



Learning excellence

A summary analysis of 26 international case studies

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Executive summary

The rationale for the project and its six themes

In May 2015, the Higher Education Academy (HEA) commissioned a consultancy project, the aim of which was to identify and investigate international examples of 'learning excellence and innovation' in relation to six themes chosen by the HEA as being particularly relevant for the United Kingdom (UK). The focus of the project is on practical and proven innovations that seek to enhance learning and educational outcomes for students across the six themes. Each theme is a well-recognised challenge for higher education providers (HEPs)¹ and practitioners in the UK and in many other countries. This two-part report is complementary to several research studies and literature reviews on 'teaching excellence' that the HEA has already published (for example: Courtney (forthcoming); Temple et al (2014); Gunn and Fisk (2013)). The case studies that make up the core of the project do not include comparable examples of innovation in the UK. Instead, they aim to alert UK higher education providers to international institutions working on comparable learning and teaching challenges, highlighting examples of innovative solutions and offering access to international resources and contacts. The focus on learning (and not just teaching) is intended to emphasise and ensure that the case studies highlighted interventions that were working to improve educational outcomes for students.

The precise definitions of 'innovation' and 'excellence' were established in the context of each country or region rather than having a definition imposed from outside. The common features were that innovations needed to be proven (or show promise) and 'learning excellence' had to focus on improved educational outcomes for students. Given the great variety of contexts, including different structures and resourcing of higher education (HE) systems, interpretations of 'innovation' and 'excellence' might well differ from those used in the UK. Nonetheless, the international team confirmed both that the six UK themes were recognisable and relevant to challenges faced in other countries and that there were examples of excellent and innovative practice that could be identified. The value of particular case examples to UK institutions is also context-dependent, given different missions, student populations, resources and strategic institutional priorities in relation to any of the six themes. The international case studies and accompanying analyses are designed to provide an entrance point for institutions that wish to explore the international cases and associated resources in more depth, including making direct contacts with the institutions and educational leaders involved in the innovations.

The project report is prepared in two sections. Part A is a summary analysis of 26 international case studies and eight mini-cases. Part B provides full details of the case studies with associated references and contact details related to each case. The two parts need to be read in relation to each other as Part A signals over-arching features of the six themes and aspects of innovation and excellence that require interpretation in the specific contexts of each case in Part B, and in relation to the particular interests of readers.

The project was designed to be useful for a wide readership including senior institutional leaders such as Pro-Vice-Chancellors and deputy principals (learning and teaching) and deans of faculty who are engaged in promoting quality enhancement and innovation in learning, teaching, and students' experiences of higher education, both within the formal curriculum and in extra-curricular activities. The project findings should also be of use and interest to higher education practitioners directly engaged in delivering teaching and supporting learning and policy-makers seeking to incentivise and

¹ Note throughout the report, the terms 'university', 'HE institution' and 'HE provider' are used interchangeably. The report is applicable to all types of provider in HE.

promote excellence in learning activities, experiences and outcomes for students. It is hoped that new ideas and global links to enhance learning and teaching will be fostered through connections and collaborations arising from this project.

An international team of five higher education experts (see Appendix 1), focusing on five different regions – North America, South America, Australia, Europe, and Africa – was invited to identify relevant international case studies at institutional or subject levels across six themes agreed with the HEA. All types of institution offering higher education were within the scope of the project. The six themes are:

- approaches to assessing learning;
- ensuring graduates are employable;
- international students and learning styles across cultures;
- recruiting new types of domestic students and the pedagogical developments required;
- improving student retention and attainment;
- engagement with the community and co-development of curricula.

The methodology

There were six stages in the methodology developed by the project team after the six themes had been identified and agreed with the HEA:

- first, the project team agreed a set of broad criteria for identifying and selecting cases. These included: proven innovations, national and also international recognition, evidence of successful implementation and change, and access to a credible local informant who could provide more detailed information about the innovation. Cases were identified through a variety of sources including national and international prizes and awards, media coverage, personal knowledge of the authors and advice from experts within relevant communities of practice;
- next, a template was agreed for the information to be collected in each case;
- the following stage was concerned with filtering an initial selection of 51 possible studies down to a final 26, following the agreed criteria. Eight 'mini-cases' were also identified for inclusion as 'boxes' in the text of the report;
- a two month fieldwork stage followed which was desk-based and involved collection of information through web-based searches. This was then illuminated and extended by telephone or Skype contact with senior staff members in the case study institutions;
- the international team members wrote the case studies which were then verified by the local informants;
- the final stages involved a cross-cutting analysis of the findings from each of the case studies within each theme and subsequently, a meta-analysis of themes arising across all the case studies.

Each of the 26 full cases in Part B is in a standard format that provides:

- details about the objectives of the particular innovation;
- data and information about successful outcomes;
- ways in which the innovation was organised, led, supported and implemented;
- and any barriers encountered and overcome.

In addition, references to relevant and useful resources and further information about projects and initiatives are included in Part B with the contact details for each of the local informants.

A summary of case studies in the six themes

Part B of the project report, containing the 26 full case studies, is in a separate volume. They are summarised in Section 3 of this Part A report, and a very brief description of them under the six themes is as follows:

Approaches to assessing learning

Case study examples of approaches to assessing learning include:

- Brandman University has developed regular assessment methods of student performance at three levels: the outcomes for general education, for five competencies of its institutional learning outcomes, and for programme outcomes;
- the University of Notre Dame has started an initiative under which all students compile e-portfolios as self-assessment and development tools;
- James Madison University has an assessment framework that is applied to student performance, evaluation of programmes and courses, and to surveys of alumni;
- Amsterdam University College is a joint-venture new institution designed to create more avenues for excellence and greater opportunities for students to major in science and science-related fields in a liberal-arts and science context. It seeks to achieve this by a multi-level pre-assessment process;
- Monash University led a multi-institution and multi-discipline innovation to develop an assessment design decisions' framework to improve assessment practice.

Ensuring students are employable

Case study examples of initiatives to ensure students are employable include:

- 2iE in Burkina Faso is an international collaboration between 14 West African countries to remedy the shortage of professional engineers with a broad understanding of the entrepreneurial skills required by employers;
- the University of Waterloo has a strategic commitment to co-operative education and experiential learning that has developed since 1957. This greatly enhances students' employability;
- Roskilde University has a whole-institution curricular approach called 'problem-oriented project learning' where students work in teams on inter-disciplinary projects;
- Maastricht University has applied problem-based learning since 1974 and has extended the approach across all faculties, all students and into its collaborations with external partners in a 'Knowledge Axis' to support the local economy;
- Nelson Mandela Metropolitan University has initiated a two-pronged approach to ensure that its graduates have the skills and entrepreneurial drive to enable them to be employed or self-employed and to contribute to economic development of the region: experiential learning and co-curricular activities that meet approved learning outcomes and graduate attributes;
- Olin College of Engineering, a new institution designed to address perceived problems in engineering education in the US, has adopted a new pedagogical approach (e.g. every student must build a year-long design project and must start a business to graduate) and a new curriculum that combines engineering with entrepreneurship, business management and humanities;
- the University of Limerick has introduced co-operative education as a formal, compulsory and integrated element of all undergraduate degrees;
- at Université Catholique de Louvain (UCL) in Belgium, a student-run programme combines community service, extra-curricular or co-curricular projects. Teams of ten students share a residence and living space in the city as they work on projects. These strengthen the skills that are required by the labour market.

International students and learning styles across cultures

Case study examples of work supporting international students and learning styles across cultures include:

- Curtin University extended and re-designed a 'Framework of Quality Principles for Transnational Education' to apply to the curriculum, pedagogy and staff welfare, embedding its use among practitioners through an Action Learning approach to staff development across all its campuses in Australia, Malaysia, and Singapore;
- at the University of Lausanne, a toolkit was designed to assist practitioners in internationalising the curriculum in ways that engaged international students from many parts of the world;
- at the University of Melbourne, guidance and practical resources for academic staff were developed to enhance interaction among students from diverse cultural and linguistic backgrounds;
- the Central European University was designed to be fully international across its staff, students and activities, promoting the values of open society and self-reflective critical thinking in parts of the world experiencing emerging democracy;
- Northeastern University has established a resource centre for students called 'Global Student Success' offering a range of evidence-based services by expert academic staff including language assessments, academic writing, linguistics, technology and cultural competency.

Recruiting new types of domestic student and the pedagogical developments required

Examples of recruitment and pedagogical developments for new types of domestic student include:

- Sciences Po, an elite French institution initiated a partnership with some *lycées* and an affirmative action programme to widen its recruitment of students from financially and educationally disadvantaged backgrounds;
- the University of Queensland's School of Chemistry initiated a web-based tool to generate and manage inter-disciplinary scenario enquiry tasks in very large classes;
- Western Governors' University, a fully online university, was created to expand access to working adults. All courses are competency based, designed by programme councils of academic staff with industry experts;
- the Community College of Aurora, with high numbers of minority and low-income students, has introduced an 'Equity Scorecard' as a diagnostic tool that helps teachers to remove barriers and blockages to equity in the way that they teach or interact with students;
- San Francisco State University and City College of San Francisco formed a partnership and redesigned the first two years of college experience to sharply improve college completion and academic success (the Metro Academies Program);
- Uniminuto University was explicitly established to offer good quality education to young people from low-income families living in disadvantaged areas; it has developed the 'Integrated Focus Model' which offers comprehensive support to students throughout their time in the university;
- Macquarie University has developed an approach of blended synchronous learning to facilitate collaborative interactions between students and staff who are increasingly distributed and dislocated.

Improving student retention and attainment

Examples of improving student retention and attainment include:

- the University of Bio Bio in Chile has reformed its curriculum and has launched the 'First Year Induction and Integration Programme' aimed at reducing attrition rates among students, the time to completion of degrees, and improving the employability of students. Much of the work is undertaken by specially trained volunteer students;

- the University of Cape Town has developed the university-wide 'First Year Experience' project to support its students coming from financially and educationally disadvantaged backgrounds;
- in the same university, the Faculty of Commerce, through a faculty-based Educational Development Unit, provides extra support to students throughout their university career, built into learning and teaching experiences that apply to all elements of the curriculum. Academic staff development is a key feature of the initiative so that all staff are trained to handle diversity among students and to appreciate the changes needed to traditional teaching and learning practices from the first to the final year;
- Guttman Community College is a new college specifically designed to address poor attainment in the local area. It has introduced an integrated package of carefully researched practices to address and support the variety of student needs; these are built around three co-located learning communities involving staff and students;
- James Cook University and Queensland University of Technology have introduced a 'transition pedagogy' to lift the attainment and reduce the attrition of their increasingly diverse cohorts of students in their first year;
- in several universities in the US, 'big data' analytics are being used to identify at-risk students and enhance effective support to improve graduation rates, especially at non-selective institutions.

Engagement with the community and co-development of curricula

Examples of engagement with the community and co-development of curricula include:

- Widener University in the US has made civic engagement a key strategy and core feature of the University to address economic and social deprivation in the local community after the collapse of major industries. The university has created a number of specific services for the community including a social work counselling service and centre for social work education, community nursing and physiotherapy clinics, a centre for violence protection and a charter school. Students and staff are involved in these developments and the curriculum includes co-designed experiential learning in and with the community;
- responding to its rural location and need for community re-generation, IT Sligo has developed a variety of flexible delivery modes for its programmes, in partnership with companies in the region and extended to their overseas locations. Student numbers have increased and local students study alongside students employed by global corporate clients;
- Umeå University in Sweden has launched their 'Industrial Graduate School for Research and Innovation', which involves students working on co-supervised projects with academics and external partners from companies, government agencies or other types of organisation.

Conclusions from the meta-analysis of the case studies

Organisation and management

Features of organisation and management identified across the cases include:

- setting up new institutions, collaborating across institutions or merging institutions;
- changing or developing existing organisational structures, services and units;
- designing virtual structures such as student e-portfolios;
- re-designing and re-framing curricula, programmes and pedagogies, often taking advantage of new technologies.

Focused and sustained leadership is a common feature of many cases, alongside a variety of governance structures that may be inclusive, democratic and collegial as well as determined and corporate. There are numerous examples of accompanying changes in management roles, systems, procedures and business processes. The reported challenges of implementation include:

- external regulatory barriers;
- the difficulty of finding and managing large numbers of work placements;
- internal cultural barriers, financial and resource barriers;
- workload and capacity issues of embedding changes in practice.
- While there are also challenges in evaluating the innovations, most of the case studies demonstrate a variety of forms of evaluation: formative and summative, quantitative and qualitative, internal and external. Assessment of quality, extensive use of metrics and cross-institutional benchmarking are also widespread. Several of the innovations have also attracted awards and prizes for the institutions, staff and students involved.

Elements of innovation and excellence

The cases illustrated a number of elements or indicators of 'innovation' and of 'excellence' in relation to the reported improvements in educational outcomes for students and the meta-analysis sought to capture these as far as possible from the written case studies:

- the first aspect identified was the setting or source of innovation. This included both new or re-structured institutions (and the drivers behind these) and those involved in institutional innovations from individual leaders to teams of practitioners in disciplines;
- the factors that indicated that innovations were successful included vertical and horizontal diffusion of the innovation across an institution; the scaling-up of initiatives across discipline areas, or from local to national levels; international recognition and awards; and recognition through media and scholarly publications. Other indicators included reputational gain and external investment by national bodies helping to disseminate innovations more widely;
- indicators of excellence highlighted in the cases include institutional strategies with clear goals and targets that have been sustained, developed and re-designed over time; and team-based initiatives at disciplinary level with similar clarity of focus, purpose and target outcomes and outputs. Individual leadership, collective and team leadership and distributed leadership are all illustrated in different cases. A further important feature across cases is that evidence, and the gathering of evidence, plays a key part in the design, testing, embedding and spreading of initiatives;
- some cases demonstrate a sophisticated and ongoing approach to continuous improvement based on evidence of what works; in other cases, well-evidenced and published research is used as a basis for introducing initiatives;
- another strong feature reported in the cases is how often the approach to enhancing learning or to introducing innovations is integrated and holistic, combining a number of good practices or addressing both pedagogical and curricula development at the same time as management systems and processes. Several cases demonstrate holistic approaches that bring varied staff expertise together, both academic and from professional support services, and a number of cases involve students as designers or partners in the initiative, while others also include external partners. Other case studies are holistic in the sense of addressing 'the whole student' in their educational, life and work experiences across their transition into, during and after their initial experience of higher education;
- active, experiential and student-centred learning approaches are a strong element across the majority of cases with clear benefits reported in terms of student engagement, retention and success. Reported benefits to learners include gaining academic and transferable skills, enhanced self-efficacy and confidence, and more opportunities (and success) in gaining employment or in self-employment. Wider benefits in terms of financial support or cost-savings for students and institutions are also part of the picture. Local communities are clear beneficiaries in some cases, as are businesses and employers, while inside institutions, better working relationships and teamwork across functions and structural boundaries are widely reported.

- a snapshot of the type of innovations that are included under each of the six themes reveals that large and small, public and private universities and colleges are developing and, in some cases, have developed over significant periods of time, a rich variety of learning innovations. Often these initiatives address more than one of our six themes and involve well-evidenced good practice. The following sections of the report provide more contextual detail about each set of innovations across the six themes included in this project.

1. Context and rationale for the study

There is increasing interest across all types of universities, colleges, governments and tertiary-level educational agencies in 'innovation' and 'excellence' in the design and delivery of the best possible educational experiences and outcomes for diverse groups of students. While research excellence typically still dominates global rankings, often driving institutional prestige and reputation, there is a much larger story to be told across nations and regions in relation to learning, teaching and students' experiences of tertiary education. The quality improvements, developments and innovations that result from the efforts of individual teachers, course teams and communities of practice within and across subjects, courses and institutions may be known locally and sometimes nationally. However, they are not necessarily visible internationally and may also be context-dependent in their relevance and application. This study seeks to illuminate selected international examples of 'learning excellence' and 'innovations in learning' that show promise of wider relevance and application for the UK and for other interested international audiences.

For at least the past two decades a key focus of supra-institutional agencies at state, regional, national and international levels has been on 'assuring quality' within and across programmes and institutions. Within this heading the concerns of government include assessment, learning and teaching practices as well as institutional processes and cultures. The precise aims of assuring quality vary across countries and lead to different outcomes such as accreditation, assignment of public funding – including determining eligibility for student loans – new programme development or student recruitment. Broadly, these quality assurance arrangements have served the two functions: of accountability (to taxpayers, students, employers and society) for the outcomes of teaching and learning, and continuous improvement of the quality of programmes and institutions.²

The criteria for judging institutional or programme quality through external quality assurance processes have tended to favour a 'fitness-for-purpose' or threshold level approach³ which respects national diversity and priorities, academic freedom and institutional autonomy and assures stakeholders that institutional and programme aims and outcomes are being met and are supported by continuing efforts to sustain and enhance quality. This approach is now changing in the direction of 'promoting excellence', as indicated, for example, by the revised mission of the International Network of Quality Assurance Agencies in Higher Education (INQAAHE), the global network of quality assurance agencies in higher education.⁴ The drivers behind this shift are varied. They include, political desires to differentiate among institutions to apply funding selectively; a growing diversity of students and their prior learning experience as a driver of selectivity at entry to college or at exit into employment in a competitive search for 'talent'; or the need to accelerate innovation as well as improvements in quality in teaching and learning as suggested by two recent reports in Europe.⁵ Other drivers include a desire

² Dittrich, K. (2013). Preface to *The Concept of Excellence in Higher Education*. ENQA Occasional Paper No. 20 p. 5. Available from: <http://www.enqa.eu/indirme/papers-and-reports/occ20%of%20Excellence%20in%20Higher%20Education.pdf> [Accessed 10 August 2015].

