Abstract
In our digital age online technology permeates higher education - whether programmes are formally offered online or not. We adopt the definitions of the Babson surveys in distinguishing between face-to-face, blended, and online learning (Babson, 2016). A first question is whether the current fashion for blended learning is a rearguard action against the trend to move much of higher education towards fully online learning, or whether blended learning has special merits. If so, what are those merits?

Flexible learning is another term commonly used to describe various combinations of classroom and online teaching. Is flexibility a purely positive phenomenon or does it have limits? If so, what are those limits?

Finally, we hear that higher education is being unbundled. How far can it be unbundled without falling apart and losing the respect of the public on whom it depends?

Introduction
A media frenzy around the MOOCs (Massive Open Online Courses) offered by a few elite US institutions in 2012 alerted universities worldwide to the opportunities and threats of online learning (Daniel, 2012). As they face up to this new reality, 'blended learning' has become the most common term for their institutional strategies to address it. 'Blended' is a conveniently vague word that can be applied any mixture of classroom activity and online instruction.

We ask first what blended learning means and how we can best offer it. Is blending classroom teaching with online study just a milestone on the road to a largely online future? Is it an attempt to maintain traditional instructional habits against the rising tide of online learning opportunities or does face-to-face interaction really add value? If so, what is that value?

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'Flexible learning' is another term to describe various combinations of classroom and online teaching. Are there limits to the flexibility we should provide and, if so, what are they? We ask how much flexibility students should have in the timing of their studies and caution that new qualifications created for online study will need time to establish their credibility.

Online, blended and flexible learning have made possible the concept of 'unbundling' higher education, meaning that students can obtain the various elements of their learning needs from different providers and assemble them into the unique outcomes that they seek. We shall take a critical look at this idea by asking how far higher education can be unbundled without falling apart and becoming unattractive and ineffective?

**Blended learning - what mix?**

We begin with blended learning. Anyone writing about online learning today owes a huge debt to Professor Tony Bates for his splendid book *Teaching in a Digital Age: Guidelines for Designing Teaching and Learning* (Bates, 2015). Those who want to explore further the past, present and likely future developments in online learning should go to this excellent guide.

The series of Babson reports that has appeared since 2003 uses the following definitions (Babson, 2016, p. 7):

- Online: at least 80% of the course content is delivered online.
- Face-to-face: courses in which zero to 29% of the content is delivered online (this category includes both traditional and web-facilitated courses).
- Blended (or hybrid): between 30% and 80% of course content delivered online.

Babson uses the terms blended and hybrid as synonyms. Bates (2015, p. 311), however, has made a useful proposal to use 'blended learning' for all combinations of online and face-to-face with between 30% to 80% delivered online, but to restrict the term 'hybrid learning' to blended courses where, instead of using online technology in opportunistic and serendipitous ways, the whole teaching-learning system is redesigned to create optimum synergy between the face-to-face sessions and learning online (Daniel, 2016).

What does the research tell us about how blended learning might create a better future for higher education? Expressed succinctly, five key research findings are:

- We should aim for hybrid learning, designing for optimum synergy between online learning and face-to-face teaching interventions.
- Face-to-face teaching is not more effective than online learning. Bates' *Principle of Equal Substitution* suggests that we should now reverse current practice and treat online learning rather than classroom teaching as the default mode (Bates, 2015, p. 315).
- Students engage more deeply with online learning and work harder than in classroom
- The more independent study and work students do, the better they learn.

- The 21st century requires a blend of skills and knowledge. Interactive teaching is particularly important in helping students to develop certain skills in context and to grasp the academic knowledge underpinning their discipline.

**Flexible learning - how supple?**

We turn now to flexible learning. Flexibility has many dimensions. For students it means easier access to learning, greater convenience in choosing where to study, a wider variety of credentials to aim for and more autonomy in scheduling their lives. For instructors it expands the range of pedagogies available in course/programme design, makes available new (often free) teaching resources, implies less 'stand-up teaching' and permits greater variety and creativity in assessing students' work.

Evidence indicates that effective use of these options can improve learning outcomes by stimulating students to engage more fully with their courses (Daniel, 2016). Institutions can use online learning to expand their geographic reach and, maybe more importantly, to make their offerings more attractive to campus students by deepening their engagement with their courses.

