UNIVERSITY OF OXFORD

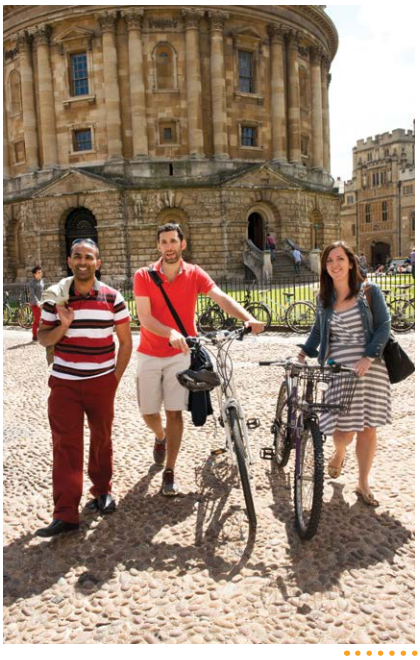
International Trends in Higher Education 2015

Introduction

Internationalisation is of growing significance worldwide, with economic, political and social changes driving an increasingly global knowledge economy. Internationalisation within universities continues to develop apace as institutions move from equating international strategy with international student recruitment to developing mature internationalisation agendas that incorporate recruitment, research collaborations, and capacity-building. While UK universities have always been engaged in international recruitment and research, we see this expanding as technological, political and demographic changes make university internationalisation a strategic goal for many governments.

This *International Trends* report provides an annual overview of changes and broader developments in higher education around the world. We have selected the most significant changes affecting international student recruitment and study abroad, international research collaborations and international expansion in the form of branch campuses. The role of governments in shaping campus international strategies and engagement overseas is also discussed. In addition to providing an update on the themes discussed in depth in the 2014 *Trends in the Globalisation of Higher Education* report, this year we have included two case-studies on particularly topical issues: the role of technology in education worldwide, and the use of higher education as a tool to achieve economic success and development.

Based on a survey of a range of statistical tools and reports provided by the OECD, UNESCO, the US Institute of International Education and publications produced by the UK Higher Education International Unit, the British Council, and the Department for Business, Innovation and Skills, this report highlights developments in international higher education of likely interest to Oxford. While publications by the UK government and NGOs are widely disseminated, as is the University's News and Information Office's Daily News Alert, none provide a general overview of significant developments in the sector outside the UK. This report thus offers a summary of key trends in higher education to illustrate the global context of Oxford's international engagement.



The International Strategy Office is responsible for developing a coherent strategy to promote Oxford's international relations, global profile and international competitiveness. The work of the office is broad and includes such issues as Oxford's approach to:

- Promoting deeper engagement with key countries/regions
- International collaborations (research and education)
- International educational experiences for all students
- Integration of international academic staff and students
- International student recruitment and funding

International Strategy can provide information, advice and guidance to colleagues within the University on key countries and regions, existing collaborations with overseas institutions and opportunities being developed for international engagement.

The office provides information to outside contacts on Oxford's international links and often acts as a first point of contact for overseas institutions wishing to visit Oxford University in order to discuss potential future collaborations at the institutional level. The office also co-ordinates links with the international alliances of which Oxford University is a member.

*References are provided in the notes, and the International Strategy Office would be happy to provide further details and analysis of any topic covered here. Requests for further information should be addressed to Katherine Benson at the International Strategy Office, University Offices, Wellington Square, Oxford, OX1 2JD or via email at katherine.benson@admin.ox.ac.uk.