³ ie - assuring quality at a threshold or basic level rather than defining or grading quality at different levels.

⁴ INQAAHE Strategic Plan 2013-2017. Available from: http://www.inqaahe.org/admin/files/assets/subsites/13384421886-_inqaahe-strategic-plan-2013-2017.pdf [Accessed 10 August 2015].

⁵ Report to the European Commission on *Improving the quality of teaching and learning in Europe's higher education institutions* (2013) High Level Group on the Modernisation of Higher Education. Available from: http://ec.europa.eu/education/library/reports/modernisation_en.pdf [Accessed 10 August 2015]. Report to the European Commission on *New Modes of teaching and learning in higher education*. (2014) High Level Group on the

to sharpen the focus of accreditation and quality assurance processes on measuring student learning and attainment outcomes (a national and state-level effort for at least two decades in the US); a need to ensure value for money for students in a context of rising fee levels and falling contributions from the state; and a desire to rebalance incentives towards research performance and research careers by reward and recognition of excellent teaching (a current preoccupation in the UK).

As several recent reports in the UK⁶ and continental Europe⁷ have shown, there have been a variety of different national initiatives to promote excellence in teaching and learning in different countries in the last decade, with case examples from Germany, Russia, Finland, Australia, US, Canada, Hong Kong SAR, Taiwan, and South Africa, among others. These reports note that there are no agreed international definitions of teaching or learning excellence nor any standard framework in use for developing teaching and learning excellence at institutional or national levels. Different definitions, levels of analysis and criteria for judging excellence are in use within countries and institutions. In addition, governments adopt different ways of incentivising or rewarding good teaching.⁸ As Courtney (forthcoming) notes, there remain:

continuing conceptual and practical difficulties in defining, operationalising and measuring teaching excellence criteria and/or standards; a lack of consensus concerning distinctions between excellent teaching, teachers, learning and learners; and the conflation of notions of excellence and competence. (Courtney forthcoming, p. 5).

The present study does not seek to repeat existing reviews of the literature on teaching and learning excellence or analyses of national teaching excellence initiatives since the Higher Education Academy (HEA) has already published reports on these subjects. The project team also did not seek to define 'learning excellence' or what counts as innovation in learning in any absolute sense (given important contextual variables). Nonetheless, the project and this report has been informed by existing studies and their valuable content. The specific aim of this project has been to focus, where possible, on practical innovations aimed at enhancing learning and educational outcomes for students across a small number of themes that are well-recognised as challenges for higher education providers and practitioners in the UK and in many other countries.

At policy level, pressure for innovation in learning and teaching with a focus on enhanced learning outcomes for all students arises from challenges that are increasingly common internationally. These include the continuing and rising demand for access to higher education, the pressures on mass higher education systems to provide for diverse learners in flexible ways, growing internationalisation and the need for higher education providers to respond to changes in local and global labour markets and the

Modernisation of Higher Education. Available from: http://ec.europa.eu/education/library/reports/modernisation-universities_en.pdf [Accessed 10 August 2015].

⁶ UK: Gunn, V. and Fisk, A. (2013) *Considering teaching excellence in higher education: 2007-2013. A literature review since the CHERI report 2007*. York: Higher Education Academy; Courtney, S. (forthcoming) *Global approaches to developing Teaching Excellence Frameworks: A review of the literature*. York: Higher Education Academy. Land, R. and Gordon, G. (2015) *Teaching Excellence Initiatives: modalities and operational factors*. York: Higher Education Academy.

⁷ Continental Europe: Bennetot Pruvot, E. and Estermann, T. (2014) *Define Thematic Report: Funding for Excellence*. Brussels: European University Association.

Brusoni, M. et al. (2014). *The Concept of Excellence in Higher Education*. Occasional Paper 20. Brussels: European Association for Quality Assurance in Higher Education.

⁸ For example, in the UK the three national funding schemes (FDTL, TQEF and CETLs) used different models –based variously on rewarding good quality rankings, on formulaic allocations for all and on competitive bids for hosting the CETLs.

nature of work. Rapid changes in technology are a pervasive feature across all systems. However, policy-makers also observe and report much slower change in the design and delivery of curricula, programmes and associated pedagogies than is assumed to be desirable and needed in the light of such external drivers. Hence, examples of 'innovation' and 'excellent' practices that directly impact on student learning, educational experiences and attainment are important international priorities. Given universally recognised challenges of embedding innovations within institutions and disseminating them across institutions, evidence of where innovations have been shown to be effective is likely to be useful to policy makers and practitioners alike.

The innovative learning practices identified for this study were selected to have relevance for the UK and HEA's members, to have resonance internationally, to have been proven to be successful over time (in most cases) and to provide opportunities for further international dialogue and exchange in the interests of promoting 'learning excellence'. The study was commissioned during the review of quality assessment initiated by the Higher Education Funding Council for England (HEFCE)⁹ but prior to the new Government's announcement of the development of a 'Teaching Excellence Framework'¹⁰ for English higher education and the publication of the Green Paper *Fulfilling our Potential*.¹¹ Clearly, these developments provide a sharper political context in the UK for the relevance and attraction of the findings in this report.

2. Scope, focus and methodology of the study

The parameters of the study have been determined by balancing the feasibility of its scope with the relevance and utility of the findings for practitioners. The principal audience is those with institutional responsibilities for enhancing and developing learning and teaching. Course teams and individual practitioners, with a variety of teaching and learning support roles across different subject areas, will also find useful insights, reference to resources, and opportunities for international exchange. Policy-makers, too, may find some interesting examples from different world regions of ways to incentivise and support 'innovation' as a means to enhance 'excellence' in learning outcomes for students.

The study was commissioned in May 2015 and concluded in September 2015 with fieldwork undertaken over a three-month period. Six regions of the world were included initially (North America, South America, Europe, Australia, Africa, Asia)¹² where innovations in learning – with a track record – were known to be in operation or in development at institutional and subject levels.

The methodology was developed iteratively in consultation with the Higher Education Academy (HEA) and the international team who are experts in higher education research, development and consultancy with wide knowledge of policy and practice in their own region or globally. While one or two individuals had specific expertise in teaching, learning and quality enhancement policies and practice, others had broader expertise in world-class universities and rankings, national policy development, leadership and management at institutional level, private higher education providers, and internationalisation. Each team member also had access to their extensive networks of

⁹ HEFCE Policy Guide (2015). *Review of Quality Assessment* [Internet]. Available from: <http://www.hefce.ac.uk/reg/review/> [Accessed 10 August 2015].

¹⁰ Minister's Speech: 'Teaching at the Heart of the System' 1 July 2015. Available from: <http://www.gov.uk/speeches/teaching-at-the-heart-of-the-system> [Accessed 10 August 2015].

¹¹ BIS (2015) *Fulfilling our potential: teaching excellence, social mobility and student choice*.

¹² Unfortunately, it did not prove feasible to include any cases from Asia despite efforts to do so because of the difficulties of verifying data and information with internal respondents.

institutional, government and agency experts with more focused knowledge and expertise of innovations in learning within their country or region. The international team was not restricted to examples from English-speaking countries.

The precise definitions of 'innovation' and 'excellence' were determined in the context of each country or region rather than having a definition imposed from outside. The common features were that innovations needed to be proven (or show promise) and 'learning excellence' had to be focused on improved educational outcomes for students. Given the great variety of contexts, including different structures and resourcing of HE systems, interpretations of 'innovation' and 'excellence' might well differ from those used in the UK. Nonetheless, the international team confirmed both that the six UK themes that the HEA wished to explore were recognisable and relevant to challenges faced in other countries, and that there were examples of excellent and innovative practice in each theme that could be identified. While the six themes were selected with a UK audience in mind, they were framed so that they each had international resonance, addressing common challenges in different countries, albeit some themes were stronger in some countries than others, given national social and economic priorities, and historical trajectories.

The value of particular case study examples to UK institutions is also context-dependent, given different missions, student populations, resources, and focus in relation to any of the six themes. The international case studies and accompanying analyses are designed to provide an entrance point for institutions that wish to explore the international cases and associated resources in more depth, including making direct contacts with the institutions and educational leaders involved in the innovations.

The study had seven stages:

Stage one involved identifying and refining the six themes, which were agreed with the HEA as being:

- approaches to assessing learning;
- ensuring graduates are employable;
- international students and learning styles across cultures;
- recruiting new types of domestic students and the pedagogical developments required;
- improving student retention and attainment;
- engagement with the community in the co-development of relevant curricula.

Stage two involved agreeing a set of broad criteria for identifying cases of learning innovation and excellence for this study in the six theme areas. Among the criteria were: the quality of evidence about the innovation (in the form of evaluations, awards and prizes, metrics, targeted funding and national development initiatives) and, where possible, evaluation reports showing a track record of successful implementation within and across an institution or subject. In some cases the innovation had already extended beyond the individual institution or country and had been adopted by others. A further practical criterion was access to a credible local informant who could provide more detailed and specific information about the innovation.

Stage three involved the design of a template to collect broadly comparable information about each identified innovation. The template had to undergo several iterations because of structural differences between higher education systems (e.g. open access versus selective access; fee-paying versus public funding) or differences in terminology (e.g. in interpretations of retention, assessment, co-operative education and curricular co-development). These are explored further in the glossary at the end of the report. The following core questions were applied across each case in each country:

- What are the main objectives of the selected innovation? Which common challenges does it help to meet?

- What are the main characteristics of the innovation? How effective has it proven to be?
- Is the selected innovation transferable across *national* cultures?
- Is it transferable across *institutional* cultures – would it work within all UK HE providers or are there pre-requisites within an institution?
- Can the identified innovation be adopted by UK providers without external support? If not, what help is needed?

Stage four involved desk-based searches of national initiatives, reported innovations and awards, and discussions with expert in-country informants. From this exercise a list of 51 possible cases was circulated to all team members and then a final selection of 26 was agreed, giving a reasonable coverage of each theme. In addition, information was collected on eight interesting innovations that were not the subject of a full case study. For each of these situations a ‘mini case’ has been written and included in the text of this summary report.

Stage five involved collection of information and data on each case by the relevant team member, completing the template and returning these for comment and verification to the local case informants. Again, this stage was iterative as questions and comments on each case were raised by the project leaders and by other team members in an internal review process that often involved the local informants. All final versions of the cases were confirmed locally before being signed off by the team and project leaders. Cases have received a final edit for consistency and presentation in Part B of this report.

Stage six (see Sect. 3 below) involved analysis of all cases in each theme according to the categories in the template, assembling the international findings for each theme, and highlighting any local elements and perceived general relevance and value to UK.

Stage seven (see Sect. 4 and 5 below) included a meta-level analysis across themes, cases and countries to identify any general lessons of potential value to institutional leaders, practitioners and policy-makers.

3. Summary of the 26 cases across the six themes

3.a. Theme 1: Approaches to assessing learning

Methods of assessing students are under review given the differing levels of student ability and the new ways in which students learn; any revised assessment methods also have to be cost-effective given any increase in the numbers of students and the rising costs of operation of traditional higher education institutions (HEIs). Assessment processes must address a variety of skills (as well as knowledge) that will vary according to the mission, aspirations or role of the institution. Assessment must get below the surface of a student’s understanding to make sure that deep and meaningful learning has occurred. These factors mean that assessment cannot rely simply on one form of review or methodology, nor can it any longer be fixed in location, given the geographical spread of students and the many places where they learn. Assessment, therefore, also needs to take place in work locations and co-curricular settings, as well as in the classroom, since work supervisors may have to collaborate with teaching staff in reviews of performance. This section describes three cases from the US where several institutions have been pioneering new techniques of assessment.¹³ Innovations from

¹³ Note that in the United States the term ‘assessment’ is generally used to refer to student learning. In some instances, it is used synonymously with the terms ‘evaluation’ or ‘review’—for example, the ‘assessment of

the Netherlands and Australia are also described in boxes in the text. The focus is on assessment of students' learning rather than a prior assessment *for* learning.

Brandman University in the US is a private non-profit university that has developed innovative and comprehensive assessment methods for its 7,800 students; roughly half of these (46%) are low-income students, eligible to receive federal grants, called Pell Grants, for low-income students, and 43% are members of minority groups. All its on-campus courses are delivered using a blended model of face-to-face instruction and independent and collaborative online learning. It has developed two assessment approaches of student learning and one for regular evaluation of courses and programmes.

The curriculum is organised around three sets of learning outcomes: in general education, at the institutional level, and at programme level. The learning outcomes for the general education programmes are grouped under three headings: basic skills (written communication, quantitative reasoning, and oral communication); breadth requirements (in the Humanities, Natural Sciences, Social Sciences) and Liberal Education Foundations (that provide broad foundation skills to encourage critical thinking and to support learning). The institutional learning outcomes articulate five competencies that all graduates should master. They are: applied learning; innovation and creativity; civic engagement; global cultures; and integrated learning. These competencies are achieved through the core, required courses in each undergraduate major. Each programme also defines a set of learning outcomes that focuses on necessary skills for success in academic and work settings, known as 'disciplinary skills requirement'.

The assessment process includes the development of clear and assessable learning outcomes at the course and programme level and alignment of the curriculum with Course Learning Outcomes and Program Learning Outcomes (PLOs) through the use of curriculum maps. The curriculum maps denote the level of learning as introductory (I), practice (P), or mastery (M). Two software tools house the rubrics¹⁴ for grading assignments that are built and accessed by the faculty. One of them, 'LiveText', 'keeps' student work that can be accessed at a later time – if needed for professional accreditation requirements or visits, regional accreditation, or to allow faculty to do a 'deep dive' on students' work for further analysis. The five Institutional learning outcomes are assessed over a three-year period (e.g. 1-2 each year) and the General Education Team, composed of cross-disciplinary academic staff, review the data and make recommendations for improvement in curricula, signature assignments, and/or the assessment tool.

University of Notre Dame in the US is a private research university with 12,000 students. It has started an initiative under which students compile e-portfolios, which are self-assessment and development tools. These help students deepen their engagement in learning and then plan and reflect on their academic choices. Pre-advising meeting questions and mid-year and end-of-year reflection questions are incorporated and are designed to prompt students to think about their learning, and their strengths and weaknesses prior to conversations with their academic advisors. Adoption of e-portfolios is voluntary but two-thirds of students now use them.

academic programmes' or 'the assessment of institutional progress.' In two of the cases here it refers to the assessment of (not for) student learning.

¹⁴ The term is used to describe marking or scoring criteria.

e-Portfolios also now record 'badges' which capture co-curricular learning¹⁵ in addition to classroom learning. They document learning and accomplishments in areas such as service learning¹⁶ and pre-medical studies, or show awards, such as being mentioned in the 'Dean's list'.

In academic matters, the e-portfolio is also used to assess student achievement of the learning objectives of the first year of studies (the official collegiate home for first-year students, who then choose a college at the end of the first year). An assessment committee mapped these objectives onto the University's learning outcomes, and students submitted assignments to their portfolios. A random sample of student e-portfolios is generated, and marking or scoring guides have been created so that assessors can analyse the data sets. Reviewers score the samples and make recommendations for programme improvement based on their analyses of the scores.

Three of the university's five colleges have adopted e-portfolios, and engineering has used the analytical evidence to measure student engagement in learning and to predict which students are likely to drop out of the engineering college to choose other colleges. This information has led to the design of interventions to retain students at risk.

James Madison University (JMU), in the US, is a public university with 21,000 students. It has a well-developed assessment framework that is applied to student performance, evaluation of programmes and courses and to surveys of alumni. It is managed and co-ordinated by the Center for Assessment and Research Studies (CARS).

Assessment of students is carried out by CARS four times: during their orientation programme, at a mid-point in their undergraduate career (usually in their second year), when they graduate and in employment. The JMU general education programme is organised in five clusters of courses: Skills for the 21st-century, Arts and Humanities, The Natural World, Social and Cultural Processes, and Individuals within the Human Community. All students must take the three courses comprising cluster one: Skills for the 21st century and pass an information literacy competency requirement during their first year. All students are tested on their knowledge in at least one of the general education areas of Communication, History, Science, Mathematics, Socio-Cultural Development, Health and Wellness, or Fine Arts. In addition, students may complete tests measuring critical thinking, cultural knowledge, and intellectual and personal development. The assessment results are reported within JMU and to external audiences.

Twice a year, CARS co-ordinates an assessment day; a university-wide effort to collect data to assess intellectual and personal development. These data are used for academic programme assessment and improvement. CARS co-ordinates a whole range of instruments and survey results for the regular review of programmes.

Alumni are surveyed in five-year cycles, generally coinciding with a departmental programme review or external accreditation visit. The survey includes general questions common to all programmes as well as a set of questions specifically designed by major departments. This design allows programmes to

¹⁵ 'Co-curricular' refers to activities, programmes, and *learning experiences* that complement, in some way, what students are learning in their studies – that is, experiences that are connected to or mirror the academic *curriculum*.

¹⁶ Service learning is a method of teaching that combines classroom instruction with meaningful community service. This form of learning emphasises critical thinking and personal reflection while encouraging a heightened sense of community, civic engagement, and personal responsibility.

explore trends in student perceptions to corroborate and validate curricula, policy, and programmatic changes.

