strategy is being operationalised to introduce formal distance programmes of study (case study 2A), as well as a first foray into designing and presenting a massive open online course (MOOC) (case study 2B).

University of Oxford teaching and learning model

'As is well known, the teaching and learning model at Oxford University is traditional and extremely individualised,' due to relatively small, manageable student numbers. 'Undergraduate students are under the care and mentorship of a tutor throughout their degree'. Tutors at Oxford University are experienced scholars in their field, who provide weekly support and consultation to their mentees, in small groups. 'Oxford students are expected to be independent, self-directed learners and to take responsibility for their own studies'. 'Students need to take advantage of all opportunities, advice and materials available to them, and craft an independent pathway through their studies' (Fresen & Laurent, 2016, p. 11). Clearly this context is unique, considering large, centralised modern universities and rapidly increasing student numbers in other contexts.

Case study 2A: Oxford online programme in sleep medicine

'For most professionals and lifelong learners, the principal obstacles to pursuing additional qualifications are constraints of time and location' (Fresen & Laurent, 2016, p. 12). In the field

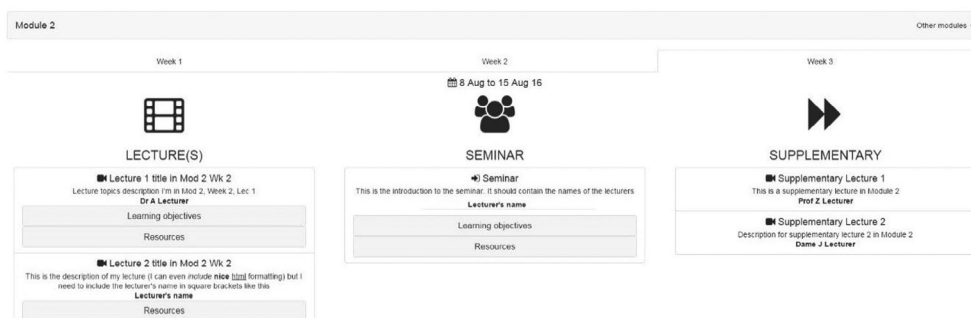


Figure 4. Screenshot of the modified LMS interface, reflecting some degree of personalisation (Fresen & Laurent, 2016, p. 14).

of Sleep Medicine teaching at Oxford, it was clear that an online programme would permit flexibility to set aside time for personal study when convenient. According to Roe (2010) (cited in Fresen & Laurent, 2016, p. 12), 'New technologies especially in rich multimedia and asynchronous communication methods allow for increased learning opportunities'. The course design team wished to leverage the usual benefits of distance education to enable busy working adults to pursue an Oxford qualification, using modern learning technologies and methods.

The aim of this project was to design an online, distance learner experience that mirrors the Oxford face-to-face experience as closely as possible, for the Oxford Online Programme in Sleep Medicine (OPSM), launched in 2016.

The programme is hosted by the Sleep and Circadian Neuroscience Institute; it 'brings together world leading expertise in basic and human sleep and circadian research and in the evaluation and management of sleep disorders' (Nuffield Department of Clinical Neurosciences, 2016). (Fresen & Laurent, 2016, p. 12)

TEL teams within the university worked closely with the departmental course team throughout the process of planning the programme, writing the business plan, gaining central university approval, and implementing technologies such as the institutional LMS (WebLearn), the lecture capture system (Replay), and a web-conferencing tool (Zoom – <https://www.zoom.us>). The personalised Oxford learning experience has been imitated through small student numbers, pre-recorded video lectures presented by a group of specialist academics from Oxford, moderated online discussions, live webinars and collaboration with subject specialists to reflect the most recent research findings.

Challenges and prospects

- (1) 'A challenge was to organise the logistics of the programme without prior experience in offering distance learning courses online. For example, time and effort were required to identify the best technologies and skills to conduct synchronous sessions for students in extreme time zones.' (Fresen & Laurent, 2016, p. 13).
- (2) 'The design team was particularly keen to employ aspects of personalisation, e.g., showing students only material that is relevant to them, at the appropriate time (depending on the current module, week etc.)' (Fresen & Laurent, 2016, p. 13). 'Not surprisingly, the institutional LMS is not designed as an environment to present fully

online, personalised, adaptive content⁶ (Fresen & Laurent, 2016, p. 13). Additional programming expertise (using the Angular 2 framework) was required to surface content in the online course in a more sophisticated, responsive front end (Figure 4).