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Part One
New Developments in International Higher Education

Student mobility and study abroad

International student mobility is shifting with traditional destinations losing market share

Once a barometer of both university internationalisation and internationalisation of the broader economy, the presence of international students is now a core part of the student body for the world's leading universities. The global population of students who move to another country to study continues to rise, reaching almost 5 million in 2014 – more than double the 2.1 million internationally mobile students in 2000 – with an annual increase of 10%.[1] The OECD has projected that, with demographic changes, international student mobility is likely to reach 8 million students per year by 2025.[2]

After remaining largely stable over the last decade, the balance of host countries is beginning to change. For now, the USA remains the most popular country for international students, followed by the UK, Germany, France and Australia, with half of all international students pursuing degrees in these five countries. However, the USA and UK's traditional market share is declining, with Australia and Canada increasing in popularity alongside intra-regional mobility (those who choose to study abroad within their home region).[3]

As has been the case for the last few years, the most mobile students remain those from Asia, with China, India and South Korea the leading source of international students.[4] Almost one in six international students is Chinese, and Asian students account for 53% of all students studying abroad.[5] Not all of these students travel far: Japan and Korea have high numbers of international students from neighbouring countries: 81% of international students in Japan and 75% in Korea come from other East Asian countries.[6] British students remain much less likely to study abroad than students of other European countries, with 6% percent spending some or all of their time working for a degree in a university overseas.[7]

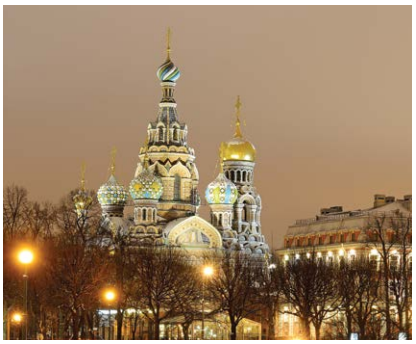
At present India is the UK's second largest source of international postgraduates (after China), but a recent British Council report indicates that demographic changes and increasing demand means that the percentage of international students from Nigeria is likely to overtake the percentage from India by 2024. It predicts that the number of Indian postgraduates in particular will form only 9% of the growth in international student numbers to 2024 – around 24,000 students – compared with 29,000 postgraduates from Nigeria.[8] Changes in UK visa regulations have led to a fall in the number of Indian students in the UK, as highlighted in the 2014 Trends report, in contrast to the USA where more than half of all international students come from India.[9] In contrast, the number of students from China studying in UK universities is strong and growing, with a 44% increase over the next decade predicted by the British Council.[10]

Political and demographic changes continue to shape student mobility worldwide

As the broad outline of student mobility slowly changes, political and demographic changes continue to shape government policies towards international students. In Asia, for example, ASEAN states are working to encourage domestic students to study in Asia rather than heading to western universities, and to this end, have established a 'Common Space of Higher Education' to encourage cross-border student mobility and academic integration across Southeast Asia.[11] Influenced by Europe's successful development of the Bologna Process and European Higher Education Area, a credit transfer protocol is already underway. Two new programmes to encourage student mobility within Asia have recently begun: 'ASEAN International Mobility for Students' and 'Passage to ASEAN', with the former now including 59 universities across seven countries, while the latter provides virtual tours and study tours for students across the ASEAN region.[12] At present there is still a comparatively low level of student mobility within the region, except between Malaysia and Indonesia which now stand as a model for the programme.[13]

Universities in Latin America are becoming increasingly internationalised, with both inbound and outbound student mobility growing. Brazil remains the largest source of outbound students in Latin America, closely followed by Colombia. In part this is driven by growing demand from Colombia's nine million university-age students, but also by the government's 'National Programme for Advising Higher Education Institutions on Internationalisation' and by Colombian employers who value degrees obtained overseas.[14] Recent joint mobility programmes with Colombian universities include the *Programa de Movilidad Académica*, which brings Chinese students to teach Mandarin at Colombian universities for one year. By 2013, 141 Chinese students had come to Colombia under the aegis of the *Instituto Colombiano de Credito Educativo y Estudios Tecnicos en el Exterior* (ICETEX) Programme.[15]