JMU's assessment initiatives have evolved over 25 years, and are nationally recognised as a model of scholarly rigour and pervasiveness. All programmes participate in assessment and have a designated assessment co-ordinator who serves as liaison with CARS. Assessment has taken root because of a widely shared commitment to student learning and success, the scholarly approach taken by CARS to assessment models and the support of the top administration.

Pre-entry assessment is one way of ensuring that students have the right skills and motivation to succeed. A striking example of this is shown in a Dutch university college, in Box 3.1 below.

Box 3.1.: Amsterdam University College (AUC)

Amsterdam University College (AUC) is a joint initiative of the University of Amsterdam and VU University Amsterdam. It was established in 2009 to respond to the perceived need to widen choice in Dutch higher education, create more avenues for excellence and greater opportunities for students to major in science and science-related fields in a liberal-arts and science context.

AUC offers a selective, full-time, residential three-year honours programme in liberal arts and sciences at bachelor level, taught in English. The AUC programme combines breadth of experience with depth of knowledge. Students are expected to think about the 'big questions' in science and society, and learn how to make a meaningful contribution to current debates. Substantial emphasis is placed on the sciences, including inter-disciplinary themes such as health and well-being; energy, climate and sustainability; and life, evolution, and the universe. Students are groomed for leadership and inter-cultural skills.

AUC's admissions process promotes the values of excellence and diversity, in a context where open admissions and non-selection is the national norm. The AUC process is based on consideration of the students' secondary school transcripts, recommendations from the secondary school, a motivational letter and a personal essay from the applicant. These are assembled in a dossier, which is reviewed by a first reader. After this, one or two second readers have an individual interview with the applicant. The interviews provide extra guidance to both the student and the institution as to whether the student is choosing the right study programme and is appropriately motivated.

With its strong offer in the sciences, AUC enrolls up to 50% science majors; 57% of its students are women. Gender is almost equally distributed within each major, with the Social Sciences having slightly more males, and Sciences and Humanities having slightly more females. A study of the 2009 cohort revealed that female students obtain higher grades than males and earn more credit points.

Sources: <http://www.auc.nl/about-auc>

Reumer, C. and van der Wende, M. (2010), *Excellence and Diversity: The Emergence of Selective Admission Policies in Dutch Higher Education – A Case Study on Amsterdam University College*, CSHE.15.10 (October 2010). Available from: <http://www.cshe.berkeley.edu/excellence-and-diversity-emergence-selective-admission-policies-dutch-higher-education-case-study>

Analysis

These three very different cases have one aspect in common – they have all benefitted from significant investment in developing ways of assessing the performance of students. In the case of Brandman there is quite a complex set of learning outcomes and required competencies for different stages of a

student's career. These are needed because the student population has a high proportion of mature and low-income entrants. Its unusual feature is that it has agreed three sets of learning outcomes: learning outcomes in the general education year, defined 'institutional learning outcomes' as well as course and learning programme outcomes.

The mechanics of the assessment are less intricate in the other two examples. Notre Dame's model centres on the students and asks them to use an e-portfolio to think about their interests and performance prior to a formal review with an advisor. The e-portfolio is also used to assess the performance of students in achieving their learning objectives in their first year. The e-portfolio additionally captures information on co-curricular or extra-curricular activities, making it a valuable piece of evidence for potential employers. At James Madison most of the assessment is carried out by a special academic unit and involves the student on four occasions. As at Notre Dame, in the first year the focus is on assessing achievement against agreed competencies achieved in its general education assessment processes. Later tests during a student's career seek to measure the high level skills that have been achieved.

Although many UK HEPs already use the Higher Education Achievement Report (HEAR), the case studies illustrate variants of the same approach from which the UK can learn. The cases also illustrate the adoption of regular assessments of whether desired competences are being achieved.

Australia has been investing in developing tools and resources for its academic staff; no more so than in the area of helping them to improve their assessment practices. Box 3.2 describes two of the products that have emerged from nationally funded research.

Box 3.2: Monash University (www.monash.edu)

Improving assessment: understanding educational decision-making in practice

This innovation supports university teachers and course teams in making decisions about assessment. It is not single-discipline-based and has wide applicability across multiple disciplines.

Monash University led the innovation, in partnership with the University of Queensland, University of Technology, Sydney and the University of Wollongong. The project was financially supported by the Australian Office for Learning and Teaching.

This project produced the following resources for use by teachers:

1. An Assessment Design Decisions Framework that identifies six broad areas for academic staff to consider when designing assessment:
 - purposes of assessment;
 - contexts;
 - feedback processes;
 - tasks;
 - learner outcomes (improving assessment by understanding educational decision making in practice);
 - interactions.
2. A guide to the Assessment Design Decisions Framework that provides further prompts, questions, resources and advice from educators. For example, assessment activities exist for very different purposes all of which are important. However, any act of assessment might emphasise one purpose more than others. The guide provides educator experiences and good practices to help ensure that this narrowness is avoided and that the broader purposes of assessment are taken into account in assessment design. Similar good practice examples

- are provided under the other five broad categories treated within the Decisions Framework.
3. A dedicated website (www.assessmentdecisions.org) containing all the innovation resources that supports university educators in designing good assessment and providing a continuing professional learning network.

Main contact: Associate Professor Margaret Bearman, Faculty of Medicine, Nursing and Health Sciences, Monash University (margaret.bearman@monash.edu).

3.b. Theme 2: Ensuring students are employable

All the case study institutions have registered external concerns about the employability of their graduates; since many students are considered by employers to be leaving the university without the transferable skills that are needed. Curricula are often thought to be out-dated and irrelevant to the 'world of work'. Several governments have followed the UK by publishing statistical surveys of employment after graduation in the hope that poor results will shame institutions to take action.¹⁷ High scores will of course be used as a marketing tool in those countries where universities compete for students.

Many HEIs attempt to give their students practical skills and measure their attainment in various ways (graduate employment, etc.). Collaboration with employers and the community also provides valuable experience and skills as well as providing support to the community.

In their search for ways of meeting these challenges, universities have adopted a wide range of initiatives, and the international cases in this report show a variety of approaches from six different countries – Burkina Faso, Canada, Denmark, the Netherlands, South Africa, and the US.

In Burkina Faso, the International Institute for Water and Environmental Engineering (2iE) is a product of donor-backing and international collaboration between 14 West African countries. It has 2,000 students from 21 countries. The Institute was created in 1969 to remedy the shortage of professional engineers with a broad understanding of entrepreneurial skills. Its curricula are based on the development of 25 target skills, are compatible with the European Credit Transfer System and are accredited by the French engineering accreditation Commission (CTI).

Features of the Institute include:

- up to 30% of a student's curriculum is devoted to management, project management, law, accountancy, entrepreneurship and subjects linked to innovation;
- a number of activities support this, such as a junior consultancy company, a company incubator and entrepreneurship competitions;
- a database has been developed with over 400 company and organisational partners who work with 2iE in a variety of ways such as scholarships, training and research and development;
- a network of mentors is drawn from the alumni who agree to support and advise current students.

2iE has succeeded in its aim of making its graduates employable, since over the period 2004 to 2012 the average employment rate after six months was 98%, which compares well with the 86% employment after one year for the French *grandes écoles* (the elite professional schools).

The University of Waterloo in Canada has a strategic plan – in which it states its aim to be “the world leading university in co-op education”¹⁸ – which involves several long placements of students with

¹⁷ Australia, Malaysia, and Sri Lanka to name just three.

¹⁸ Taken from <https://uwaterloo.ca/strategic-plan-action/experiential-education>

employers during the course of their degree studies as part of its strategic commitment to experiential education. It has been a feature of the University since it was founded in 1957 and the processes and structures of the University have been developed to support it. However involvement with co-operative (co-op) education is voluntary; there is an extra fee for students taking part; and the duration of the degree course is longer. Last year, 63% of students participated in four to six 'work terms' with employers of four months each during their studies. Students are paid by their employers during these work terms.

One distinctive feature is that the University has built up an impressive set of support processes for its co-op students that includes:

- a mandatory short course at the outset to help them prepare for their job search with the 5,200 available employers;
- a suite of professional development courses, some of which are mandatory;
- a web site containing details of all the jobs on offer, from which the students choose;
- personal support from an academic advisor during the work term;
- help from a careers advisor during all the work terms and afterwards;
- formal reporting by the student at the end of each work term, which is marked by the student's department;
- a performance evaluation on the student by the employer – 92% of employers rated their students as either very good, or outstanding.

The extra cost of co-op education is met by the fee charged to students, which they can recover from their salary. The full case study (Part B) includes an analysis of the graduation rates and salaries earned by co-op students showing that these substantially exceed those earned by non-co-op students.

At Roskilde University in Denmark, students work on inter-disciplinary projects within a framework of what they call 'Problem-oriented project learning' (PPL), somewhat similar to problem-based learning (PBL). Both concepts advocate that students work with carefully selected problems that require them to apply domain-specific and domain-general knowledge, self-directed learning strategies, and team participation skills. In PPL, however, there is a stronger emphasis on the students defining problems of their own choice, as well as on aligning study with research. Roskilde's aim is that its students will:

- learn to work across disciplines and think outside the box;
- apply scientific methods to solve the problems of the surrounding worlds;
- identify and solve problems independently;
- manage projects and collaborate with each other.

The University's physical layout supports this philosophy as it consists mostly of seminar rooms with movable furniture. To facilitate group work, a group of 110 students is affiliated to a 'house' (e.g. a floor or limited area in a University building), which provides seminar rooms and space for group work and social activities. The houses include the offices of one administrative staff and two to six academic staff, computers and copying facilities. The 110 students are each given a key to their house, and collectively take responsibility for the facilities. Each group of 110 students designs its group project, agrees the problem it wants to investigate and studies it during the semester. The same group of 110 students works on a new project the following semester. Since the University considers the model to be challenging for some new and international students, those who seek help are tutored by senior students.

Maastricht University in the Netherlands has used problem-based learning (PBL) since its foundation in 1974, and it is now applied in all faculties. Its distinctive features are that it is applied universally to all students, including all the international students from 108 countries, that PBL is taught in English, and

that the University has developed related ways of collaborating with external partners in a 'Knowledge Axis' to support the local economy.

PBL differs between disciplines in the way that it is used. It has also been copied widely in other countries. At Maastricht it is now a fundamental component of learning and teaching and all curricula are developed with a team approach by staff who are committed to the model. The initial development of the PBL approach is labour intensive and much staff development in PBL was required in the early days and is still mandatory. One aim of PBL is to train students for global careers since inter-cultural competencies are developed by the curriculum and the way it is used.

Nelson Mandela Metropolitan University (NMMU) in South Africa aims to ensure that its graduates have the skills and entrepreneurial drive that will enable them to be employed or self-employed and to contribute to the economic development of the region. NMMU offers both general and professionally orientated university programmes as well as technologically and career-oriented programmes from entrance level (higher certificate) through to doctoral research level (PhD). The students at NMMU come mainly from deprived catchment areas and are mostly first-generation university students. At the same time, unemployment levels in the immediate region are among the highest in the country.

NMMU follows a two-pronged approach to achieve its goals: experiential learning (e.g. service learning, internships, and work-based placements) in which over two-thirds of students participate, and co-curricular activities outside the classroom that contribute to defined and approved learning outcomes and graduate attributes.¹⁹ Undertaking these activities is voluntary but currently 43% of students participate. NMMU has developed a system of recording these external activities called a Co-Curricular Record (CCR), similar to an e-portfolio, which students complete on the web.

Service learning and voluntary external activity in the community are encouraged and are recorded on a student's CCR. In some faculties there are opportunities for work placements with employers, who as at Waterloo, interview and select student candidates. Extra staff have had to be employed to deal with the work involved in supervising experiential learning and the operation of the CCR. Students are very supportive of the two initiatives and the full case study records evidence that they have increased students' employability.

The box below shows a large scale European model of compulsory co-op education in Ireland with a very high proportion of international placements.

¹⁹ This definition of experiential learning does not include classroom-based activities, as in the UK.

Box 3.3.: University of Limerick, Cooperative Education programme (<http://www3.ul.ie/coop/>)

The Cooperative Education programme (Coop) at the University of Limerick (UL) is a core element of all undergraduate degrees. It is formal, compulsory and integrated into all undergraduate degrees. As part of the programme, all students, regardless of discipline, undertake relevant work experience, normally of eight months duration. As a result, placement levels in their first job are consistently high, ranging between 97% and 100%.

About 2,000 students are placed on Coop every year, with about 30% placed internationally, primarily in Europe, North America and Asia. This makes it one of the largest placement programmes in Europe.

Cooperative Education gives students the chance to experience a real work environment before they graduate and to develop the skills they will need to achieve their long-term career goals. For many students, the opportunity to do Coop is one of the main reasons they choose to come to UL over other universities.

Some 1,600 employers participate in the programme annually and about 75% of these employers also employ UL graduates. For many employers, their involvement in the programme represents the first point of contact with the University and over 700 employers visit the campus every year.

The Coop programme provides employers with an opportunity to both undertake projects or other work by hiring additional temporary resources without adding a permanent payroll cost. They are able to vet potential graduates' first-hand over an extended period in a real work environment.

There are normally three elements to the assessment of Coop placements, as follows:

A **Student Visit Form** is completed by the employer/supervisor during the Academic Visit; it gives the employer's evaluation of the placement to date. A Telephone Evaluation form is sometimes used when evaluating international placements.

The Final Employer Evaluation is sent to the employer/supervisor towards the end of the placement to assess the student's performance over the entire duration of the placement.

The **Coop Report**, written by all students, must follow a set structure and is graded on a pass/fail basis. In addition, all engineering students must keep a written record of their training in a logbook. (See: <http://www3.ul.ie/coop/coop/faculty/reportguidelines.shtml>)

Franklin W. Olin College of Engineering (Olin) in the US is a very small private college in Massachusetts that has developed a totally new approach to the education of engineering students, which its founders felt needed reform. The trustees of the Franklin W. Olin Foundation thought that Science, Technology, Engineering and Mathematics (STEM) education in the US was failing in its curriculum and teaching and learning methods. Thus, Olin's curriculum combines engineering with entrepreneurship (similar to 2iE), but also adds Humanities. Every Olin student must start and run a business to graduate, and must complete a year-long senior design project sponsored by industry. The students must also acquire leadership skills and ethical competencies through the way that Social Sciences and Humanities courses are taught. For example, all students are required to present some aspect of their academic work in a public setting at the end of every semester.

Olin has developed nine learning outcomes, or 'Olin competencies', which it seeks to inculcate in every student, and it organises learning around project-based activities performed by students working in teams. There are no academic departments and no tenure for staff so that the way is open to having several teachers from different disciplines providing integrated inter-disciplinary courses and projects. The latter increase in complexity and scale throughout the course. The full case study describes how students are involved in the design and delivery of their learning experiences.

The results of Olin's approach are evident: 97% of all its alumni were either employed (in a company or a business they had started themselves) or were at graduate school. Its six-year graduation rate is 95% for all three engineering degrees, and between 40% and 50% of its students are female, compared with 20% nationally.

Analysis

Project-focused and work-focused learning experiences directly and positively affect students' employability. PBL or the PPL variant is already widely used in the UK to empower students, with many of the key attributes that employers are seeking, but the scale of their application at Waterloo or Limerick is notable. Student involvement in projects, either individually or in groups, gives them experience of teamwork, project management and leadership. This can be enhanced further if they design their own project as at Roskilde or get involved with academic staff in curriculum design and real projects as at Olin.

Another key point is the benefit that comes with an inter-disciplinary approach. 2iE and Olin have built this into the curricula for their engineering students with beneficial results in terms of the competencies that students gain.

The University of Waterloo's approach (like Limerick's) involves immersion of its students in the world of work during their studies enabling them to graduate with genuine understanding of the demands of employers and the skills they require. NMMU's approach is to manage students' external activities with a more limited range of approved options but with one that encourages the students to build up an electronic portfolio. At the University of Limerick the compulsory coop programme has resulted in almost 100% employability.

Helping students with their external or co-curricular activities is also seen as a good way of improving their chances of employment. Another approach is adopted at the Catholic University of Louvain (UCL) and is described in Box 3.4 below:

Box 3.4.: Ensuring graduates are employable through a student-run, extracurricular activity

Catholic University of Louvain (UCL) students are encouraged to engage in community service and projects as part of small residential groups. Students' residences at UCL include apartments (called '*kots*'), which comprise about ten rooms each and a shared space. A portion of these *kots* is reserved for students with a specific project: these are the '*kots-à-projet*'.

Some of the projects can be whimsical, but most are focused on serious topics such as human rights. The projects could be related to the students' degrees or focused on local or global concerns. Some *kots* also engage the local community. These activities contribute to the development of a range of soft skills (leadership, group work, project management, conflict resolution, etc.) and the University views them as an important way of promoting student engagement and citizenship and contributing to the town's liveliness.

This is a student-run programme: they select the projects and organise an annual fair to advertise their activities, recruit other students and sensitise them to local or global issues. The students are unpaid volunteers and receive no academic credits for their involvement. The University has established rules to prevent any undue political or commercial influence in the choice of the projects. The *kots-à-projet* are autonomous but are evaluated yearly by a University committee that includes 50% staff and 50% students. Their accounts are scrutinised to ensure that the commitment to the non-profit charter has been upheld. No overall evaluation of the scheme has been conducted but Belgian employers appreciate the soft skills developed by the students who have been part of a '*kot-a-*

projet.

There has been no external funding to support this initiative. Most *kots-à-projet* receive a budget either from the University or from student associations and all are not-for profit. The most important (and unusually high) annual budget (100 000 EUR) goes to the oldest *kot* that assists civil engineering graduates in their search for a first job by training them in interviewing skills, organising visits to industry and an annual job fair.