- (3) The Lessons tool in WebLearn offers the pedagogical advantage of tailoring an online learning pathway for students, with integrated content, relevant activities and assessment opportunities (Laurent, Burholt, Fresen, & Geng, 2016). However, additional programming work⁷ was required to embed the interactive version of a particular recorded lecture within the relevant learning pathway (as opposed to sending the student to a folder containing all recorded lectures).
- (4) The optimum length for recorded lectures in an online course is three to six minutes (Guo, Kim, & Rubin, 2014). However, lecturers on the OPSM decided that they prefer to record a 1-hour lecture, and if they want the students to pause it and participate in an activity, they say: 'Now pause the recording and do an activity, then return here later' (Fresen & Laurent, 2016, p. 15). Clearly it would be preferable to design learning materials in manageable sections, integrated with learning activities, where appropriate.
- (5) The university's academic boards were not willing to allow the online submission of summative work at a distance, for reasons of information and identity security. The OPSM elected to offer eight extended essays and to require the students to present themselves for one-week of contact time during the two-year programme.
- (6) One newly-appointed academic who teaches the research methods modules is exploring more interactive ways of teaching, for example, peer assessment, social media, student-generated content (student pages), and interactive simulations.

Case study 2B: Oxford's first MOOC

Oxford University did not immediately embrace the possibilities of MOOCs. This allowed time to see how MOOCs would evolve in practice, in the light of their evident low student completion rates (Onah, Sinclair, & Boyatt, 2014). During mid-2016 the Blavatnik School of Government (<https://www.bsg.ox.ac.uk>) at the university expressed the desire to design and run a MOOC, which the university approved and announced in November 2016 (Coughlan, 2016). The MOOC was entitled *From Poverty to Prosperity: Understanding economic development* and was led by Professor Sir Paul Collier of the Blavatnik School of Government.

The school funded the design, development and support of the MOOC. Due to lack of time and resources, the university's central TEL team was not able to produce the videos and design the online learning units, but acted as consultants instead. The design and development of the course was contracted out to a third-party company, with experience in delivering MOOCs using the edX platform. The content was based on lecture-style videos interspersed with on-screen graphics. Assessment consisted of some individual 'Think!' activities (ungraded), graded discussions, multiple-choice quizzes and an optional, peer-assessed final essay for those opting to purchase a certificate. The first MOOC ran from February to April 2017; there were 47,299 total enrolments by the end of the course, and 2,115 participants successfully achieved the assessment criteria (University of Oxford, 2017). A second offering of the MOOC took place from October to November 2017, with an added synchronous online meeting with the professor.

Challenges and prospects

- (1) As is the case with many projects, tensions had to be managed between time, cost and quality priorities (Geng, Fresen, & Burholt, 2017). Any of these factors can be compromised by limitations in one or both of the others.
- (2) Under the prevailing resource constraints, it was quickest to produce one-camera, lecture-style videos⁸; however, shooting and inserting additional relevant footage, or other video modes (such as interviews with experts) would contribute to a more varied learning experience.
- (3) Depending on available resources, additional forms of content and a variety of media would be advisable, again to promote student engagement and the achievement of learning outcomes, for example, simulations, animations, existing open educational resources, drag-and-drop activities.
- (4) It requires careful thought and subject expertise to design questions (with constructive feedback) at an acceptable cognitive level to test student learning at the end of each unit (e.g., according to Bloom's taxonomy of the cognitive domain) (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956). Time should be planned and agreed for this activity.
- (5) It is essential from the quality perspective to carefully proofread transcripts of videos, graphics on slides, and on-screen text – again, this requires time and human resources dedicated to the task.

In reflecting on the experience of supporting the design and development of a MOOC (especially for the first time), the central TEL team produced a set of guidelines (Geng et al., 2017), which were submitted to the university's MOOC Advisory Group for consideration.

Conclusion to the Oxford case studies

The small group tutorial system – for which the University of Oxford is renowned – posed a challenge in designing and delivering fully distance courses in the form of a credit-bearing distance course and Oxford's first MOOC. Findings show that close collaboration between learning technologists in the central university TEL team, and course teams in the academic departments is essential (Laurent et al., 2016). Experienced learning technologists with the right balance of skills and instructional design experience are required. Additional design and support resources may need to be recruited to build and maintain online content. Programming expertise may be necessary, including writing code for online simulations and to personalise the learning experience.

Time needs to be spent with the academic department or school to identify their needs and requirements, after which the design team should build one or more prototype course areas in the online platform. Roles and responsibilities need to be clearly defined (see Appendix 2), including the need for the academic department to take ownership of the content (text elements, videos, graphics and assessment activities) and test it carefully during the prototyping phase, prior to the launch of the course.