Sub-Saharan Africa is also experiencing a rapid growth in demand, with the population predicted to grow from 1 billion today to 2.4 billion in 2050, and with a set of education systems where demand already far outstrips supply.[16] Almost half of sub-Saharan students currently choose to study in South Africa, with most of the remainder studying in France, the USA or UK and other European countries. In the 2014 Trends report, we predicted that the number of African students studying in the UK – including Oxford – would increase over the next decade, and indeed, this pattern is reflected in the latest admissions figures. Over the past five years, Ghana and Nigeria have seen a doubling in the number of their students at Oxford.[17]



Government strategies are driving a range of international experiences for students

Government strategies have continued to drive a range of international experiences for students over the past year, with three major new initiatives announced in Russia, Germany and the USA. Russia's '5/100 initiative' was launched in 2012 and has been designed to boost the number of international faculty in Russian universities to 10% and international students to 15% by 2020 as part of a wider plan to develop the global competitiveness of Russian research and higher education.[18] There is considerable financial backing behind the project, which has two primary aims: to encourage international students to study in Russia, and to have at least five Russian universities ranked in the top 100 in the world by 2020.[19] To raise standards, a foundational year in Russia has been made a prerequisite of university entrance, with aspiring foreign students required to take courses in Russian language and literature at Russian universities before enrolling for a degree.[20] The Ministry of Education and Science launched a new scholarship programme in 2014, which will provide $133.3m funding for 3,000 Russian postgraduates to study overseas at some of the world's leading universities between 2014 and 2017.[21] A measure taken largely to reverse Russia's severe brain drain of recent years, scholarship winners will need to commit to return to Russia and work in a state organisation or enterprise for at least three years after graduation.

Germany is also pushing study abroad for its university students, with a new programme that aims for half of all degree students to experience study abroad by 2020. At present, roughly a third of all German students spend some time at a university outside Germany during their degree, but the German government and Academic Exchange Service (DAAD) are working to increase this to 50%. Funding is available for 118,000 German students to study abroad each year, with further funding to support international study for 36,000 low income students and for universities to offer scholarships for a further 10,000 able students. Germany also aims to increase the number of international students studying at German universities by 17% over the next few years. In contrast to brain-drain driving similar programmes in Russia and Asia, the primary incentive for Germany is to increase their competitive advantage in business, science and industry, and to "gain long-term friends of Germany throughout the world".[22]

In the USA, the Institute of International Education has launched a new five-year programme, 'Generation Study Abroad', to double the number of students obtaining international experience during their degree from the present 295,000 (10% of the student population) to 600,000 by 2019.[23] The move is driven by recognition that globalisation is both changing the way the world operates, and changing the skills and experience employers look for in their graduate hires. The IIE is working in partnership with a range of governments, higher education institutions and companies to expand the number of opportunities for US students to study and intern abroad, whether through academic exchange partnerships, international placements or scholarships for international study.

Study abroad is valued by UK and European employers

While study abroad and other international experiences are widely considered to be valuable for students, and to develop a wide range of soft skills such as inter-cultural communication, openness to new challenges, problem-solving and decision-making skills in returnees, there has not always been a strong empirical evidence base to support efforts to broaden student internationalisation. The European Commission's 2014 report on the '*Effects of mobility on the skills and employability of students and the internationalisation of higher education institutions*' found that there is clear quantitative evidence to illustrate the value of study abroad for students, both in terms of their initial employability as new graduates, and on their later career development.[24]

Overall, former Erasmus students were found to be half as likely to experience long-term unemployment compared to their peers who remained at their home universities, and the effect was a long-lasting one: five years after graduation, the unemployment rate for Erasmus alumni was 23% lower. Given the high rate of unemployment for European youth over the past decade, particularly in southern Europe, study abroad has a major impact on students' chances of employment and their opportunity to begin an independent life after university. Employers specifically mentioned that the skills they valued in new employees included openness to new challenges, problem-solving and decision-making – all skills that living and studying in a new country develops – with 64% stating that international experience was an 'important' factor in recruiting new employees.[25]