Today, this project is active in three of the six UCL campuses. The idea has spread to other Belgian universities and some French campuses.

Main contact and source of information: Didier Lambert, Vice Rector for Student Affairs (didier.lambert@uclouvain.be).

One striking feature of all the five main cases is that they are all in relatively new institutions (under 50 years old) and in some cases such as Olin, 2iE, and Waterloo the innovative approaches were built into the ethos of the institution from the start. This has not been a barrier to the transferability of the innovations concerned, since in all these cases other more mature universities have been able to import those ideas fitting them into their existing strategy and structures and providing the essential staff development as a first step.

3.c. Theme 3: International students and learning styles across cultures

Current research and projections show an expected increase in the numbers of students travelling to study at universities outside their home country.²⁰ Already in Australia over 20% of on-shore students are from overseas and, in some disciplines, international students vastly outnumber domestic ones, particularly at Masters level. As in the UK, many universities in competitor countries such as the US and Australia deliver their programmes offshore (transnational education or TNE). Consequently most of the students do not have English (the language of instruction) as their first language, and many live in a culture quite different from that of the higher education provider.

The issues associated with delivering a quality education to international students have been a major concern of the government and institutions in Australia for at least 20 years and two of the three cases in this section come from there. The third case is from Hungary. Even though the US has the largest share of the international student market, the numbers represent only 4% of students within their system.²¹

There are significant reputational and financial risks of international students graduating with unhappy memories of their years in the University. In order to help institutions to be aware of this risk, i-graduate has developed its International Student Barometer survey. In general, i-graduate reports that scores of about 80% satisfaction emerge from exit surveys of such students in most countries, but these do not delve into any level of detail about learning and teaching issues. Nevertheless, many international students can face great learning difficulties both on a UK campus and when studying foreign course materials at home under a TNE partnership.

²⁰ BIS (2013) International Education: global growth and prosperity, and, British Council (2012) The shape of things to come: higher education, global trends and emerging opportunities to 2020.

²¹ Open Doors, 2013-14 data, from the Institute of International Education, See: <http://www.iie.org/Research-and-Publications/Open-Doors/Data/International-Students/Infographic>

Curtin University in Australia has 48,000 students of whom 32% are international; they are based on eight campuses in Western Australia, one in Malaysia and one in Singapore. Specifically, the innovation aimed to apply a pre-existing Framework of Quality Principles²² developed for transnational delivery to Australian transnational teaching and learning practice. However, these principles were extended to form three relevant sets: ten relating to the curriculum, 21 to pedagogy, and 33 to the welfare of the academic staff involved.

The approach overall consisted of providing teachers with this framework of principles for guidance and then employing action learning (AL) methods to empower and enable them to formulate and introduce helpful changes into their teaching. While some of the principles required tailoring to particular national circumstances in the countries where Curtin's campuses operated, the point of the innovation was to provide a framework for discussion, teacher self-analysis and the improvement of quality in teaching and learning.

A professional development workshop is at the core of the innovation. Generally run over one day on all the Curtin campuses, the workshop provides an introduction to the development of the Quality Principles followed by a series of activities: sharing experiences and perspectives on TNE delivery; mapping principles to practice in teaching and learning; and development of action learning plans to implement and evaluate the principles. All these aim to help participants understand how to apply and embed the principles within their particular contexts.

The innovation was partly funded by the Australian Office of Learning and Teaching and the resulting documentation includes a handbook, details of the workshop, and ten case studies showing how the principles have been applied.

As Box 3.5 shows a similar approach has been developed at the University of Lausanne by providing teaching staff with a tool kit to help them to internationalise the curriculum.

Box 3.5.: University of Lausanne, Switzerland – internationalisation of the curriculum

About a third of students at the University of Lausanne are domiciled outside Switzerland. The goal of this initiative is to promote the internationalisation of the curriculum by leveraging the international students' presence in the classrooms and encouraging greater participation in classroom activities.

The approach aims to create a social environment that is welcoming of international students in order to develop the multicultural skills of all students as well as active and in-depth learning.

A tool kit has been developed that includes a variety of 'best practices' contributing to the creation of an environment in which international students feel at ease in participating in classroom activities. These include inviting guest lecturers to speak about inter-cultural issues, workshop ideas, how teachers can recognise different learning styles and the cultural ways that students participate in class, how to ask questions that would encourage international students to answer, etc. These best practices and the workshop instructions are public and can be used by any academic staff. A series of workshops was organised to engage and assist teachers in including consideration of diversity into their classrooms (cf. Diversity Tool Box).

The student evaluation includes questions about their social and cultural integration and the development of their intercultural skills.

²² See <http://www.olt.gov.au/resource-library?text=offshore%20programs>

Sources:

Diversity Tool Box: <http://www.unil.ch/diversite/en/home/menuintst/ateliers-diversite.html>

Dietz, J. and Wäger, D. (2012) "Best practices" pour une classe culturellement diverse: Travailler avec et tirer parti de la diversité des étudiants. Centre de soutien à l'enseignement. University of Lausanne (UNIL) http://www.unil.ch/diversite/files/live/sites/diversite/files/shared/Diversity/Best_practices_J_Dietz_workshop.pdf

http://www.unil.ch/riset/home/menuguid/vitrine-de-projets.html#p_118

Central European University (CEU), in Hungary, is a postgraduate, research-intensive institution with 1,400 students, specialising in the Social Sciences, Humanities, Business, Law, and Public Policy. It was established in 1991 with support from the Soros Foundation after the fall of the Berlin Wall. It is committed to promoting the values of open society and self-reflective critical thinking in Central Eastern Europe and in other parts of the world that are experiencing 'emerging democracy'.

CEU describes itself as "one of the most densely international universities in the world."²³ All CEU students are international and CEU is a university that is international by design since the international character of the University is central to every decision that is made, whether it is about new study programmes or the content of courses. Thus, all courses must integrate a comparative, regional dimension (i.e. Central Eastern Europe) in a multi-disciplinary way. Its research must tackle real issues in the region.

To ensure that regional issues are set in their global context, CEU recruits internationally for both academic and administrative staff positions. It aims, for example, to recruit African academics to teach courses or modules relating to Africa. CEU is planning to restructure itself academically into inter-disciplinary teams that will work on four broad, predefined themes (social mind sets, governance, inequalities and social justice, and energy and society). They will conduct joint research, joint teaching, and joint civic activities.

The University of Melbourne in Australia has 14,000 international students on its sole campus, within a total of 55,000 students. It has developed strategies to enhance the learning of the international students summarised in a guide.

The University took part in a nationally funded project that explored how peer interaction can be designed and used within the teaching and learning environment to enhance interaction among students from diverse cultural and linguistic backgrounds so as to achieve improved educational and social outcomes. The benefits of this increased peer interaction were seen as:

- increased awareness and understanding of different perspectives amongst the student groups;
- enhanced preparation for the workplace;
- improved English language skills of those international students requesting it;
- a greater sense of belonging among international students.

Academic staff were helped to incorporate peer interaction into the design of their subject and a *Guide for Academics* was produced that offered practical suggestions for enhancing practice, illustrated by multiple specific examples. These covered such matters as introductions and 'ice-breakers' in the first session; devising problem-based learning tasks with interaction embedded in the curricula; group

²³ See the CEU website at <http://www.ceu.edu/about>

projects, with knowledge of different cultures as a core component of the project; using self-assessment and peer-assessment; and initiatives specifically designed to build learning communities.

The University aims to help its graduates develop attributes of global competence and global citizenship, allowing them to work in linguistically and culturally diverse situations anywhere in the world. Fostering engagement between Australian and international students is critical to achieving this objective.

The cases illustrate how some academic staff require support in improving the effectiveness of their interactions with international students. At Northeastern University in the US, the Global Student Success centre is a resource for both international students and staff.

Box 3.6.: Northeastern University – global student success

(<http://www.northeastern.edu> and <http://www.cps.neu.edu/gss>)

Northeastern University, in Boston Massachusetts (US) is a private research university with a total enrolment of 24,000 students, including 9,000 international students. It is currently ranked #9 by US News among the nation's higher education institutions for its percentage of international students.

Global Student Success (GSS) is a resource centre for students, faculty, and staff to support the success of international students. It is housed within NU Global in Northeastern University' College of Professional Studies. GSS services are grounded in research and best practices with faculty expertise in second language writing, language assessments, technology, linguistics, cultural competency, among others.

One of the key GSS services is its International Tutoring Center (ITC), which provides those international students that need it with comprehensive English language and academic support. ITC tutorials are 50 minutes long, and include individual, group, and online appointments. The tutorials cover writing, conversation, pronunciation, reading, Test of English as a Foreign Language (TOEFL), and career preparation. In 2014, approximately 4,500 student appointments were made for tutoring. ITC also runs a series of language and culture workshops that focus on topics such as improving skills in paraphrasing and summarising, making small talk, and presentation skills.

Furthermore, Global Student Success administers an online English language assessment to international students who have been admitted to the University. Results of the assessment are used to provide additional English language support to students.

Finally, GSS provides professional development opportunities for faculty and staff through monthly webinars as well as workshops. Designed to enhance global understanding and inter-cultural skills, the webinars cover areas such as language and academics, advising and general support, culture, and global education.

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Analysis

Three very different approaches to this theme have been described. The case of the Central European University cannot be replicated readily, since it is a creature of its time after the fall of the Berlin Wall and is based on the promotion of democratic ideals and values in the region. However, the model is what many other traditional universities are seeking (and some have achieved) and that is full

“internationalisation at home”²⁴ with international students, international staff and curricula that are sensitive to cultural concerns and relevant internationally. Since the students are a uniquely international group they are readily employable as graduates in the European marketplace.

The other two Australian examples contain more potential for the UK as both the projects have produced a wealth of readily available materials and case studies so that the innovations can be understood and possibly adapted by HEPs. The core of the Curtin case is staff development through action learning using the developed materials to sensitise those who ‘teach to the problem’ of poor comprehension by some students and facilitate the application of the materials. A similar approach has been adopted at Melbourne that presents academic staff with a set of principles and encourages them to invest time applying them to their own courses. However, the latter case makes it clear that uptake of the innovation across the University has been patchy so far. It is only now being incorporated into the University’s learning and teaching and internationalisation strategies, even though it matches its aims precisely. Both studies indicate that without sustained and focused leadership, an innovation that requires change from many staff is unlikely to take root across the board.

3.d. Theme 4: Recruiting new types of domestic student and the pedagogical developments required

One of the challenges of greater access to higher education is devising pedagogical approaches that cater for the wider range of talents and learning capabilities among entering cohorts of students. Institutions plan to achieve desirable retention and attainment rates in order to meet the expectations of all their students and maintain the institution’s reputation and financial sustainability. At a time when some governments are echoing the UK, and publishing data on the social and economic diversity of entering students and their attrition or completion rates, institutional reputations are at risk. Many young lives could be damaged by a failure to complete their programmes and the University will be using its resources very inefficiently and ineffectively if it does not address retention and success issues.

The strategic responses of universities to these challenges are often guided by the local context but there are common themes and solutions that are transferable elsewhere. The seven innovations in this section are drawn from four countries: Australia, Colombia, France, and the US. They overlap in some cases with those in the following section (e) that describes innovations aimed at improving retention and attainment. The key difference is that in this section the institution has targeted under-represented groups and has developed activities specifically for them. In section (e) the innovations are applied to the standard entering cohorts, but the activities described there do have many similarities to those in this section.

The Institut de Sciences Politiques (Sciences Po) is part of a group of highly selective institutions in France, along with the *grande écoles*. As opposed to the universities, institutions in this group receive a higher level of funding and are rather small, while the universities enrol large numbers of students, receive less funding per student and are duty-bound to admit any and all students who hold a *baccalauréat*. Sciences Po enrolls 13,000 students, 82% of whom come from affluent families.

Sciences Po determined to widen its source of applicants and recruit more from financially and educationally disadvantaged backgrounds with an affirmative action programme. It embarked on a

²⁴ See the definition by the International Association of Universities at <http://www.iau-aiu.net/content/internationalization-home-curriculum-and-learning-outcomes>. This suggests that it “offers an alternative internationalization path to overcome the limitations inherent in international mobility schemes”.

partnership with a select set of *lycées* (from under-privileged areas all over France and from overseas *départments* such as Réunion) that are entrusted with the responsibility of preparing the students and carrying out a first round of selection. The *lycées* offer weekly workshops to any student interested in attending Sciences Po. These workshops prepare the students for the entrance examination. The *lycées* are then responsible for organising the first examination round. Those who pass this will come to Sciences Po for an oral examination that will test their intellectual potential and interest in political science.

The students are mainstreamed from the beginning, and no additional courses are offered, but students can ask for extra support, for example, to have an assigned peer tutor (first semester) and a mentor (second and fourth years). Those who need extra assistance can find it at the equal opportunity office. Their progression is similar to that of their peers, although there is a slightly higher number who repeat the first year. This concerns more particularly those students who are far away from their families.

The students find a first job as easily as their more privileged peers and they get slightly higher salaries because they tend to go into the private sector, as compared to the latter group who tend to favour the public sector. The proportion of students from high socio-economic groups is now down to about 68% – much more balanced than it was before this initiative was launched.

The University of Queensland (UQ) in Australia is ranked in the world's Top 100 and has over 50,000 students. Its School of Chemistry has very large enrolments on some first year courses, which include Chemistry students and service teaching for students from Pharmacy, Dentistry and Engineering. The pilot work for the innovation described below took place in the first level Chemistry course, a core service course with between 35-40 programmes of enrolment from multiple faculties at UQ.

The main innovation involves the use of the web-based interactive Collaborative Assessment (iCAS) to generate and manage 'Interdisciplinary Scenario-Inquiry Tasks' (IS-ITs). IS-ITs are collaborative active learning tasks set in inter-disciplinary contexts designed for very large classes. Students work in groups of four and seek to resolve the problems, which may have no neat answer and thus invite an open enquiry approach. Other features of the innovation are:

- students are asked to analyse the work of their peers and give them formative feedback;
- using this system, students can choose which groups to join and which tasks to tackle;
- student groups must develop information files integrating their responses to the task;
- a facilitation team is available that includes the course co-ordinator, IT support and teaching assistants;
- work allocation and reward systems for academic staff have been revised to accommodate the extra time that the innovation requires.

The project is very well-documented with a handbook and other resources available on the web (see the full case study for references). As a result, it has been adopted by other universities in Australia.

Western Governors University (WGU) in the US is a non-profit fully online university founded in 1997 and supported by 19 US state governors. It was created to expand access to working adult students who have some college experience. Students progress through their coursework independently (but with personalised faculty support) and at their own pace. Course materials are delivered through technologies that can be accessed through the Internet at any time and from any place. The special features of WGU are:

- all courses are competency based and are designed by 'program councils', made up of external industry experts and academic staff;

- high-level competencies are agreed for each field and then mapped to topics in the degree programmes;
- the academic staff functions are unbundled with the tasks of teaching, grading and assessing, tutoring and academic support assigned to different groups of professionals;
- all student applicants are advised by an enrolment counsellor and are given a readiness assessment test (the 10-15% who fail are counselled towards other career options). Successful ones undergo an orientation course that commits them to a weekly study plan;
- each student has two mentors; one is another student with whom the student has weekly meetings and the other is a course mentor, similar to a traditional tutor.

WGU's competency units have been translated into credit hours to satisfy requirements for students to receive federal financial aid and its programmes are fully accredited. It has graduation rates that are 10% higher than national figures for students in the same age group. In 2008, WGU's retention from first to second year was 67%; in 2014 it was 79%. In a poll conducted for the University by Harris Polling, 96% of employers said that the graduates were well prepared for their jobs.

The Community College of Aurora (CCA) in the US has 12,000 students, of whom 60% are African-American, Hispanics, and Native Americans. These students are likely to come from low-performing schools and to have work or family responsibilities. The College's approach to dealing with all students is based on the use of an *Equity Scorecard*. This is a diagnostic tool that helps teachers remove the blockages and barriers to equity in the way that they teach or interact with students. It is based on research showing that African American, Latino and Native American students experience higher education differently from white students and that practitioners need to be aware of this as well as the impact of their own attitudes and practices on student learning and success. It is in use by more than 50 institutions in the US.

In the course of using the Scorecard, faculty and staff develop expertise on institutional areas of inequity and how institutional policies and practices, as well as their own teaching, may be contributing to them. The process involves a cycle of action inquiry, including identification of gaps in educational outcomes among these historically under-served groups, inquiry into instructional and academic support practices, purposeful changes in practices based on the results of systematic inquiry, and evaluation of the effectiveness of any policy or process changes made.

The Scorecard has been tested in the mathematics department where there was a large gap in the performance of African-American and Hispanic students. It was also tested in academic advisory services. Connected reforms included the redesign of courses, awareness training, and staff development programmes, provision of data on student performance, changes to the processes in the academic affairs division and student support services, recruitment of more diverse staff, and the addition of equity work to teaching staff duties. A redesigned introductory algebra course saw the success rate for African American students rise from 40% to 53.6%, from 48.1% to 70.3% for Hispanics and from 28.6% to 72.7% for Native Americans.