Flexibility sounds like an entirely desirable attribute but it has limits. Buildings and earthquakes are a useful analogy. Both buildings constructed too flexibly and also those built too rigidly can collapse in a major earthquake. Engineers aim for structures that have the toughness and resilience to cope with the range of stresses they are likely to encounter. This is expressed more abstractly in the cybernetic Principle of Requisite Variety (Ashby, 1956): 'the larger the variety of actions available to a control system, the larger the variety of perturbations it is able to compensate'.

Some complain that current higher education systems are too rigid, but neither should they be too flexible. How far can we extend flexibility in postsecondary education and where are the limits?

**Flexibility of timing**

Most online learning is asynchronous, meaning that students can choose when they study. But this power to bridge time needs careful handling. If students' convenience were the main criterion, then we should allow them to enrol in a course at any time and complete it at their own pace. Flexibility in start dates is fine, although it does reduce the possibility of interaction between students who are at the same point in the course, as well as being more challenging for tutors and teachers. There is abundant evidence, however, that making courses entirely self-paced after enrolment leads to lower retention and completion rates.
This is not surprising. All learners need a mechanism to motivate them to give some priority to their studies. This usually takes the form of assignment deadlines and a fixed date for the end of the course while giving them flexibility to schedule their work within this framework. Another approach is to break the course into several shorter courses so that the student can complete each one more quickly and, if desired, take a break before tackling the next one.

The key criterion for judging the value of flexibility in online learning is whether students become more engaged and perform better. Contact North's (2016a) posting, Towards a New Pedagogy of Engaged Learning, provides much useful guidance to teachers, as does its companion document, Seven Habits of the Professor of the Future (Contact North, 2016b).

**Flexibility of Outcomes**

Online learning has also created greater flexibility in the definition of learning outcomes. Where are the limits to that flexibility?

Students coming into higher education are seeking - and being offered - a wider range of learning outcomes than in the past. Traditional degrees and diplomas will not become obsolete any time soon, but shorter learning opportunities (like MOOCs) are blossoming under the stimulus of online learning.

With MOOCs it is largely up to individual learners to judge the value of the learning outcomes for themselves. However, there is now a range of approaches to certifying learning outcomes leading right up to the examinations and screening used by the most exacting professions. Online technologies have facilitated this diversification, open badges being a good example.

Open badges are based on software that allows any organisation or individual to present a digital badge to a learner who has satisfied the criteria for earning it. Because they are in digital format, badges can include more information about what and how the learners studied, how they were assessed, the time involved, etc. than a normal paper record. Crucially, however, value of the badge to the holder who presents it to a potential employer as proof of competence will depend on the credibility of the organisation or individual that issued the badge.

Students should be aware that new forms of certification take time to establish their credibility, although in this fast-moving field that time need not be very long. Nevertheless, after learners find a course that matches their needs they should check the credibility, within that particular field, of the body that will certify their achievement.

**How far can we 'unbundle' higher education?**

We have described how online technology allows us to separate out the various elements in the teaching learning process and address them in different ways. Online learning can
be blended with face-to-face teaching events. Separating out the different stages in the learning journey can also give students greater flexibility.

This is a major change. Not very long ago the formula for teaching courses in higher education was much more rigid. Single teachers usually designed the individual courses, prepared any supporting materials they needed and then taught the course face-to-face to students in a classroom. In some countries these instructors also set and mark the end of course examinations, although in others this is done centrally. Some call this the 'cottage industry' approach to teaching, because one person handles every step of the process.

In the online world these steps can be separated. The components of the learning process can be split up, potentially separating course design, content development, delivery, support, assessment and credentialing so that they can, in principle, be done by different organisations. This is called the unbundling of higher education. Previously instructors and institutions assembled the complete learning experience and offered it to students as a 'bundle'.

Now, at least in theory, students will be able to select the providers of content, seek the mentoring that they require and then be assessed in dedicated assessment centres so as to secure recognition by professional bodies, credit coordinating agencies, and/or universities and colleges. A paper by Contact North suggests that unbundling is the key to 'personalized learning routes and differentiation of providers' (Contact North, 2016c).