Part One
New Developments in International Higher Education

Universities as international brands

International branch campuses are expanding to include non-traditional countries

Over the past decade a number of universities have opened branch campuses overseas – Nottingham's campus in Ningbo, China and NYU's branch in Abu Dhabi are perhaps best known – bringing the total to nearly 220 campuses worldwide.[26] That trend has continued, with universities beginning to move into previously untried territory to establish teaching centres and branch campuses. Lancaster and Strathclyde universities both signed an agreement in May 2009 to establish campuses in Pakistan's first 'knowledge park' in Lahore.[27] Lancaster already has links with Pakistan, having taught joint degree programmes in Business, Computing and Engineering in conjunction with COMSATS Institute of Information Technology since 2010, and has a branch campus in Accra, Ghana, underway.[28]

Many of these campuses have been explicitly designed to attract international students who might not be in a position to travel to Europe or the USA for their education – a move that has been timed to fit with the projected expansion in the number of students entering higher education in Asia and Africa. Aberystwyth University, for example, followed Middlesex University in opening a campus in Mauritius in 2014, with the first intake beginning their degrees in accounting, business, and management in 2014–15.[29] A number of US universities are working together with Tunisia's Université Montplaisir Tunis to open a $100m US university near Tunis. Education provided at the university will be based on the US model, and students will spend two years studying in Tunis and then two years at the US partner universities, graduating with a double degree.[30]

Other universities have prioritised expanding into non-traditional countries to provide study-abroad opportunities for their existing students, such as the University of New England's new campus in Tangier, Morocco. UNE students will be able to spend a semester or year studying Arabic and Moroccan history and culture in Tangier, and the university's Moroccan programmes aim to develop students' understanding of Middle-Eastern and North African culture and politics.[31]

While branch campuses remain a popular facet of institutional international strategies, there have been a number of high profile closures. It is worth highlighting that most of these closures were free-standing and primarily self-funded campuses, in contrast to the new campuses profiled above, which are to be opened in conjunction with local partners. Over the last six years a number of well-known American, Australian and UK international branch campuses ceased operation, with Johns Hopkins in Malaysia closing and UCL re-evaluating their base in Australia.[32] In most cases closures have been related to economic and political changes or falling enrolment numbers, while others have been impacted by changing government policy and the withdrawal of financial support by the host government. UCL chose to withdraw from its Adelaide campus after economic and political challenges led to a change in Australian government policy and a subsequent loss of support.[33]

Others have faced domestic pushback from faculty members and administrators for varying reasons, ranging from disquiet over the political environment surrounding the new campus to concern that focus on developing campuses overseas weakened the education provided at the home campus. Both Yale University and New York University faculty have expressed dissent at overseas expansion plans, while domestic politics in Russia are creating roadblocks to MIT's planned project in Skolkovo, Russia.[34]

International engagement is increasingly research-focused

As we highlighted in the 2014 Trends report, as institutions develop more experience internationally, there is a growing shift away from student-focused initiatives, that is, international student recruitment and branch campuses, towards developing research capacity in partnership with colleagues overseas. In part this is a tactical shift reflecting the growth of academic engagement in industrial R&D, and in part this has grown out of an understanding that developing research partnerships works for the benefit of both institutions.[35]

ETH Zurich's Centre for Global Environmental Sustainability in Singapore is one such partnership. Established in collaboration with the Singaporean National Research Foundation in 2010, the Singapore Centre's work focuses on influencing policymakers and industry on issues related to climate change and the threat of climate change to the wellbeing of inhabitants in tropical and subtropical megacities, in addition to research and training of postgraduate researchers.[36] The Centre was designed to look for solutions to global challenges and focuses on areas that would be difficult to handle successfully or meaningfully in Switzerland, for instance the joint ETH-Singapore research on green technologies in tropical cities.