The Equity Scorecard is freely available on the Internet and has been used by several other universities and colleges; it could be adapted for use in the UK.²⁵

San Francisco State University and City College of San Francisco in the US formed a partnership in 2007 under the Metro Academies Program (Metro), which redesigned the first two years of the college experience to sharply improve college completion and academic success. This initiative addresses an

²⁵ See: http://cue.usc.edu/our_tools/the_equity_scorecard.html.

important national and state problem of the high drop-out rate of under-represented students: more than 60% of under-represented students drop out of California community colleges before they graduate or transfer. Metro's recruitment focuses on high schools and community based organisations that serve students who are low-income, under-represented, and/or first-generation college-goers. Approximately seven out of ten Metro students are from under-represented groups, and 80% to 90% enter college needing remedial support. The programme is based on the creation of 'academies', each of which serves as a 'school within a school' for up to 140 students – 70 first year students and 70 continuing second year students. Each academy has a broad career or topic theme, such as the Metro Academy of Health or Metro Academy of Science and is located within the College or School of the institution. There are several elements to the Metro programme:

- a guided pathway of general education courses, in which students take two general education classes together each semester, cohort-style, over four semesters;
- courses designed to build academic skills as well as helping students think about real-world problems in their field of interest.
- student services based in the Metro classroom, including academic counselling, financial aid advising, and tutoring;
- forty-five hours of professional development for the staff involved.

As a result of the Metro scheme, at CCSF, 63% of the students from Metro Health completed their associate degrees in three years, compared to 13% of the comparison group. At San Francisco State University, 76% of students persisted in their courses after three years (6 semesters) compared with 64% in a control group. Nearly two-thirds of Metro students graduate one year earlier than before and save themselves a year's tuition fee and reduce the costs to the University.

Uniminuto University, Colombia: due to the low quality of public secondary education in Colombia, a large proportion of incoming university students are academically unprepared and lack the drive to study, especially low-income youths who did not get the opportunity of attending a better-quality private high school. As a result, dropout rates are around 40% on average for each new cohort of students. Uniminuto was created in 1990, with the explicit purpose of offering good-quality education to young people from low-income families living in disadvantaged areas.

The University has developed what it calls the Integrated Focus Model, which offers comprehensive support to students throughout their time in the University. This involves:

- a life project course that all students are required to take during their first year helps them to set personal and professional goals;
- academic counselling entails seven modalities: (i) monitoring academic results before the first mid-term exam, (ii) monitoring of unusual absence and low grades, (iii) tutoring and mentorship, (iv) academic strengthening workshops, (v) counselling on course selection and attendance and career counselling more generally, (vi) counselling in case of conflict with professors, and (vii) individualised study contracts where students commit to applying themselves to their studies;
- psychological support with counselling at various points that often involves parents;
- financial support with loans or scholarships;
- remedial courses in Mathematics and Written and Oral Communications.

Uniminuto has made clear but slow progress as a result of the Integrated Focus Model. At the end of the first semester of the academic year 2009-10 the dropout rate was 31.1%; for the first semester of academic year 2014-15, it had gone down to 11.1%.

Macquarie University in Australia has 38,000 students of whom 29% are international. Given the changing patterns of student engagement in higher education, Macquarie is actively exploring the use

of communications technology to facilitate collaborative interactions between staff and students who are increasingly distributed and dislocated.

The School of Education has invested in blended synchronous learning (BSL) involving live classrooms that include students in remote locations interacting in real time. Learning is facilitated by the use of various forms of televisual, digital, and online tools such that students learn from instructors, colleagues, or peers in real time, but not necessarily in person. The aim has been to provide tools to assist teachers in using ICT to create blended synchronous situations.

Working with other university partners, the School of Education at Macquarie developed seven case studies of different applications of BSL in different disciplines and contexts. From these the *BSL Handbook* was developed as well as a *BSL Design Framework*. These publications have been widely distributed and applied in Australia.

Using BSL requires certain prerequisites which include appropriate technical support, teaching assistance, professional development for the staff concerned and pre-equipped learning and teaching spaces. Additionally, adequate workload allowance needs to be provided to the teachers teaching in blended synchronous mode. Teachers' willingness to upgrade their skills may be a barrier. To that extent, teacher practice, development and support should be the primary focus of any blended synchronous learning initiatives.

Evaluations of the use of BSL so far indicate that both remote and face-to-face students valued the flexibility that blended synchronous learning afforded, and in many cases felt that it led to an enhanced sense of community. However the initiative has only been fully developed in one school of the University and has yet to be adopted more widely.

Analysis

The solutions to the challenge of supporting new types of students vary in type, scope and levels of complexity; there are the high tech models of Queensland and WGU with their basis in IT-based solutions and the immediate flexible feedback that it allows. Then the blended learning model at Macquarie helps to bring together students who are scattered throughout a community. Another model centres on staff development with a tool such as the Equity Scorecard at Aurora to alert teaching staff to their attitudes and teaching styles vis-à-vis the needs of their students. Finally, there are two comprehensive packages of support of various kinds for students at Uniminuto and the Metro Program in San Francisco. These provide help for students beyond the first year of their studies – throughout their career at Uniminuto and for two years in Metro.

The strategy adopted by Sciences Po takes place before the student arrives and is much more substantial than the more common secondary schools liaison or linkage programmes, since it is nationwide and demands time in selecting the *lycées* and preparing the students that are finally selected to take part. As a result, they require limited extra ongoing support on campus.

While meeting the needs of students is at the heart of these solutions, a key component is staff development either in using the specific tools and IT systems or in amending their curriculum and teaching methods. Several of the cases describe formal programmes of training for staff – even quantified at 45 hours in one example. Recognition that innovation, and adapting to new methods, takes time (and may need adjustment to workloads) is also noted in the cases and is a key issue universally. Finally, the studies record a need for some mechanisms of reward and recognition of teachers' investment in new teaching and learning practice.

One interesting consequence of these innovations is the improved financial position for the institutions and the students. The cases have shown that lower drop-out rates and improved retention lead to lower costs per graduate as well as savings in tuition fees for students.

3.e. Theme 5: Improving student retention and attainment

Universities that have a policy of widening access to previously under-represented groups often need to develop strategies to manage any possible fall in the average retention and graduation rates. Such decreased retention and graduation rates may be attributable to the fact that these 'new types of students' may have left the secondary sector less well prepared for university level study than many others. Added to this are the burdens that are common to all students of having multiple other calls on their time and resources such as earning money or caring responsibilities. Universities wishing to attract and serve these students need to invest more resources and adjust their systems and teaching methodologies to increase support and flexibility so that these students can succeed.

Other reasons for poor performance reported in the case studies are that the existing curriculum and teaching methods that have been developed for 'traditional students' fail to meet the needs of a wider ability range of students and a reliance on large classes and lectures can make effective learning more difficult.

This section describes the activities of five universities that are meeting these challenges by using methods that are innovative in their context and may have relevance and value for the UK. As usual they come from around the globe – two are from South Africa, one is based in Chile, one is from Australia, and one is from the US. A mini case from the US describes the contribution that using 'big data' can make to improving retention.

The University of Bio Bio in Chile is one of the country's nine public universities. It has 13,000 students, 44% of whom are from families with no higher education background. In recent years it has been reforming its curriculum, and in 2007 it launched its First Year Induction and Integration Programme (FYIIP) aimed at reducing attrition rates and the time to completion as well as improving the labour market potential for its students.

The FYIIP consists of four interventions in early student life:

- > in the first induction period, time is given to briefing students on the learning styles required for their particular course. Tests are given that measure their emotional development;
- > in the middle of the first semester, students participate in workshops that identify those with learning difficulties;
- > at the start of the second semester a self-assessment session allows the students to take stock of progress to date and identify any challenges that they need to tackle;
- > finally, in the middle of the second semester, any students at risk are given support.

Much of this work is done by specially trained volunteer student tutors, each of whom has to look after 12 first year students. There are parallel initiatives to the FYIIP aimed at preparing pupils in the local high schools to what life in the University is like, making the science curriculum more manageable, and providing financial support for those who need it.

The University has constructed a sophisticated model with 12 variables to measure the academic vulnerability of incoming students and assess, on that basis, their likelihood of dropping out. The Institutional Research Department also produces regular reports comparing the evolution of the retention and pass rates by academic programme. Deans, heads of schools, and department heads use these data to monitor the situation of their students and suggest remedial interventions through the peer tutors, as needed.

When the First-Year Induction and Integration Programme started, the dropout rate by the end of the first two semesters was 17%. Over the past few years, the University has seen a significant improvement. By 2013, the first-year dropout rate had fallen to 8.7%. Over the same period, the average duration to graduate from a four-year bachelor programme was reduced from 6.6 to 4.9 years.

The University of Cape Town (UCT) in South Africa is the oldest university in the country with over 26,000 students. Over 45% of its students now come from an educationally and financially disadvantaged background and it has developed a University wide First Year Experience (FYE) project. The driver for this was the high drop-out of students after their first year (44% nationally, but less for UCT). UCT believes that student success in the first years is influenced not only by academic issues but also by factors such as physical and psychological needs, ease of Internet access, transport problems, access to, and information on, support services. For this reason both academic and professional services have been involved in an FYE plan that tackles issues such as pre-admissions support, a welcoming environment and students' social and material needs. With the help of a central support service and common guidelines, each faculty is helped to develop its own FYE plan, suitably adapted for its context. The resulting FYE projects include:

- monitoring of grades from mid-semester tests and assignments and their use to steer students towards appropriate support – tutors, mentors, the Writing Centre (etc.);
- a well-advertised portal as a central source of information for all FYE activities;
- extended orientation programmes that are designed by faculties and vary in length and content. They may include weekly workshops on basic academic skills;
- programmes to strengthen the digital literacy of both students and staff;
- mentoring of first year students by senior students; this has been very well-received as it benefits both parties.

The FYE initiative is University wide and builds on earlier interventions. In the Faculty of Commerce, with a history of initiatives, the efforts to improve progression rates has led to a 71% progression rate in a special programme compared to one of 46% for those not participating.

Also at the University of Cape Town, in the Faculty of Commerce, changes have been led by its own Educational Development Unit (EDU). The aim here is to support the 47% of students who are black and come from disadvantaged backgrounds. EDU's strategy is to ignore the 'deficit model' of temporary help to students who are below a certain standard, because those who re-entered the academic mainstream even after remedial support struggled to keep up. Instead, help is given throughout a student's career and is built into learning and teaching experiences that apply to all elements of the curriculum. The goal is to create a learning community and make students active participants in their own learning.

Features of the EDU scheme are:

- face-to-face interviews on admission which lead to flexible entry and exit points for different subjects depending on students' competence. Some will complete their qualification over an extended period. Some individual courses with more generally acknowledged challenges offer additional support (augmented courses) and students can enrol for these if required;
- a counselling session with an educational psychologist for each student;
- peer support provided by academic and administrative staff as well as by an EDU mentor or a senior student;
- lectures in most first year courses given by specialist EDU teachers. A compulsory weekly small group course in the first semester to provide support on the transition to higher education;
- a range of compulsory or optional programmes run by EDU including ones on career counselling, leadership training and how to be a mentor.

Academic staff development has been a key feature of the EDU's work since it is important that all staff are trained in handling diversity among the students and appreciate the changes needed to traditional learning and teaching practices from the first to the final year.

Since the graduates from the Faculty are able to obtain jobs in finance and accountancy, EDU has received some outside sponsorship for its reforms from professional firms and companies. This has freed up time for teaching staff to revise their curricula as well as various forms of student support.

Twenty per cent of all students entering the Faculty of Commerce are beneficiaries of the EDU activities. This has already produced results, since the graduation rate has increased from 40% in 2001 to 78% at the end of 2014; for five years these results have outstripped students in the mainstream programmes. EDU initiatives are now increasingly being applied across the board in the Faculty.

Guttman Community College (GCC) in the US opened in 2012 with the specific aim of addressing the challenge of poor attainment. It takes in students from the local area with a high school diploma. As it was starting from scratch, the College was able to plan a range of innovative practices to achieve its aim. These include:

- a statement of five broad learning outcomes for all students – called Guttman Learning Outcomes (GLOs);
- its Bridge Programme for all entering students, which provides an introduction to the first year inter-disciplinary curriculum; engages students in a research project on New York City; begins the creation of student e-portfolios; and introduces students to the learning community;
- in their first year, all students take a core set of classes, using experiential learning and the city as a learning venue. Remedial coursework is embedded into credit-bearing courses. The curriculum focuses on such issues as sustainability, food, housing, gentrification, consumerism, and immigration;
- during the first year students are placed in 'houses' and 'travel together' as a cohort for the year;
- each house consists of three cohorts of 25 students, faculty who teach all the courses, and a Student Success Advocate (SSA) who is assigned to each house. Each house with its students, faculty, and SSA together includes three *learning communities or cohorts*. This continuity of faculty and advising for students offers academic and social/emotional support that many first-year college students need;
- GCC has replaced the traditional divide between academic affairs and student services with the concept of 'Instructional Support Teams' for first-year students. The teams consist of faculty and Student Success Advocates, who work to support students and troubleshoot obstacles to their success. They meet weekly to discuss student progress;
- after the first year, career strategists are assigned to work with students. They are matched according to the student's major and the career strategist's academic backgrounds and prior employment history. They counsel students on transfer and career options and help them create e-portfolios that include not only their academic history but also leadership at the college and activities off and on campus in internships and employment;
- students must participate in a weekly 90-minute advising seminar, which is tied to a required two-course sequence that introduces students to different perspectives on the culture of work as they investigate a range of careers;
- e-portfolios are used for a variety of purposes: delivering course materials to students; students' own work including essays, project materials; and reflections on their learning. They are also invaluable for assessing progress against the GLOs.

It is too early to have statistics on the long-term effectiveness of the GCC approach, but a first year retention rate of 69% has been achieved.

James Cook University (JCU) and Queensland University of Technology (QUT) in Australia have shared an innovative approach due to the transfer of a Deputy Vice Chancellor from one institution to the other. The innovation, which they have called 'transition pedagogy' began at QUT in the early 2000s and aimed to lift the attainment and reduce the attrition of the increasingly diverse cohorts of students in their first year at the University. Its conceptualisation, and examples of its application, are very well documented.

Transition pedagogy is framed around six 'First Year Curriculum Principles' (FYCPs), which are to:

- proactively support academic and social transition to tertiary study;
- acknowledge and mediate student diversity in entering preparedness and background;
- be coherent, inclusive, explicit and foundational in curriculum design;
- enable early engagement with students' learning, their peers and staff;
- aid early acquisition of tertiary assessment literacies and provide early feedback;
- harness evaluation and monitoring to enable timely support interventions for at-risk students.

Some examples of the application of these principles across the whole institution are:

- new student orientation is conceptualised as a process that occurs over time; in one faculty first year students received, across their entire first semester, a weekly degree-tailored email from the Assistant Dean, Learning and Teaching;
- a web-based transition portal to provide a personalised, one-world, student view of all their potential interactions with the institution – academic, administrative, and support;
- inclusive curriculum design is at the heart of the innovation, for example, allowing for flexibility and choice; including multiple perspectives in examples and readings; using class time to normalise transition and diversity issues such as academic advising, just-in-time referral to academic support services and counselling; developing self-management and study skills. Also peer-to-peer interactions are embedded in the learning processes.

QUT has maintained a high level academic FYE leadership role and has established dedicated positions of first year co-ordinators across the University to facilitate the take up and embedding of the innovation. The case study reports that attrition rates have been improving contrary to the national trend.

Box 3.7 below reports on some US universities that have started to analyse 'big data' about students in order to improve both their admissions processes and the retention rates of students.

Box 3.7.: Using big data in support of retention strategies

Faced with high level of dropouts and low on-time completion rates, the leaders of higher education institutions have struggled with finding better ways of identifying at-risk students and providing effective support to improve graduation rates, especially at non-selective institutions. Following the trend of commercial companies and governments, a growing number of universities and colleges are now turning to big data as a new tool to guide admission decisions and identify at-risk students, especially in the first year of study.

Big data may be a promising avenue to improve the assessment of incoming students. A number of US universities have experimented with novel data analysis methods to follow the digital footprint of their students and detect, very early on, behavioural changes associated with potential academic difficulties. Administrators and professors can use digital dashboards and 'heat maps' that highlight who might be in academic trouble. Ball State University in Indiana, for instance, monitors not only the academic engagement of students but also their social activities in order to identify unexpected shifts

in patterns that may reflect study difficulties. Retention specialists immediately contact the students to offer academic or psychological support as needed. Special attention is given to Pell Grant beneficiaries (low-income students receiving a federal student aid grant) through a mobile application.

Arizona State University's 'eAdvisor' system, which flags students at risk of lagging behind, is credited with a significant increase in completion rates for students from vulnerable groups, from 26 to 41%, since its establishment in 2007. Georgia State University uses predictive analytics to advise students in which majors they are most likely to succeed, based on their grades in prior courses. A new University Innovation Alliance of 11 large public universities in the US, backed by several major foundations, was constituted in September 2014. It will use data analytics in its first set of projects, which are aimed at improving graduation rates for low-income students.

Universities are also using big data to improve admissions decisions. The idea is to try and identify the kinds of students who experience has proven are most likely to stick around instead of dropping out. For example, the Minnesota State Colleges and Universities system, which used to allow students to apply for enrolment until a few days before the beginning of classes, recently terminated this practice after administrators realised that students who enrolled closer to the start of the semester were more likely to fail than those who enrolled earlier.

Applicants for the 2015 freshman class at Ithaca College did not have to send in their standardised test scores. Instead, the College's admission office looked at other factors, such as how many friends and photos applicants had on social media. Ithaca has been quietly collecting student social media data since 2007, when it launched a Facebook-like website for applicants called IC PEERS. The website gives applicants a chance to connect with Ithaca faculty as well as each other. Using an IBM statistical analysis programme, the director of enrolment planning studies data collected from IC PEERS to see which students employing what behaviours were most likely to enrol and stay at Ithaca.