Conclusion

This article claims that it is the central role played, and affordances offered by learning technologies that enables the blend in the continuum between contact education and distance education. I have reflected on various levels of TEL and factors to consider in producing quality online learning programmes. Two case studies were presented: the University of Pretoria (South Africa) – a large, modern, centrally managed university; and the University of Oxford (England) – a traditional, research-intensive, federated university.

Interestingly, my experiences as a learning technologist and project manager at the two institutions have been similar, without exhibiting any differences of a North-South nature (that might have been anticipated). The levels of TEL (Figure 1) were considered, adapted where necessary, and applied at both institutions, as were instructional design processes. Key findings in both institutions highlighted the need for consistency in the student learning experience, and the importance of change management, learner-centred environments, and reliability and suitability of selected learning technologies. The experience of TEL teams and course teams working together was beneficial at the University of Pretoria and in both of the University of Oxford cases. The more systematic application of internal project management and quality assurance systems at the University of Pretoria yielded results to be emulated. Due to extreme time constraints and lack of internal resources, the design and development of the University of Oxford MOOC had to be outsourced – this was not an optimal solution, notwithstanding the ultimate success of the MOOC. A University of Oxford institutional strategy on the provision of MOOCs is currently under discussion.

Contact education providers should take the following imperatives into account when planning to expand their provision to include fully online courses and MOOCs: institutional strategies and processes are carefully formulated; strategic funding is allocated; time and expertise are made available; quality criteria are adhered to; and the needs and expectations of academics and potential students are addressed.

Notes

1. Note the phrase 'expanding their provision' – the institutions concerned are not necessarily considering moving to become dual-mode providers.
2. The elements represented in these three levels are not intended to be exhaustive or a unique representation – they simply convey the idea of extending the use of an online platform in various ways. The levels are also not intended to imply that more is better – each level may be suitable and desirable in its own right, for different learning contexts.
3. Note that these figures do not include those courses offered by the – primarily paper-based – Distance Education Unit at the University of Pretoria.
4. Those studies did not consider quality issues pertaining to cost, student access to study programmes, retention or success rates.
5. That department later changed its name to the Department for Education Innovation. For ease of reference it is referred to hereafter by the more generic name 'TEL unit'.
6. So-called next generation digital learning environments (NGDLEs) offer the potential to capture these possibilities in the form of a slimmed-down LMS as part of a flexible learning ecosystem (Brown, Dehoney, & Millichap, 2015).
7. This was a constraint of the particular institutional LMS in use, and would not necessarily be a problem in other LMS platforms.
8. Student feedback showed that the lecture-style video is at least preferable to a talking head: 'Each week included video lectures, delivered to an unseen/unheard class (maybe; it might

have just been production crew or even an empty room, but it was convincing and served the purpose) rather than read-to-camera, a technique more mooc (*sic*) teams should consider' (Carlson, 2017, p. 5).

Disclosure statement

No potential conflict of interest was reported by the author.

Notes on contributor

Jill W. Fresen started her career as a Mathematics teacher and lecturer, and then spent some time working as a computer programmer. From 2000 to 2009 Jill worked as a Project Manager in the Department for Education Innovation at the University of Pretoria, South Africa. She is now a Senior Learning Technologist in the Technology-Enhanced Learning (TEL) team at the University of Oxford, England.

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Appendix 1. NADEOSA quality criteria (Welch & Reed, 2005, pp. 18–43)

In the current set of NADEOSA Quality Criteria, there are thirteen criteria with 212 individual elements. Doubtless, if more minds were applied to the process, a further 100 or so could be added. A second difficulty is that stating the criteria in detail does not mean that there is a shared understanding of how they are to guide practice. Strategies need to be found to interrogate and interpret the criteria. (p. 18) [...]

1. Appendix 1. Policy and planning

The educational provider has a clear sense of purpose and direction, which is informed by national priorities as well as by the quality demands of cost effective educational provision. There is both a rationale and relevant systems for the use of distance education methods to achieve the purpose of the programme for the target learners. (p. 20) [...]

2. Appendix 1. Learners

There is up-to-date detailed information about past, present and potential learners. This is used to inform policy and planning of programme development, course design and materials development, learner support, and other relevant aspects of educational provision. (p. 22) [...]

3. Appendix 1. Programme development

Programmes are flexible and designed with national needs as well as the needs of prospective learners and employers in mind; their form and structure encourage access and are responsive to changing environments; learning and assessment methods are appropriate to the purpose and outcomes of the programmes. (p. 23) [...]