Does this describe a happy world of extraordinary flexibility and rich choice for learners or something closer to anarchy? These elements of flexibility foreseen by the proponents of unbundling will doubtless become available. It sounds like a good idea for students to design learning journeys uniquely tailored to their personal wishes, but do many students want that? For several reasons we suspect that few students will choose the fully unbundled model.

First, most people are overwhelmed by too much choice and will not want to handle the transaction costs and complexities of dealing with different bodies for each step of their learning and certification processes. Most students like the security of dealing with an institution that they know and trust. This is why most students choose online providers that have a presence in their own country.

Second, faculty members like to have some consistency and continuity in their student body. They like to get to know their students, both as a group and also as individuals. Academics are likely to find the free-for-all of the unbundled world demotivating because it will turn their teaching activities into commodities.

Third, institutions also like to be able to identify 'their' students. In many jurisdictions student numbers determine funding from governments. And in a world where state funding is decreasing institutions are keen to turn students into alumni who might become donors in later life.
For these reasons we expect that HEIs will react to unbundling by organising themselves to re-bundle the total learning experience for students - and that students will accept this gratefully.

The Irish scholar Desmond Keegan once pointed out that in classroom education the teacher teaches, whereas in distance education the institution teaches (Keegan, 1990). We noted earlier how, in describing the cottage-industry model of university teaching, a single instructor implements most of the steps in the instructional process. But distance education courses and online courses can have a life that is independent of the particular academics that first prepared them. This means that the institution has to take some responsibility for ensuring continuity in offering and supporting these courses.

As higher education institutions expand their online offerings they find it necessary to strengthen the central administrative function supporting these offerings. As well as making it possible for the institution to offer courses when the academics that developed them are on vacation or sabbatical, a well-organised central support function also ensures that students have a more consistent study experience.

Open universities, which function exclusively through ODL (open and distance learning), build these central support systems before they start operations, whereas campus institutions that add ODL offerings must put them in place as the programme expands. This is usually controversial because any involvement of the central administration in teaching functions tends to provoke resistance from the schools and faculties as well as from individual academics. The solution, at least in theory, is subsidiarity; an organising principle which holds that matters ought to be handled by the smallest, lowest or least centralized competent authority. This could mean, for example, that central services operate a common Learning Management System for the whole institution, whereas, say, the School of Nursing organises support and practicums for its own ODL students.

However, as technology evolves and ODL offerings expand, the optimal expression of subsidiarity will change too. Institutions need to take responsibility for helping faculty members re-equip themselves, both materially and intellectually, to handle the options and outcomes that online technology makes possible. Human resources policies must also adapt to changing patterns of academic work. While the negotiations required may be painful, they are probably best conducted at the institutional level rather than unit-by-unit.

An effective approach to subsidiarity in organising an institution for a more flexible future will also help it to cope with the challenge of unbundling. Some institutions, both out of self-interest but also with the encouragement of students, may set up brokerage-style services to help students re-bundle the elements that they want. This will mean hiring increasing numbers of counsellors and specialists of various kinds, which carries its own risk.
US postsecondary tuition fees have increased faster than inflation in recent years because institutions have added many new non-academic staff while reducing the number of appointments to full-time faculty posts. This poses a threat to the academic vitality of HEIs. In the online world students still look to HEIs for intellectual stimulation and authoritative teaching. This is no time for HEIs to hollow out the academic core of their mission!

**Conclusion**

We have examined current developments in online higher education, notably the trends toward blended learning, more flexible study options and the potential for unbundling the components of the teaching-learning process to allow students to pick and choose providers.

In our view the overall goal should be hybrid learning in which the whole teaching-learning system is redesigned to create optimum synergy between the face-to-face teaching sessions and learning online. This should take into account Bates' *Principle of Equal Substitution* and treat online learning as the default mode whenever there is a choice between online and face-to-face instruction.

Flexible study options are an important advance but learners should not be allowed excessive flexibility in the timing of their studies and should review carefully the credibility of new qualifications on offer.

Finally, although there will be some unbundling of the elements of the higher education process we expect that most students will continue to look to their HEIs to re-bundle their chosen elements for them.

**References**


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