"The question is, how do you recruit a set of students that will be successful at your school? When a student doesn't complete a degree, it is disruptive for everybody. The student has incurred debt and the school is left with a hole in that class." (Katharine Fraser, Chief Technology Officer for IBM's unit that produced the data analysis programme used at Ithaca)

The purpose is to learn how interested a candidate is in the college, Ithaca officials explained. Eric Maguire, until recently Vice President for Enrolment and Communication at Ithaca, said that using data as a part of the selection process has already "bumped up the number of students" who stay after their freshman year.

Sources:

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Felton, E. (2015) Colleges shift to using 'big data' – including from social media – in admissions decisions. *The Hechinger Report*. 21 August 2015. Available from: <http://hechingerreport.org/colleges-shift-to-using-big-data-including-from-social-media-in-admissions-decisions/>

Kelderman, E. (2012) To Raise Completion Rates, States Dig Deeper for Data. *Chronicle of Higher Education*. 2 March 2012. Available from: <http://chronicle.com/article/To-Raise-Completion-Rates/131037/>

Analysis

There are many similarities among the innovations that have been adopted. Common to all is the clear labelling or packaging of an innovation and the existence of leadership with enough authority and influence to promote and sustain the momentum for change. Guttman is unusual in that it was able to

embody its new approaches from the start, but all the others have had to review and change existing policies and practices.

Messages and lessons from the case studies are that:

- redesign of the curriculum is central to improving the first year experience;
- new FYE policies and practices need the involvement of both academic and professional support staff;
- new students benefit from interaction with mentors and senior students and peer-to-peer interaction or the use of the cohort concept are valuable ways of strengthening their confidence over time;
- academic staff development is needed to ensure that the learning styles of new and diverse types of student and the principles of the new approaches to deal with them are understood and practised;
- proactive ways of providing new students with information and a range of support services can reduce their insecurity and improve their capacity to learn at degree-level and engage in university life.

Even though the UK now generally looks at the whole life cycle of students' experience on campus, there are valuable models in this section and available tools for those UK institutions that still have concerns about first year entrants who might be at risk of high drop out in their early years.

3.f. Theme 6: Engagement with the community and co-development of curricula

This section describes how some institutions have worked with the community in a two-way exchange. In one direction, the University reaches out to the community to provide strategic responses to the community's needs and draws on its resources to help with student placement, co-op education and the design of the curriculum. In the other direction, the community works with the University to tap into its expertise to address local issues and to advise on curriculum design.

The two main cases (Widener University and the Institute of Technology, Sligo) show institutions that have tailored their services specifically to help the local community or to help particular commercial or public sector clients.

In other sections of this report there are many examples that show how what is learned from working with external clients can benefit the programmes and courses delivered to students. At the University of Waterloo, for example, it was reported that students who had had a co-op education experience were challenging faculty members with the point that the formal classroom approach to an issue may not be the way it actually happens in the 'real world'. Teaching staff are now responding by linking theory to its practical application in their teaching.

The University of Waterloo and Nelson Mandela Metropolitan University (NMMU) are examples of how a policy of experiential learning and encouragement of co-curricular activities brings benefits not just to the student in terms of employability but also to the institution and community from the close working relationships that are required. In order to make experiential learning work at the scale needed for the numbers of students involved both institutions have had to develop very large numbers of corporate or public partnerships. In the case of NMMU professional bodies are also involved formally, as they review the records that students maintain of their experiential and off campus activity. Financial support is given in some cases.

Cases described in other sections emphasise close working with either professions or commerce in the initial development of curricula. The 2iE project in Burkina Faso was specifically planned to remedy a

shortage of trained engineers in that part of Africa and is successful in that 98% of their graduates remain in Africa. Olin College of Engineering is a carefully crafted solution to what was seen as the deficiencies of current engineering education in the US and required considerable discussions with industry. At Western Governors University, the role of industry and the community is built into academic planning; new programmes are developed and existing ones revised under the direction of a programme council, made up of external industry experts and academics. 2iE also locates many of its activities in the community and provides support to community based entrepreneurs.

The growing use of problem-based learning (PBL) as a tool inevitably widens the horizons of both teachers and students in their development of materials for the PBL approach. It challenges teachers to merge theory and practice in a problem-centred approach with roots in real life problems. Thus, at Maastricht, the University can use this pedagogical approach to work alongside its 'Knowledge Axis' that consists of long-term projects organised in co-operation with higher education institutions, the local government and industry ('Triple Helix'), aimed at improving the socio-economic structure of the region. In Roskilde University, about 40% of students' projects are based on real-life questions.

Widener University, US. Widener is a private university with 5,500 students located in an economically depressed city of Pennsylvania called Chester. As a result of the City's high poverty rate and declining population, civic engagement is a key strategy and a core feature of the University's mission. The University has committed itself to the long-term viability of its community by creating a number of specific services for Chester residents. These include a social work counselling service, a community nursing clinic, a community physical therapy clinic, a centre for violence protection, and a centre for social work education. Widener has also played a major role in the launch of a charter school (which was the first university-sponsored charter school in the state). All these initiatives involve both teaching staff and students. Widener has also taken the lead in co-ordinating other local organisations in a drive to improve college access.

These initiatives have required a special focus for academic staff development with a programme of 'Academic Service Learning' seminars; as a result, academic staff have now developed and teach on more than 80 service learning courses. Sixty community partners work with Widener to provide service-learning experiences to students.

All the civic engagement activities are managed by a special office and overseen by a standing committee of the Board of Trustees. The President who has been the driver of the initiative has created a Community Advisory Board on which sit members of all relevant external groups and organisations.

Institute of Technology, Sligo, Ireland. IT Sligo is a technical institution with 5,500 students in a rural area of Ireland, which has developed special programmes to help with the economic regeneration of its region. Because of its rural location and limited student market with falling numbers, IT Sligo had to come up with alternate models of delivery to traditional face-to-face contact. It now provides flexible delivery, through part-time provision and recognition of prior learning (RPL) and, most notably, through online learning, developed in partnership with companies based in the region and beyond, for example, Allergan, GSK Stiefel, the Irish Prison Service, MSD (Cork) and CSL (Australia).

Some of IT Sligo's online courses involve students overseas and a sophisticated online proctoring service for examinations has been developed that uses cameras that film every student and the analysis of keyboard strokes to deter fraud.

IT Sligo's Innovation Centre is the first contact point with industry and has been responsible for nurturing partnerships that started with a local client in Sligo then spread to the parent company's other global subsidiaries. Similarly, a contract with a local public service was widened to become a national one. Business processes were substantially re-engineered to make the contracts work.

Examples of specific changes include: (i) in-house development of an online course application process, (ii) outsourcing the services of a call centre to handle applicant inquiries (in a timely and professional manner suitable for companies and those in the workforce), (iii) development of a formal business-case process for new bespoke courses.

The net result of the innovations was that part-time and flexible student numbers went from 200 to 2,000 and the relevant turnover rose to €4 million over a period of five to six years. The student population now includes a mix of students from global corporate clients alongside local students from the region.

The connection between postgraduate level learning and the business community is illustrated in the Swedish example in Box 3.8.

Box 3.8.: Umeå University, Sweden – Industrial Doctoral School for Research and Innovation (IDS)

Founded in 1965, Umeå University prides itself on its international profile and regional role by promoting interaction between research, education, collaboration and innovation that challenges existing boundaries. The University formed an Industrial Graduate School for Research and Innovation (IDS) in 2008. IDS starts a new round of 12 new projects/doctoral candidates every other year.

IDS accepts projects from all scientific fields. Each project is chosen in a competitive process, as are the doctoral candidates. Each project has to be generated and led in collaboration between the supervisor and an external, non-academic partner. The partner might be a company, a non-profit, governmental agency or other type of organisation. The only partners excluded are those looking for research funding as their main objective.

IDS projects are financed by the University and the partner. The partners contribute 50% of the salary for the doctoral candidate. Participating in IDS means that PhD candidates are part of an interdisciplinary group enrolled in a set of courses over two years to develop their generic skills and prepare them to work outside academia within their field of expertise. They work an average 0.5 days per week in the partner's organisation.

As one of the participants in the European University Association's project DOC-CAREER II and contributors to a number of conferences and workshops, IDS has attracted attention outside Sweden for its efficient collaboration with its external partners, its course package and the competitive selection of projects and recruitment of doctoral candidates. As a result of this exposure, Umeå University, the University of Ghent (Belgium) and Bangor University (UK) created the European Industrial Doctoral School (EIDS) to promote knowledge exchange and mobility.

Sources:

About IDS: <http://www.umu.se/english/about-umu/collaboration/industrial-doctoral-school>

About EIDS: http://www.eua.be/Libraries/DOC-CAREERSII_Brussels_event/European_Industrial_Doctoral_School.sflb.ashx

Borrell-Damian, L. Morais, R. and Smith, J. H. (2015) *Collaborative Doctoral Education in Europe: Research Partnerships and Employability for Researchers*. Brussels: European University Association. Available from: http://www.eua.be/Libraries/Publications_homepage_list/EUA_Doc_Careers_II_web.sflb.ashx

Analysis

Widener University is an example of a whole institution developing a transformative approach to engagement that has been inspired and led from the top. The IT Sligo initiative was also the result of a

former President's drive in response to a disappearing local market. Both show that such changes can happen in existing well-established institutions with appropriate leadership.

The more conventional ways in which co-development of curricula arise have been described earlier. They result from close working with external partners as a result of co-op education, service learning and experiential learning. Academic staff are influenced to amend curricula by their own direct contact with external partners on student projects and cases and also by direct feedback from students – as identified at Waterloo.

In the UK co-curricular development is often formalised with the creation of Curriculum or Programme Advisory Committees, containing members from industry or the professions that operate at faculty or departmental level and give feedback on existing and planned courses. Western Governors' approach is a more advanced version of this with embedding of industry specialists at various points in the development and evaluation cycle.

4. Meta-analysis across the cases and countries

The following section offers a meta-analysis across the case studies and countries. This aims to highlight and signal relevant features in the case studies. The first part of this section focuses on questions that were addressed in each case relating to structure and organisation; management; and challenges of implementation and evaluation. The second part attempts to draw together different aspects of 'innovation' and 'learning excellence' that are revealed and reported in the case studies. Not all aspects are evident in all cases, nor is the analysis exhaustive; readers will find other points of relevance depending on their own context and priorities.

Part one

Structure and organisation

Four different aspects of structure and organisation are highlighted below. Each is a key part of an innovation that has been designed to improve educational outcomes for students. The four aspects include: organisational arrangements and structures in new institutions; structural and organisational changes within existing institutions; new virtual structures; and redesigning or reframing existing processes.

Organisational arrangements and structures within new institutions

In this project, nine cases of innovation involve new institutions, with innovative curricula and pedagogies. In many of these institutions, there are also high levels of organisational integration across student support services; research, teaching and community engagement strategies; and also disciplines. Each institution is different and one or two distinctive features of physical structure and organisational arrangements are highlighted below:

Uniminuto University, Colombia: the University has created an Integrated Focus Model of dedicated support for at-risk students operating across 12 campuses and for the entire course of students' studies including academic counselling, financial support, psychological support, a life-project course and remedial courses.

University of Waterloo, Canada: the University operates year-round with three terms of four months and the Co-operative Education and Career Action group – a 160-person team – manages over 18,000 work terms per year in partnership with over 5,200 employers. Co-op students participate in four, or up to six, four-month work terms during their degrees.

Roskilde University, Denmark: the University is structured around six multi-disciplinary departments and curricula are focused on 'Problem-oriented Project Learning' where students define the real-life problems to study and where research and teaching are combined. Students live off-campus and to facilitate group work are affiliated (110 students) to a 'university house' which they collectively run with access to academic and administrative staff, computers and other facilities, and social space.

Maastricht University, the Netherlands: the University's regional campuses each offer specialised curricula linked to their locations: in health; materials; agriculture, logistics, food and health; business, law and culture; and a 'Smart Services Campus' focusing on finance, administrative and information services. The new 'Knowledge Axis' projects with education, government and business partners encompass education, research and societal engagement with students gaining academic credit for internships.

Guttman Community College, US: the College's educational model brings together multiple 'high-impact practices'. The curriculum is organised around five broad learning outcomes and mixed staff instructional teams meet weekly to discuss student progress in their first year; in subsequent years, 'career strategists' counsel students individually, helping them to create e-portfolios of wide-ranging achievements. In the first year, students must enrol full-time with choices of class in the mornings or afternoons with experiential learning built in to the curriculum, using the city as a learning venue.

Western Governors University, US: curriculum development is under the direction of a programme council of industry experts and academics with high-level competencies in each field mapped to topics in each degree programme. The online courses are designed and delivered by multi-professional teams and student services are also delivered through a range of specialists. Assessment takes a variety of forms including objectively scored examinations, performance assessments, and clinical or field experiences.

Franklin W. Olin College of Engineering, US: the curriculum combines Engineering, Entrepreneurship and Humanities. Every Olin student must start and run a business to graduate and must complete a year-long design project sponsored by industry. Olin students cross-enrol at Babson and Wellesley College for Entrepreneurship and Humanities courses respectively. All students are required to present some aspect of their academic work in a public setting at the end of every semester.

International Institute for Water and Environmental Engineering (2iE), Burkina Faso: 2iE draws on an extensive network of professionals to review and develop curricula and support students. Development of entrepreneurial skills is promoted through different structures: the Junior Company that offers tailored services to companies from students applying their knowledge to practice; entrepreneurship competitions where students present their business ideas to a 'jury' of teachers, sponsors and company managers, also receiving coaching and advice; and the company incubator provides scientific, managerial, legal and financial project management to any entrepreneur committed to sustainable development in Africa.

Central European University (CEU), Budapest, Hungary: CEU is described as 'international by design' in so far as the international character of the University is incorporated into all curricular and programme decisions. All courses and research must be comparative, multi-disciplinary and include a regional dimension. Both academic and administrative staff are internationally recruited. To enhance the social relevance of research and social policy engagement, the University is developing University-wide intellectual teams to conduct joint research, teaching and civic engagement including innovative outreach activities to promote its mission as being a voice for democracy and open society in the region.

Changing and developing existing organisational structures, services and units

Among the international cases are examples of new physical structures and services created within institutions, some developed in partnership with other groups and agencies outside the institution, some involving new units and internal partnerships.

Widener University: Widener has developed a wide range of external structures and services collaboratively with staff, students and the local community, for example, Widener University's Social Work Counselling Services, the Widener Community Nursing and Physiotherapy Clinics, the Widener Center for Violence Protection and a new charter school for more than 400 students launched with local residents.

The University of Cape Town: with institutional funding, UCT established a cross-faculty structure (with faculty status) for education development focusing on staff and student development through a University Centre for Higher Education Development that has then established Education Development Units (EDUs) in all faculties. The Commerce EDU has received external funding from major private companies such as Investec and KPMG.

James Madison University: have a comprehensive approach to quality assessment involving a central service, the Center for Assessment and Research Studies, that undertakes surveys, performance assessments and standardised tests aimed at rigorous measurement of student progress and success in relation to a range of competencies as well as assessment of programme quality. The centre also provides training in assessment and measurement for staff.

Virtual structures

The term 'virtual structure' is used here to describe different forms of reporting and recognising student learning, often to include elements beyond the formal curriculum. New technologies are facilitating these developments.

Nelson Mandela Metropolitan University has created a Co-Curricular Record organised around 15 learning outcomes and 17 development indicators representing attributes needed for living and working in the 21st century. This initiative is linked to South Africa's goals of transformative learning and holistic student development. There is a Co-Curricular Student Development Committee to manage the initiative. Students plan their involvement over the year and activities are offered by a specific department, section, or faculty through a programme co-ordinator. Software is used to record students' achievements in the same way that academic records are maintained. Experiential learning activities on campus in classroom, on campus out-of-classroom, off-campus in local or international communities can all be recorded.

Two US examples of developing 'e-portfolios' (at the University of Notre Dame, Indiana and at Guttman Community College) are also examples of 'virtual structures'. In the former case, the e-portfolio was used first for assessing and recording the achievement of learning objectives in the first year of studies and subsequently for student guidance (advising). This is now being extended into the award of digital badges, the 'Evidence-Based Badges' (E2B2) programme enabling students to showcase their skills and accomplishments visually on their e-portfolios, while establishing a standard system for verifying and quantifying these formal and informal achievements and skills. In the latter case (Guttman CC), student e-portfolios have multiple uses including the delivery of course materials to students, as the primary vehicle for assessment and recording and reflecting on learning outcomes, and for wide-ranging academic support for students. As the case illustrates, e-portfolios at Guttman are centred on improving students' learning through careful attention to the curricular, co-curricular and affective dimensions of the student experience. Staff also have their own e-portfolios to share information about themselves with their students including their teaching, research and outside interests.

Redesigning and reframing

Innovations are also created through re-designing curricula or pedagogical practices to produce more beneficial outcomes for students or by re-framing existing methodologies so that new conceptual models guide practice in productive directions.

The California partnership between San Francisco State University and City College of San Francisco is part of the Metro Academies (Metro) programme, which has involved a redesign of the first two years of the college experience. Each academy involves up to 140 first-year and second-year students, working in cohorts, and has a broad career or topic theme to engage students in their field of interest from the start, such as Health or Science. There are several elements of partnership involved: between the two institutions, among students in cohorts, with the student services based in the Metro classroom, and between student and staff development as there are 45 hours devoted to academic professional development for the staff involved.

