Stacking the odds

Stackable programmes and courses deliver flexibility and options to the market and allow universities to unlock their breadth of knowledge. **Paul Kofman** describes a quiet revolution

Technological disruption affects every sector of the economy including education. From TEDx talks on YouTube to edX MOOCs and Udacity nanodegrees, the mode of delivery is increasingly online.

Just as FinTech lowered the bar on entry to the banking sector through mobile banking devices and robot advice, EdTech allows entrepreneurial online education providers to make a similar low-cost, high-volume entry. Universities were ill-prepared for this challenge. Until fairly recently their attitude was to wait and see. They are now finally getting in on the act, and doing so on their terms.

As degree-granting accredited and quality-assured institutions, universities have a significant advantage over private providers. They are now using that advantage while adopting the same disruptive delivery model. By deconstructing traditional degree programmes into "stackable" learning modules, universities can maintain and exploit their credibility and reputation while catering for significant unmet demand.

Listen to the market

Change comes slowly at universities. The principal method of transferring knowledge is much the same as it was a hundred years ago: face-to-face delivery on campus of semester-length subjects. Part-time study is possible but is often actively discouraged. After all, it takes commitment to complete a multi-year programme.

Also, subjects are strictly sequenced to complete the programme and the degree is only awarded after the most advanced subjects have been completed. Dropping out, and then opting back in, is really not an option. When a student changes his or her mind about their chosen degree programme, they had better consider whether credit for subjects already completed can be transferred towards a more desirable degree. Discontinuation of studies all too often leaves the unfortunate student empty handed.

While degree students "slug it out", many post-professional students are overwhelmed by the prospect of starting a degree programme with the potential not to complete it. The investment in time and finance simply does not stack up against those risks.

What do these post-professionals want? Answer: Flexible stand-alone learning modules designed as stackable building blocks into various degree programmes; where sequencing of subjects is not fixed but flexible and multi-dimensional; where the knowledge acquired can stand alone in delivering on a single module's learning objectives; and the level of time/financial investment can be tailored to individual circumstances.

The success and uptake of short, specialised online courses illustrates the heterogeneity of a global audience including, but not restricted to, post-professional learners.

First, there are the professionals who want to upskill or acquire new skills based on the latest knowledge advances. They do this to enhance or change careers. They might lack access to traditional providers or simply cannot afford to commit the time to complete comprehensive degrees.

Second, there are the prospective degree students who do not qualify for direct entry into degree programmes and seek alternative pathways. They pursue short intensive-mode bridging courses that can prove their academic ability.

Third, there are the existing degree students who want co-curricular flexibility and "add-on" credentials (like a language diploma) beyond their chosen degree programme.

And lastly, there is the general public who seek knowledge for its own sake or to better understand the world they live in. They learn in an unstructured way and have little desire to commit to lengthy sequential degree programmes.

Self-contained but stackable "bite-size" learning modules offer an alternative to standard degree programmes for all these prospective users.

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Needs of a new workforce

Employer-employee loyalty is not what it once was. The millennial employees – keen to explore their talents and broaden their horizons – are seemingly reluctant to commit to a single employer beyond a few years. They want multiple careers throughout their working lives. Meanwhile, employers – still reeling from the global financial crisis of 2008 – prefer a more "casualised" work force to scale their employment needs to economic conditions.

While those two ambitions may seem to complement each other, it is nevertheless a clash of generations that has the potential to undermine the stability of workforce roles. And it has implications for employee training and graduate recruitment skill sets.

In response, employees want to regularly update their professional knowledge and skills either for career advancement or for career change. Employers want ready-to-deploy work skills and they want to regularly upskill their staff to better adapt to changing roles, tasks and technology.

The immediate benefit from supporting staff to pursue lengthy (part-time) masters degree programmes is considered increasingly limited in achieving those goals. At worst, those programmes encourage staff to seek new opportunities, change careers and leave.

Professional and industry bodies, employee and employer groups, as well as large corporations demand (or even offer their own) bespoke programmes addressing these changing educational needs. And private education providers and consultants jumped into this void. Both employees and employers want programmes that signal verified, educational attainment.

This is where universities stand to gain much.

A reputable tertiary education institution significantly reduces information asymmetry in staff recruitment. Universities are quality accredited to determine what level of depth in learning needs to be achieved before a degree can be meaningfully awarded. That quality assurance extends to the accreditation of stackable learning modules by awarding a badge, a certificate or a (micro) credential.

Mosaic programmes – realising the comprehensive university

From shared roots in medieval times and the Renaissance, our university disciplines have over the last century or so increasingly separated through specialisation – in research as much as in their teaching programmes. That's about to change.

The identification of grand challenges and wicked problems have forced university research programmes to reconsider the wisdom of pursuing

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isolated, ever-more specialised discipline knowledge. Research centres and research grant funding schemes now prioritise and reward interdisciplinarity.

Teaching programmes are not far behind. In a technologically disrupted world where many traditional (and highly specialised) occupations are under threat, different interdisciplinary skill sets are required to best prepare students for the jobs of the future. Stackable degree programmes allow this transition to happen organically.

Through cross-referencing of graduate skills and attributes in different disciplines, students build a portfolio of credentials valued by employers who expect their staff to be adaptable to change.

Rather than a disruptive necessity to change, universities should grasp the opportunity of interdisciplinarity.

After all, which private provider can afford to offer the full range of disciplines offered by a university? Consider bringing together finance, programming and computer science with ethics and mathematics (and carve out a career in FinTech); or combine molecular biology with computer science and design thinking (for a career developing smart pharmaceuticals).

Exploring the cutting edge of knowledge in such a broad portfolio of disciplines is only possible at a university.

Stackable programmes and the university

Stackable modular education has been (and is) considered by some a threat to deep learning. There may be an element of truth in that but for those academics who embrace it, it has opened a much deeper understanding of the educational building blocks and the assurance of learning. Modularising curriculum is both a necessity and a unique opportunity arising from online delivery of curricula.

Just as online programmes, stackable learning modules need to be purpose-designed. They need to be stand-alone, contain a learning objective and an assurance of learning assessment. It cannot simply be a three-hour lecture slide pack divided into 12 equal parts with a single comprehensive final exam.

However, the biggest design challenge is for the modules to be multi-dimensional, that is, stackable in multiple disciplinary directions. A set of leadership and strategy modules should be stackable with a set of chemical engineering modules just as easily as with criminology modules.

That flexibility will require university-wide clarity and consistency in the quality assurance of stackable programmes. And while giving students the flexibility to compose their own certificate/diploma/masters, it should not be a free for all.

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There are a few other things that need to come together for the successful delivery of stackable learning modules. Academic workload models will need to recognise modular teaching activity. Particularly so when flexible teaching periods are increasingly common to enable regular delivery of stackable modules.

Discipline-based institutions will need to let go of their exclusive disciplinary ownership of degree programmes and co-ordinate the marketing of interdisciplinary stackable programmes. And perhaps most disruptive of all will be the need for efficient and integrated administrative systems tailored to the delivery of stackable programmes. Disruptive changes but necessary conditions.

Universities bring reputation, research-led educational specialisation and interdisciplinary breadth. It would be foolish to ignore the opportunity to expand our educational portfolio in new, flexible ways that ensure life-long learning.

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About the Author

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