A new joint UK-US initiative aims to boost global multilateral collaboration by providing grants to international university consortia working on a range of STEM issues of global significance.[37] Unlike the ETH Zurich Centre in Singapore, the US-UK Global Innovation Initiative is not based in a specific location, but works to strengthen research collaboration between US-UK universities and emerging economies, with each collaboration having a partner from the US, the UK, and at least one out of the four partner countries: Brazil, China, India and Indonesia. The programme thus develops research in four emerging economies, and brings access to new research projects and new research funding for established universities in the UK and USA.

Institution-industry partnerships overseas are growing and diversifying

As institutional confidence in substantial international engagement grows, many universities are developing broader links with industry as a way to strengthen and diversify their research. In part a response to recent budget cuts in government and research council funding across Europe and in part a response to the drive to demonstrate impact, institution-industry partnerships abroad are growing and diversifying. In many areas these links are explicitly encouraged and supported by government initiatives, as with Horizon 2020 in Europe, the largest multinational research programme in the world.[38] The EU will invest around €80 billion in research and innovation projects between 2014 and 2020, many of which call for large scale, multipartner, interdisciplinary research teams drawn from a number of countries within the EU and across the world.[39]

In France, a huge government-driven project has established a new university, Paris-Saclay, which aims to form a 'knowledge hub' around Paris, akin to California's Silicon Valley. The campus, initially funded with €7.5billion EUR, will host universities, research institutes, hi-tech businesses and start-ups. So far, 19 institutions have joined Paris-Saclay, which will host 10,000 researchers and 70,000 students. The university's new president, Dominique Vernay, stated that the aim behind Paris-Saclay's creation was to "...strengthen the links with industry, strengthen our ability to launch start-ups.... The essence of the plan is that we are missing growth in France. It's not the big companies, what we're missing is the new technology, those small companies that grow very fast and become new players..."[40]

Meanwhile, Ecuador's new 'city of knowledge' in Yachay is developing apace. Opened in early 2014, the 4,000 hectare site near Quito will be home to the new Yachay University, but also to all 13 of Ecuador's public research institutes, a technology park, and industry.[41] As with Paris-Saclay, Yachay aims to follow the model of the success of Silicon Valley and the Route 128 corridor outside Boston, with local universities, high-tech and biotech companies sharing knowledge, ideas, researchers, and in many cases, resources, to build advanced laboratories and conduct ground-breaking research on a larger and more innovative scale than each organisation would manage alone. Ecuador hopes that Yachay will speed the pace of higher-level study and research in Ecuador's universities – institutions that, until recently, were largely focused on teaching conducted by part-time professionals, rather than salaried professors.[42]