Brandman University offers another US example of curriculum re-design to include General Education learning outcomes, breadth requirements and liberal education foundations; five institutional learning outcomes and disciplinary skills necessary for success in academic and work settings. Western Governors University, and the online business degree offered by Brandman demonstrate curricula redesigned around competencies that allow students to progress at their own pace.

Several of the Australian cases involve the development of new frameworks to enhance quality and improve student engagement, interaction, collaboration and success. Curtin University focused on its transnational teaching and learning when applying a Framework of Quality Principles, a model professional development workshop, case studies of implementing the Framework across disciplines, institutions and modes of delivery, and a dedicated website of outputs relating to the innovation. Queensland University of Technology and James Cook University designed a 'transition pedagogy' with a framework including six first year curriculum principles (design, transition, engagement, diversity, assessment, and evaluation) alongside four key strategies (curriculum that engages students in learning, proactive and timely access to learning and support, intentionally fostering a sense of belonging, and sustainable academic and professional partnerships). To deliver the transition pedagogy, JCU has developed new roles and dedicated positions, for example: a Deanship of Learning, Teaching and Student Engagement and dedicated first year co-ordinators and student support officers. Strategic Integrated Learning Advisers provide programme-based learning support for students and Retention Action Teams are also deployed at programme level.

New technologies feature in several of the international cases to create new benefits and support for students and new pedagogical possibilities for staff (e.g. the Macquarie University and the University of Queensland cases). Other examples include online learning to extend educational reach into companies (as in IT Sligo, Ireland) and to dispersed groups of working adult students (Western Governors University, for example, serves 55,000 students from all 50 US states). e-Portfolios also support student learning, reflection, and assessment.

Leadership, management and governance

Leadership at different levels of the institution (within units and faculties and at the centre) is clearly an essential part of creating and sustaining the innovations described. In some cases, such leadership is highly visible and often visionary (e.g. at Widener University in the US, at Queensland University of Technology and James Cook University in Australia, at Roskilde University, Denmark, at Franklin W. Olin College of Engineering, US, at Sciences Po, France, and at Uniminuto University, Colombia). In other cases, continued and successive waves of innovation (such as described at the University of Waterloo, Maastricht Universities and the University of Cape Town) suggest that 'innovation capacity and

capability' has been built into, and widely embedded in, the institution since innovations have been sustained through successive changes in leadership. There is also growing importance attached to embedding innovation and excellence in learning and teaching within institutional strategic plans as a stimulus to shared responsibility for outcomes as distinct from reliance on individual leaders. Other examples of leadership (e.g. at IT Sligo) demonstrate the alignment of top-down and bottom-up processes of leadership to enable strategically important innovations to be supported and embedded across the institution.

Management systems and processes are equally important in the cases, with numerous examples of new roles, cross-functional working, different layers of reporting and assessment with associated data-gathering to measure change and improvement. More substantial changes in business processes may also be required (as described in the Brandman University, US and IT Sligo cases) to integrate student information systems with financial aid processes and admissions, transcript and learning management systems. While details of precise resourcing – human and financial – are not always obvious in the cases, there are examples of significant investment from institutional resources as well as external investment in the form of grants and awards, and scholarships and internship opportunities for students. In several cases (including that of Uniminuto University in Colombia, Queensland and James Cook Universities in Australia and the University of Cape Town), it is clear that managers and management processes have had to adapt and become more flexible, suggesting that innovations in teaching and learning can only be sustained with parallel innovations in management attitudes and systems. In a few of the Australian case studies (reportedly in Macquarie and Melbourne) the innovations have as yet only spread patchily across the institution.

A range of collegial governance structures is also noted in different cases to steer, guide and offer advice, some made up of a range of actors, particularly in the case of partnerships with employers or communities. Students may also be partners in these governance arrangements.²⁶ Corporate governance arrangements are also important in sanctioning innovations (or potentially acting as a barrier to innovation as described initially at Sciences Po in France). Governing boards also monitor progress and improvements through reviewing data and receiving annual reports and specific evaluations, as described in the case of 2iE, Burkina Faso.

Challenges: implementation and evaluation

Implementation barriers

EXTERNAL BARRIERS

Some of the international cases describe a range of external barriers that can hinder or slow down the innovations, for example, legal and regulatory barriers, such as difficulties with licensing or accreditation in the US or a requirement for changes in the law concerning the introduction of innovations in several European cases. External barriers relating to work opportunities for students include finding and maintaining sufficient work placements and having sufficient capacity to quality assure experiential learning in the workplace.

²⁶ It is worth noting that in some of the US cases, such as Brandman and Western Governors Universities, high reliance on contract academic staff tends to be disruptive of traditional collegial governance arrangements built around full-time academic staff. Community Colleges (such as Guttman) also typically employ a lot of part-time academic staff.

CULTURAL BARRIERS

More common are a range of cultural barriers including distrust or resistance to new models of education (such as competency based degrees or problem-based learning) within the institution or from other universities. Several of the new institutions have reportedly needed to work hard to gain recognition and equal status and have used a range of mechanisms to achieve parity (e.g. translating competencies into credit-hours in order to enable students to transfer credits for further study or to gain financial aid as in the case of Western Governors University; introducing external examiners to benchmark student performance against other universities as in the case of Roskilde). They have also had to make extra efforts to attract staff and students in the early stages of development (e.g. in the case of Olin College). In existing institutions, mistrust of innovations can also be internal, fostering long debates that can slow down implementation (as described at Nelson Mandela Metropolitan University).

Several cases describe perceived barriers among staff related to extra workload (e.g. Curtin University), to the need for investment to ensure sustainability (University of Queensland), and particularly to working in new ways in collaborative arrangements across different functions and categories of staff (as described in the Guttman Community College case). As a consequence, significant resources have clearly been devoted to staff training and development, to the provision of technical support, to guidance for staff (including Curtin University's 33 welfare principles for staff involved with offshore education) and also to recognition of staff contributions to enhancing teaching and learning. The Australian cases also describe a variety of materials and workshops that have been designed to build understanding, commitment and new skills among staff in the originating university and also across the Australian system in order to introduce learning innovations. Lack of awareness of a particular problem (such as poor comparative attainment across different groups of students) can also be a barrier to innovation. In these cases, providing data and information to teaching staff is a useful starting point.

Cultural barriers also exist among students. These may be educational, relating to preparedness for academic study, to confidence in new settings, to vulnerability because of personal or financial circumstances, or to unrealistic expectations of how fast they might progress, or how good their employment prospects might be (examples can be found in Nelson Mandela Metropolitan University, University of Cape Town, Uniminuto University and University of Bio Bio cases). As these problems have emerged, a variety of innovations have been developed as solutions to the identified problems.

OPERATIONAL BARRIERS

Operational barriers are also challenging as is well illustrated in the case of Brandman University where the new curriculum and assessment process also required significant change in business processes (as described above). Typically, the greater the flexibility and choices given to students, the greater are the operational challenges for these business systems where institutions are having to make changes to existing systems rather than starting afresh as in the new institutions.

FINANCIAL BARRIERS

Financial resources are clearly a barrier in some cases, for example, to cover the costs of new systems or equipment, to recruit new staff, and train existing staff. Scaling up from a small experiment to a full-blown cross-institutional innovation also requires substantial resources of management and staff time and energy as discussed in the case of IT Sligo. Many of the innovations described required pump-priming or research funding from external sources, as described above.

EVALUATION

A variety of forms of evaluation are described in the cases, formative and summative, quantitative and qualitative, internal and external. In the US, there is a long history of 'institutional research', 'assessment' and measurement, and institutions have built internal management information systems that capture relevant data to evaluate the outcomes and impact of innovations. However, as suggested

in the James Madison University case in the US, “Assessment is always difficult to implement and sustain. It takes real commitment and investment to foster quality work” (comment by US case-author, Madeleine Green). In other countries (as described e.g. in the Uniminuto case in Columbia), it has taken time to build evaluation systems to track progress and student success and practice is still evolving. Measuring the impact of different forms of intervention (particularly when combined) on student learning outcomes overall and in relation to particular groups of students is far from straightforward and relies on sophisticated research and data collection systems. Another barrier is the length of time it takes to gain results from the introduction of an innovation to the learning gains recorded for students as an outcome of the innovation. Such a time lag is a problem when needing to provide evidence of success in funding applications to support scaling-up or spreading of an innovation to other parts of the institution or system (as in the Australian cases). Apart from barriers, there are also side benefits that are hard to identify; for example, staff development to handle one particular audience or challenge may affect teaching skills overall.

The international cases often refer to metrics that have been collected or external reviews that have been undertaken. Clearly the requirements of external agencies (such as accreditation, quality assurance agencies or government) for data on admissions, retention, time to complete and student employment is a trigger for evaluation and tracking of innovations. Other motivators include ‘reputation-gain’ in the form of prizes, awards and league tables for institutions (or academics) as well as for students. Some of the cases also record the introduction of new electronic systems to ease or enhance data collection – and to use data collected for one purpose (such as student success) to serve related purposes (such as judgements of programme quality and the gathering of information for programme or curricular improvements) in integrated ways. The era of ‘big data’ and ‘learning analytics’ is likely to accelerate the range and use of evaluation modes to facilitate innovation and enhance learning outcomes for students and staff.

Part two

Striving for innovation and excellence to enhance student learning and educational outcomes

A striking feature of the international learning innovations identified by the team is their rich variety of form and focus – from the creation of new institutions with particular missions and curricular designs to pedagogical developments or learning support interventions that have grown out of experiments and evidence-gathering within subjects, programmes, support units and institutions. Some of these innovations were initiated decades ago and have reportedly been sustained, developed in new ways and spread across disciplines, institutions and countries. Others are relatively new, involving changes in curricula, pedagogy and learning support arrangements designed to meet current and future challenges of diverse students, internationalisation and employability, often making use of the opportunities offered by new technologies. What counts as ‘innovative’ is clearly context-dependent, however, indicators that demonstrate the success of innovations can be drawn out from the cases. For similar reasons, ‘learning excellence’ is not defined in an absolute sense. However, factors that contribute to learning excellence in different countries and institutions are identified in the case studies and are drawn together here.

This part has three sub-sections:

- > different settings and sources of innovation;
- > indicators of successful innovations;
- > elements and indicators of learning excellence (based on the case authors’ analyses and data within the cases).

Settings and sources of innovation

It is not always easy to design innovative curricula or introduce new pedagogies in existing institutions because of existing structures, legacy systems or embedded practices and behaviours. In several countries, a solution has been found by setting up new institutions with different structures, organisational arrangements and ways of conducting their educational business.

New institutions and distinctive educational missions

Nine international cases describe the development of new institutions with distinctive educational missions reflected in whole institution curricular designs and pedagogical approaches. These institutions offer exemplars of different educational approaches – typically, these are deliberately introduced to push changes in practice more widely or to address specific problems or gaps in provision, in educational opportunities or skills. Three institutions were specifically mandated by governmental authorities to address particular issues in innovative ways. For example:

- Maastricht University, in the Netherlands, was established by the government in 1957 to address regional economic regeneration, adopting a distinctive pedagogy of problem-based learning;
- Roskilde University, in Denmark, was set up by a government-instigated task force involving students and staff representatives, adopting a particular educational philosophy of co-design that emphasises a problem-oriented academic approach, student co-determination, and the spatial and social organisation of studies;
- Western Governors University in the US, aiming to increase access to flexible study opportunities and employability through a distinctive competency based approach, was founded in 1997 with the support of 19 US state governors.

Other new institutions had different origins:

- the University of Waterloo was established as a public university in 1957 emphasising co-operative education; its current strategy with a focus on experiential and work-integrated learning is recognised and aligned through a Strategic Mandate Agreement with the Ontario Ministry's goals of jobs, innovation and economic development;
- a much newer open-admissions institution, Guttman Community College, New York City, was the first new community college in the CUNY system for 40 years. Its innovative educational model was based on four years of planning and research – brought to fruition through a large foundation endowment – and integrated a number of well-evidenced practices to improve teaching, learning, retention and graduation rates for its predominantly non-white and low income student intake;
- in Latin America, Uniminuto University in Colombia, was established in 1990 as a private university by a Colombian priest known for his community development activities. Its comprehensive portfolio of academic support activities across 12 branches and online is designed specifically to identify and offer different interventions for at-risk students throughout their study time to graduation;
- in 1991 in Europe, the Soros Foundation's Open Society provided funding and an educational vision to establish an international university with a regional mission to be the voice of democracy and open society in Central and Eastern Europe. All courses at the Central European University must integrate a comparative regional dimension in a multi-disciplinary way that promotes self-reflective critical thinking among the students.

New institutions with a subject or disciplinary focus have also been created:

- political commitment by 14 West and Central African countries to economic and social development was key to the founding of 2iE in 1969, an International Institute for Water and Environmental Engineering located in Burkina Faso. The Institute applies a model of social

innovation and tailor-made flexible education to create employment opportunities, solutions to social issues, focused vocational education and professional training, emphasising entrepreneurial skills and life-long learning;

- also focused on engineering education, Franklin W. Olin College of Engineering, a new institution established in 1999 in the US, through a special foundation endowment, had “an audacious charter that offered an experimental laboratory for remaking engineering education in the US” through an innovative curriculum that combines engineering, entrepreneurship and humanities delivered through a problem and team-based pedagogical approach.

Eight out of these nine institutions (Guttman, which opened in 2012, is still relatively new) have sustained (and also extended) their curricular, pedagogical and learning support innovations over time, and have remained notably distinctive in their national context, spreading their innovations to other institutions and disciplines. Some, like Maastricht, Olin, and Uniminuto have become internationally famous, leading to the adoption of (or learning from) their educational approaches in other contexts. Others, such as Waterloo, are reportedly seeking recognition in world rankings for their educational distinctiveness and success.

Institutional innovation

Several cases describe innovations that were initiated in part of an institution (the University of Queensland’s School of Chemistry; the School of Engineering at the Institute of Technology, Sligo, for example) and have been extended within the institution to other units or disciplines. Other cases describe whole-institution initiatives to address local or national issues such as attrition rates among first year students (the University of Cape Town’s First-year Experience; Queensland University of Technology and James Cook University’s Transition Pedagogy, the University of Bio Bio’s First Year Induction and Integration Programme), ensuring graduates are employable (Nelson Mandela Metropolitan University’s Experiential and Co-Curricular learning), addressing the needs of an economically depressed community in Pennsylvania (Widener University’s community engagement and service learning strategy) and supporting talented students from disadvantaged educational and academic backgrounds to achieve success in an elite institution (University of Cape Town; Institut de Sciences Politiques, Paris).

There are also hybrid examples – Brandman University, which was an existing university, a part of which became a new institution; and Nelson Mandela Metropolitan University, which became a new university out of a merger of three existing institutions.

Several more cases describe innovations that have been developed jointly across institutions in a range of circumstances. San Francisco State University and City College of San Francisco developed the Metro Academies Program as a partnership to redesign the first two years of the college experience to improve college completion and academic success. The Community College of Aurora joined with three other institutions in the Denver region to engage in the Equity Scorecard process developed by the Center for Urban Education at the University of Southern California to help students and staff create benchmarked completion and equity targets that align with the state’s goals. The Centre for Studies in Higher Education at the University of Melbourne designed the ‘Interaction for Learning Framework’ with two other Australian universities with large numbers of international students (RMIT and Victoria University) to improve interaction between students with diverse linguistic and cultural backgrounds. This project team was both multi-disciplinary and cross-institutional. The School of Education at Macquarie University developed the use of ‘Blended Synchronous Learning’ in a project with seven other institutional partners as well as a Collaborator Network involving originally 600, and now more than 1000, education experts from Australia and other parts of the world.

Indicators of successful innovations

The success of these varied innovations can be seen in a range of indicators including:

- vertical and horizontal diffusion (within and across an institution; across disciplines; across institutions with similar and different missions and student cohorts; across countries and communities of practice);
- the scaling-up of an initiative from an initial experiment or application in one site to multiple sites and sometimes several applications;
- national recognition manifested through awards such as those from the Australian Office for Learning and Teaching or through other national agencies and associations (as in the cases of James Madison University and the University of Notre Dame, University of Cape Town's Commerce Faculty EDU; and Maastricht University);
- international recognition and awards through international associations such as the OECD and G20 nations (Uniminuto University, Colombia);
- recognition through media reports and scholarly articles as in the case of Franklin W. Olin College of Engineering and Uniminuto University. Olin's students have also been recognised through prestigious national awards.

While these indicators are publicly visible, more subtle indicators of success are also evident in the cases, notably 'reputation' at national level as a lead institution in innovation of different kinds (University of Cape Town), international reputation in specific fields (the University of Waterloo's global reputation in co-operative education), reputation among experts in a field (Western Governors University, Brandman University, and University of Notre Dame in the field of assessment) or reputation arising from experience and development over time in a domain of practice (Curtin University in transnational education). These 'soft indicators' are more difficult to capture in hard metrics. However, where there are national enhancement bodies to support promising innovations (such as the Office for Learning and Teaching in Australia), funding can be awarded to scale up or further develop those innovations that could benefit other institutions, particular groups of students, their educational experiences, or particular fields of study and practice.