4. Appendix 1. Course design

The course curriculum is well-researched, with aims and learning outcomes appropriate to the level of study; content, teaching and learning and assessment methods facilitate the achievement of the aims and learning outcomes; there is an identified process of development and evaluation of courses. (p. 26) [...]

5. Appendix 1. Course materials

The content, assessment, and teaching and learning approaches in the course materials support the aims and learning outcomes; the materials are accessibly presented; they teach in a coherent way that engages the learners; there is an identified process of development and evaluation of course materials. (p. 28) [...]

6. Appendix 1. Assessment

Assessment is an essential feature of the teaching and learning process, is properly managed, and meets the requirements of accreditation bodies and employers. (p. 30)
[...]

7. Appendix 1. Learner support

Learners are provided with a range of opportunities for real two-way communication through the use of various forms of technology for tutoring at a distance, contact tutoring, assignment tutoring, mentoring where appropriate, counselling (both remote and face-to-face), and the stimulation of peer support structures. The need of learners for physical facilities and study resources and participation in decision-making is also taken into account. (p. 32)
[...]

8. Appendix 1. Human resource strategy

The staff structure as well as the experience, qualifications, responsibilities and job descriptions of staff are appropriate for the education and training services provided; staff development programmes equip staff to perform their roles and tasks effectively. (p. 35)
[...]

9. Appendix 1. Management and administration

There is effective and accountable management of communication and information as well as human and material resources; democratic governance structures are in place; efficient administrative systems support the activities of the educational provider; the educational provider is financially sound and can make reliable educational provision. (p. 37)
[...]

10. Appendix 1. Collaborative relationships

In the interests of cost-effective provision of education and training, collaborative relationships are formed and collaborative projects are undertaken wherever possible. (p. 40)
[...]

11. Appendix 1. Quality assurance

There is an integrated framework at a policy and practice level that informs a clear cycle of planning, implementing, monitoring, reflection and action to ensure that learners' and staff needs as well as the needs of other clients are met. (p. 41)
[...]

12. Appendix 1. Information dissemination

Education and training services of the educational provider are effectively and accurately promoted in a variety of ways. (p. 42)
[...]

13. Appendix 1. Results

The educational provider fulfils its mission and individual programmes achieve valid teaching and learning goals in cost-effective ways that have a positive impact on society and meet the needs of clients and national priorities. (p. 43)

Appendix 2. Roles and responsibilities in developing a MOOC

In conceptualising, designing and delivering a MOOC, an institution should establish two teams: and institutional team and a departmental course (or programme) team. Suggested membership and responsibilities of the two teams are provided in Tables 2.1 and 2.2 respectively.

Table 2.1. Institutional team (source: Geng et al., 2017)

University MOOC Advisory Group	• Produce and manage MOOC policy • Manage and approve MOOC proposals • Monitor MOOC quality
Project manager	• Manage all relevant aspects of the MOOC workflow • Work with and report to the MOOC advisory group • Coordinate activities of all institutional leads
Video lead	• Coordinate media production including video, graphics and animations • Manage and ensure the quality of the full media production cycle: pre-production, presenter coaching, production, post-production (editing, transcription, and overall quality control of media)
Marketing lead	• Manage media coverage and promote the course through institutional channels • Support the course team to promote the course via their own media channels, e.g., internal channels, alumni groups etc.
Learning technology lead	• Lead instructional design and provide pedagogical and assessment advice • Manage and support the course design and delivery • Work closely with the MOOC advisory group
Legal lead	• Support course team in terms of copyright, intellectual property, accessibility and licensing
Research lead	• Support research strategy around MOOC course data • Manage student usage data for regular analysis and reporting

Table 2.2. Course team (source: Geng et al., 2017)

Lead academic (subject matter expert e.g., professor)	• Provide course content in relevant format, e.g., slideshow, lecture notes, existing learning materials • Act as a lead presenter in the course videos • Design and develop assessment activities • Give the final approval for the course quality
Course coordinator	• Contribute to course design, development and quality assurance (QA) • Coordinate with edX partner manager for release schedules and QA process • Communicate with students via weekly updates when course goes live • Market and communicate the course at their own department/school level • Liaise with senior manager at department/school to make strategic decisions including course success criteria, releasing and rerun schedule etc.
Teaching assistant/s (including on-campus students familiar with the course content)	• Contribute to the QA process for course content • Work with lead academic to develop assessment activities • Manage and contribute to the discussion forums
Admin and IT staff	• Contribute to the design of course surveys • Book rooms, schedule meetings/filming • Provide local IT support for MOOC development activities