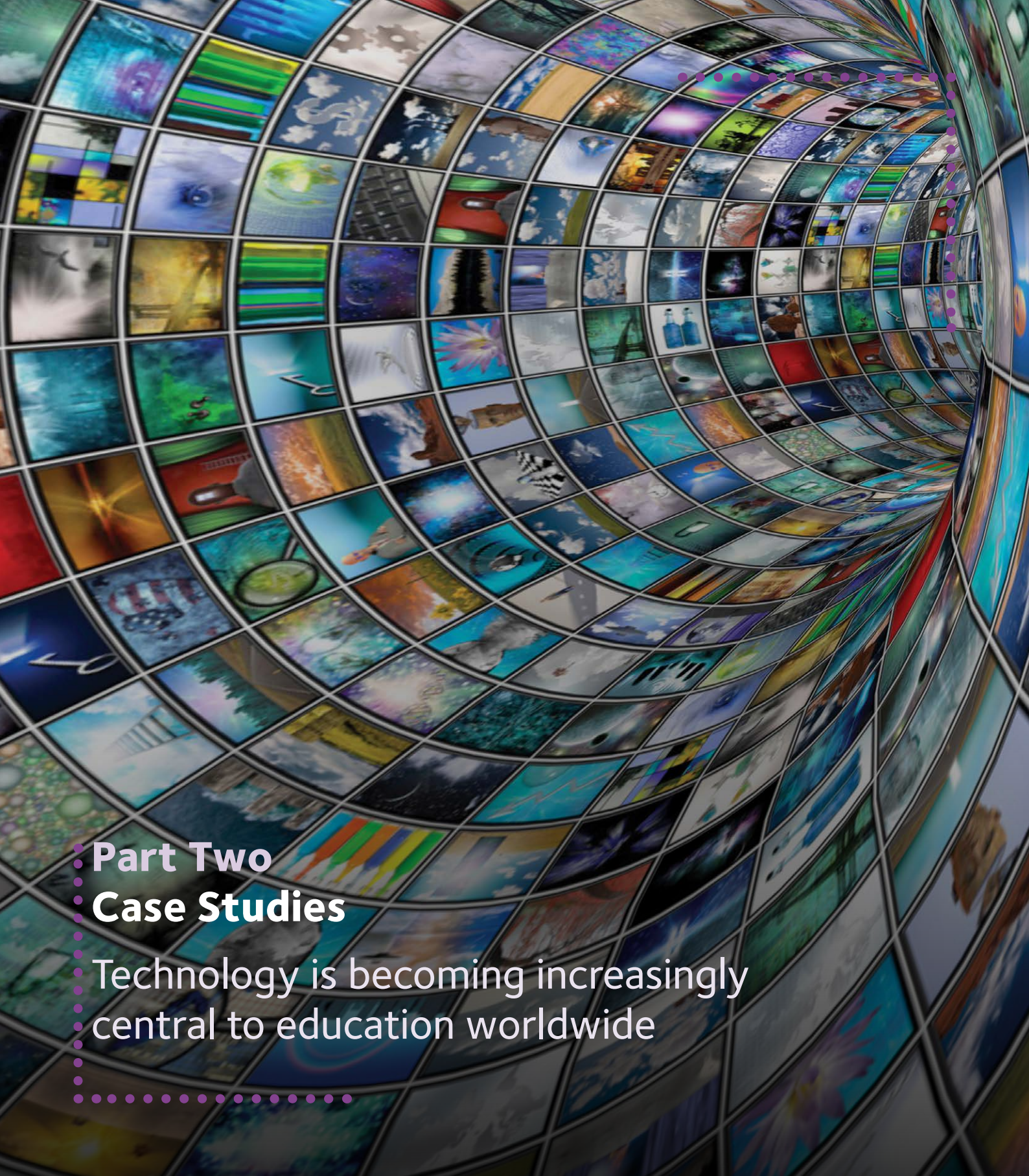
The move towards applied research, quantifiable impact and academia-industry partnerships has garnered pushback in some quarters, with transparency organisations and some academics concerned that corporate interests are beginning to direct research and teaching. Transparency International Germany noted that clear rules around how universities entered into such research contracts needed to be established as this type of institutional relationship matures.[43] A number of charities and NGOs have also expressed concern over the influence of corporate donations and joint research programmes on academic research. The US-based Food and Water Watch reported their concerns that private donations steered agricultural research towards the goals of their donors, potentially discouraging academics from developing research that might be critical of donating industries, for example, by examining the public health implications of certain industrial agriculture practices.[44] Similarly, a recent report by Scientists for Global Responsibility highlighted the detrimental effects of business links on UK academic research in a range of sectors, including pharmaceuticals, defence and biotechnology.[45]

The appeal of 'education hubs' is broadening

Our 2014 Trends report highlighted the growing popularity of education hubs in many countries, particularly in the Middle East and East Asia. While existing host countries are still focusing on developing their education hubs, and particularly when it comes to research related to major national problems such as food and water security, there is evidence that governments are now taking a broader approach. At present, all six countries with education hubs have a significant degree of host government support: for instance, the Qatari government fully covers rent and operating costs, Malaysia provides 50% funding, and Dubai has provided land and infrastructure (though resident universities cover their own rent and operating costs).[46]