Learning excellence: elements and indicators

The cases illustrate a number of elements of learning excellence that are captured below and are evident at different levels of an institution. While context-dependent and not exhaustive, these include:

- strategies with clear goals and targets aimed at enhancing students' educational outcomes;
- a sustained focus over time on innovation and development, including new priorities and emphases;
- institutional contexts that actively encourage excellence in learning and teaching;
- team-based initiatives to enhance learning outcomes and experiences for students;
- individual leadership as a driver of learning excellence and innovation in learning and teaching;
- intentional, systematic and evidence-based approaches to innovation and continuous improvement;
- structured evaluation and use of data for quality enhancement purposes;
- range and sophistication of metrics for assessment of students, programmes and institutions;
- variety of approaches to gathering evidence from retrospective to real-time learning and professional development;
- holistic approaches – addressing the 'whole student's experience';
- integrated approaches – bringing diverse elements together to enhance students' learning and educational outcomes;
- active, experiential and reflective student-centred learning;

➤ clearly identifiable benefits aimed at and achieved for students and other stakeholders.

Levels of excellence and sustainability

At the whole-institution level, there are numerous examples of strategies that have clear goals and targets. These may be related both to innovations in pedagogy or curricula and to continuous incremental improvements in quality linked to mission and practice. Several innovations have been sustained over time and include new emphases or priorities in different years (as in 2iE in Burkina Faso; Maastricht University; Uniminuto University, and Waterloo University).

At programme and discipline levels, there are examples of teams developing an initiative that is carefully planned, tested, evaluated and extended as part of professional practice and with goals to enhance learning outcomes and experiences for students – in contexts where the institution actively encourages excellence in teaching and learning (e.g. University of Queensland; University of Cape Town). There are also examples where individual leaders have played a significant part in driving learning excellence – or innovative educational models – throughout an institution (a new President at Widener University and Olin College; a new Rector as part of a task-force at Roskilde University; a Deputy Vice Chancellor Academic at James Cook University).

Evidence-based approaches

The majority of the international cases demonstrate an intentional, systematic, carefully structured and evidence-based approach to innovation and development - whether in pedagogies, curricula, student learning support – or educational models. Existing research is used to identify developments with a proven track-record. These practices are then introduced and implemented, for example: several of the US cases; and in a new institution, Guttman Community College. Scoping studies are also used (e.g. in the Macquarie case) to identify existing good practice in a field, or gaps and problems that need to be addressed, and similarly in the case of Olin College in relation to US engineering education. Innovations are extended after initial evaluations have demonstrated promise (e.g. the Australian cases that were successful in the award of OLT grants). Extensive and systematic data are used to assess outcomes at a number of levels (James Madison University).

The US cases illustrate extensive and sophisticated use of metrics for evaluating courses, student learning within curricula and in extra-curricular activities and in tracking improvements in identifying and addressing specific issues such as access to higher education, student engagement, retention, attainment and employability. In other contexts (such as Uniminuto), evaluation and use of data for quality enhancement purposes is still developing. A comprehensive, data-driven approach to assessment and improvement is best illustrated in James Madison University, where different types and levels of assessment are in place (assessment of general education, the majors, alumni, for example), where professional practice in assessment is supported and developed and where assessment outcomes are linked to student learning and success.

The cases also reveal a variety of different approaches to evidence-gathering. Quantitative and qualitative research by external evaluators is used in the case of San Francisco State University and City College San Francisco. Action-research is the process used in the Equity Scorecard innovation adopted by the Community College of Aurora. Action learning (as in the Curtin University case) involves real-time learning and professional development for staff in parallel with real-time and ongoing improvements for students in their learning experiences and outcomes.

Integrated and holistic approaches

HOLISTIC: ADDRESSING THE 'WHOLE STUDENT'S EXPERIENCE'

A number of cases can be described as 'holistic' in focusing on all aspects of students' university, college and life experiences. The San Francisco partnership case and Guttman Community College cases, for example, involve progressive building of academic skills, early engagement in students' fields of interest, academic and financial counselling and critical engagement with real-world issues. Uniminuto involves a range of support services that address multiple student needs for academic counselling, financial support, psychological support, life projects and remedial courses while the University of Cape Town's scheme of faculty-level education development units located in a cross-faculty governance body offers a holistic model of support for a diverse and often disadvantaged student body. The transition pedagogy described in the QUT and James Cook University cases is also holistic in its curriculum design for students' first year of university study.

INTEGRATED: BRINGING DIVERSE ELEMENTS TOGETHER TO ENHANCE STUDENTS' LEARNING AND EDUCATIONAL OUTCOMES

These and other cases can also be described as 'integrated'. One form of integration involves bringing together a range of interventions or 'high impact practices' to address students' affective and cognitive skills and to provide social and emotional, as well as educational support (e.g. Guttman Community College's approach to curriculum design and assessment of students' learning outcomes). A second form of integration combines academic professional development in relation to curriculum design or new pedagogical approaches with student learning gains, as in the case of Curtin University. Cases such as Roskilde University and Macquarie University bring other dimensions into notions of 'integration' by also focusing on physical and virtual space as an important aspect of curricular and pedagogical designs.

There are also examples of integration in combining students' extra-curricular achievements with their curricular achievements (in the University of Notre Dame's use of e-portfolios and badges). In addition, integration can involve combining - through team-based approaches - traditionally separate services and activities such as academic teaching and curriculum design with student counselling, advice, guidance and support (Guttman Community College and University of Notre Dame). Other cases illustrate integration (including co-design) of curricula and pedagogies with the world of work, employment, entrepreneurship, professionals, businesses and communities, for example, 2iE in Burkina Faso; Olin College of Engineering; the University of Waterloo; Western Governors University; Widener University; Nelson Mandela Metropolitan University; and the Institute of Technology, Sligo.

In a few cases, notably in Australia, integration means inter-disciplinary approaches, benefiting from the perspectives of arts and sciences in a curricular development to enrich students' learning (University of Melbourne) or to bring diverse cultures and languages into a pedagogical approach to enhance inter-cultural understanding and skills among students (again the University of Melbourne, enhancing domestic and international students' engagement). A separate and unique example of a comparative, international and multi-disciplinary curriculum and pedagogical approach can also be seen in Europe in CEU. And in the Macquarie case, the aim is to integrate the educational experiences of dispersed groups of students - on-campus and distributed learners.

Active, experiential, reflective and student-centred learning

A defining feature of many of the international cases (as in the UK) is their focus on curricula and pedagogies that involve experiential learning, project and problem-based learning, learning in the community or at work, interactive learning in groups and teams within a variety of settings - online, in classrooms, in the community or in work placements. The pedagogical intention is to engage students

with their learning in a variety of ways – through developing cognitive, social and affective engagement – and to acquire academic, vocational, professional and transversal (or transferable) skills.

Active engagement also extends to employers and professionals who involve themselves with student projects or act as judges and critical friends, to learning support professionals engaging in advice, guidance and counselling of students, and to peer-to-peer mentoring, guidance and assessment by students in senior-junior learning relationships. In several cases, there is also a clear emphasis on building learning communities among students through team projects, residential experiences, or online communities, and among staff both for purposes of enhancing professional practice and better integrated support for students. Examples include Roskilde, Louvain and Maastricht in Europe, Waterloo in Canada, Widener University, the San Francisco institutional partnership, Guttman Community College, Western Governors University and Olin College in the US, University of Melbourne, Macquarie University, University of Queensland in Australia, ZiE in Burkina Faso.

Equally significant are pedagogical designs that include student reflection on their learning and achievements, encouraging students to capture and record these – often in novel ways – for future promotional activities post-graduation (e.g. Nelson Mandela Metropolitan University and University of Notre Dame).

Student-designed initiatives, student-led initiatives, and student engagement as partners in projects and innovations are strong features in several case studies, including the University of Bio Bio in Chile, UCL in Belgium, Roskilde University in Denmark, and Olin College in the US.

Benefits and learning gains as indicators of excellence

The cases illustrate a variety of benefits to students and other stakeholders involved in the education enterprise. These benefits suggest 'learning gains' or 'impacts' that are themselves indicators of learning excellence.

BENEFITS FOR STUDENTS

The cases offer details and data on the direct benefits to students' learning and educational experience arising from the innovations described focusing on:

- access and participation for a wider and diverse range of students;
- improved retention and completion rates;
- better levels of engagement with learning;
- enhanced self-efficacy and confidence;
- development of academic and transversal (transferable) skills;
- improved academic attainment and employment opportunities.

These are all clear learning gains for students. However, wider benefits are also reported, including cost-savings and financial support for students (the San Francisco partnership, US; Uniminuto, Colombia), financial gains and enhanced earnings for students (e.g. University of Waterloo), and economic gains for institutions from improvements in completion rates.

BENEFITS FOR STAFF AND INSTITUTIONS

A variety of benefits for staff are also reported including:

- enhanced working relationships between academic and professional support staff;
- gains in terms of professional development for staff including developing a wider range of teaching modes and skills;
- deeper engagement with student learning and success;
- economic gains for institutions from improvements in completion rates of students.

Local communities are beneficiaries both from co-curricular initiatives (such as those at the University of Waterloo and IT Sligo) and from directly created services (as in the Widener case). Employers clearly benefit (in the 2iE Burkina Faso, Nelson Mandela Metropolitan University, IT Sligo, Western Governors University and University of Waterloo cases) as do professional fields in the Franklin W. Olin College of Engineering case, or STEM disciplines in the University of Queensland case.

5. Conclusions

The 26 case studies covered in this research illustrate a dynamic picture both of continuous improvement and, in many cases, of transformational change as universities in all continents struggle with similar issues. The cases show that innovations and developments are being successfully implemented in teaching practices and in the ways that student learning and development are supported. Learning is being made more accessible for a diverse range of students and the student experience is being developed in ways that are more relevant to students' lives and the world of work.

Some governments, states and donor organisations actively support these innovations and initiatives – as in the 19 western states of the US, in Central Europe and also in Australia with its large programme of research into learning and teaching. However, there are also many examples of individual leaders and teams adopting a wholly new model of learning and teaching or changing the existing pedagogical and curricular approaches in their institutions. Doing this in a new or small institution is arguably likely to be easier than in a large comprehensive institution where relevant decision-making is devolved to academic units and faculties. Nonetheless, the case studies include large as well as small institutions, and examples of changes that have been embedded across disciplines and functional boundaries. In the Australian cases, there is a strong focus in national projects on creating frameworks and resources for teachers and building in workshops and staff development so that innovations can be understood, enacted and embedded. Staff training and development also feature strongly in other countries where institutions have clearly invested themselves in ensuring that their own staff can keep pace with new initiatives. In the most sophisticated international examples, innovation and development linked to evaluation and evidence of 'what works' in particular contexts is built in to institutions' strategic plans.

The project team has identified case studies that are relevant to issues being taken forward in the UK, so that the cases themselves and associated resources and reports should prove interesting and useful to the Higher Education Academy and its members. The team also hopes that new ideas and global links to enhance learning and teaching will be fostered through making new connections and collaborations arising from this project. To this end, in each of the case studies, there is a name of the key innovator who has agreed to be contacted to provide further detail about the initiatives, how they have been taken forward, and the outcomes that have been achieved to date.

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Appendix 1: The international team of case study authors

A team was assembled for the research by CHEMS Consulting on the basis of their general reputation and experience, their location, and knowledge of learning and teaching in that country or region. The team members are:

- > **Professor Robin Middlehurst**, Professor of Higher Education Kingston University and Policy Advisor to the Vice Chancellor. Professor Middlehurst is currently seconded part-time to the HEA as adviser to the Executive team. She is an expert on leadership, management and governance in higher education, quality assurance and enhancement, internationalisation and borderless education. She has worked on different projects with all members of the team. She is the Project Leader;
- > **John Fielden**, Director of CHEMS consulting and a consultant in higher education for over 40 years. He has worked in over 45 countries in at least 300 projects covering all aspects of tertiary education. His work has been at system level (for international organisations such as the World Bank and UNESCO) and at institutional level. He is the Project Manager;
- > **Dr Jamil Salmi**, now an independent consultant in tertiary education, after a long career at the World Bank where he was the co-ordinator of its work in higher education and was the principal author of the Bank's 2002 Tertiary Education Strategy entitled *Constructing Knowledge Societies: New Challenges for Tertiary Education*. He has worked in over 90 countries;
- > **Dr Madeleine Green**, worked at the American Council on Education for 35 years becoming Vice President and is now an independent consultant working, inter alia, as a senior fellow for the International Association of Universities and NAFSA (in the US). She is an expert on all areas of tertiary education including leadership, internationalisation and teaching and learning;
- > **Dr Andrée Sursock**, was Deputy Secretary General at the European University Association until 2009 and has been an independent consultant since then. She is an expert on quality assurance and enhancement through her role in developing quality assurance policies and guidelines and undertaking institutional reviews of quality across the European Higher Education Area;
- > **Dennis Murray**, has had 25 years' experience in the internationalisation of universities after a career in university administration. He established and was the Foundation Executive Director of the International Education Association of Australia. He is a Senior Honorary Fellow of the LH Martin Institute for Leadership and Management of Higher Education in the University of Melbourne, and carries out consultancy work for clients all over the world;
- > **Erica Gillard**, is an independent consultant from South Africa. After a career in university administration at the University of Cape Town she has worked as a consultant in Southern African Development Community (SADC) countries and north of the SADC region in Africa, focusing in particular on quality assurance issues. She came to the UK in 2010 and has frequently worked with CHEMS on consultancy projects and reports in the UK and Africa.

Appendix 2: Acronyms

| | |
|-------|---|
| AAC&U | Association of American Colleges and Universities |
| ABET | US accreditation body for programmes in Applied Science, Computing, Engineering, and Engineering Technology |
| ACPA | American College Personnel Association |
| ADP | Academic Development Department |
| ALTC | Australian Learning and Teaching Council |
| ARWU | Academic Ranking of World Universities |
| AUQA | Australian Universities Quality Agency |
| BSL | Blended Synchronous Learning |
| CAFCE | Canadian Association for Co-operative Education |
| CARS | Center for Assessment and Research Studies |
| CBD | Central Business District |
| CBE | Competency based education |
| CCR | Co-Curricular Record |
| CECA | Co-operative Education and Career Action |
| CHE | Council of Higher Education |
| CHEA | The Council on Higher Education Accreditation |
| CHED | Centre for Higher Education Development |
| COL | Centre for Online Learning |
| DHET | Department of Higher Education and Training |
| ECTS | European Credit Transfer System |
| EDU | Education Development Unit |
| EE | Experiential education |
| ERC | European Research Council |
| EUA | Association of European Universities |
| FYCP | First Year Curriculum Principles |
| FYE | First Year Experience |
| GLO | Guttman Learning Outcomes |
| HEADS | Higher Education Access and Development Services |
| HEAR | Higher Education Achievement Report |
| HRD | Human Resource Development |

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| INQAAHE | International Network for Quality Assurance Agencies in Higher Education |
| iCAS | Interactive Collaborative Assessment System |
| ICTS | Information and Communications Technology Service |
| ILO | Institutional Learning Outcomes |
| IoC | Internationalisation of the Curriculum |
| IS-IT | Interdisciplinary Scenario Inquiry Tasks |
| MECESUP | Higher Education Quality and Relevance Improvement Programme |
| NASPA | National Association of Student Personnel Officers |
| NIBRT | National Institute for Bioprocessing Research and Training |
| OLT | The Office of Learning and Teaching |
| PBL | Problem-based learning |
| PLO | Programme learning outcomes |
| PPL | Problem-oriented Project Learning |
| QS | A leading global ranking scheme for universities |
| SADC | Southern African Development Community |
| SCHEV | State Council of Higher Education for Virginia |
| SETA | Sector Education and Training Authority |
| SI | Supplemental Instruction |
| SSA | Student Success Advocate |
| STEM | Science Technology Engineering and Mathematics |
| THE | Times Higher Education |
| TNE | Transnational Education |
| USAID | United States Agency for International Development |
| WICHE | Western Interstate Higher Education Commission |

Glossary

Capstone experience:

A capstone experience may take the form of a seminar, project, paper or thesis and is a culminating experience that provides students with an opportunity to integrate various skills and knowledge acquired through their undergraduate experience and especially their academic major.

Co-curricular learning:

Outside the UK, this term refers to activities, programmes, and learning experiences that complement, in some way, what students are learning in their academic studies, that is, experiences that are connected to or mirror the academic curriculum.

Co-op education:

Co-operative education combines periods of classroom learning with periods of supervised work experience that is an integral part of the academic programme.

General education:

In US institutions, general education refers to a portion of the curriculum (generally between one and two years of coursework) that provides broad foundational skills and knowledge. General education is designed to enable students to develop such skills as critical thinking, quantitative reasoning, effective writing and speaking. Some institutions address general education through a distribution model (required courses in the Humanities, Social Sciences, and Natural Sciences) and others through a core curriculum (a sequence of courses taken by all students).

Rubrics:

In the US, the term rubric means a scoring guide that specifies the criteria, or characteristics, that student work should exhibit, and describes specific quality levels for those criteria.

Scaffolding:

Scaffolding is the support given during the learning process which is tailored to the needs of the student with the intention of helping the student achieve his or her learning goals.

Service learning:

Outside the UK, service learning is regarded as a method of teaching that combines classroom instruction with meaningful community service or engagement. This form of learning emphasises critical thinking and personal reflection while encouraging a heightened sense of community, civic engagement, and personal responsibility.

Students in transition:

The term covers the transition of students from secondary to higher education, but is often used more widely to describe the total learning experience in a student's career in the institution.

Technikons:

Technikons in South Africa were originally designed to offer vocational training at tertiary certificate and diploma levels. They were later granted the right to offer BTech degrees, but still retained their vocational origins. In the restructuring of South African higher education post-apartheid, some technikons were merged with traditional universities to become what were called comprehensive universities.

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