A new approach is being taken by those developing international campuses in the USA, with partner universities themselves providing the majority of the start-up costs and ongoing funding, rather than receiving governmental support. The driver for international campuses in western countries (as with Imperial West, in London) has thus far been part of an institutional push towards globalisation and support for international collaborations, rather than a need to fill a significant gap in education, research and knowledge production in the host country. The University of Warwick, for example, is in the process of developing a new campus in Sacramento, California to add to its portfolio of connections with Monash University, Australia and the Center for Urban Science and Progress in New York.[47] Warwick's new campus will initially provide postgraduate courses before branching into undergraduate provision and a campus for 6,000 students by 2031.[48]

The University of California at Berkeley is to break the mould of 'global hubs' by hosting a new global campus in California at Richmond Bay, rather than overseas.[49] Although currently in the early stages, Berkeley plans to host four or five universities from Asia and Europe at its new 134 acre campus. One of the driving factors behind the decision to host the campus in California rather than overseas is the issue of academic freedom for students and staff – an emerging issue for many US faculty working overseas, who have faced restrictions on their freedom of speech within and outside the classroom.



Part Two
Case Studies

Technology is becoming increasingly central to education worldwide

Widening Access

Technology is becoming central to the process of learning and teaching in higher education and, in some countries, is driving wider access to education and training. As societies rapidly develop into knowledge-based information economies, information technology becomes a key driver of both economic competitiveness and social development.[50] Fluency in information technology has thus become a central pillar of higher education – both implicitly in how information is shared and explicitly in preparing students for the global markets they will enter after graduation.

Massive Open Online Courses (MOOCs) have become one of the most high profile aspects of the use of technology in teaching in recent years, with 142 universities providing free courses open to all participants via Coursera and edX alone. Initially a development of the movement to develop open education resources and widen access to education, online courses are nothing new, with the UK's Open University offering a number of free online courses since 2006, and India's Institutes of Technology using video and web-based teaching since 2003.[51]

Stanford University launched its first MOOCs – Stanford courses provided for free, online, and open to students from all over the globe – in 2011, swiftly followed by Ivy League universities, including MIT, Harvard and Princeton.[52] A wide range of subjects is currently on offer, primarily at undergraduate level and including humanities, science and technology.[53] Some courses are designed to stand alone, while others offer credits to accumulate for certification. The University of Bristol's "Cracking Mechanics" MOOC is aimed at first-year students about to begin a degree at Bristol to introduce them to the basics of Mechanics before they begin their first term.[54]

The use of MOOCs to widen access to education has driven the development of other online courses by collaborative university partnerships in East Asia and South Africa, both regions that were initially users rather than providers of free online education. Tsinghua University developed its own MOOC provider in 2013, and this offers over 60 courses in Chinese.[55] In South Africa MOOCs are perceived as a tool to widen access to education at low cost, and South Africa's 2014 education White Paper explicitly encourages institutions to expand online and blended learning.[56] Most of South Africa's 23 universities offer some form of distance learning online, and with the number of university-age students across Africa predicted to double from 200 million to 400 million by 2045, online learning fills a gap in both opportunity and affordability.[57]

However, several years after MOOCs entered the public domain, enthusiasm is beginning to wane. MOOC enrolment is high, but student retention and completion rates are low. A 2013 study noted that only around 5% of students across seventeen Coursera MOOCs completed their courses, and that those who were most successful in this type of online class were those who had already completed a high level of education, and not those at whom MOOCs were originally aimed.[58] Faculty members are pushing back against MOOCs too, with philosophy professors at San Jose State University refusing to use an edX Harvard philosophy MOOC in their classes, stating their concern that the University aimed to replace San Jose State faculty with free courses taught online and, in doing so, would diminish the quality of education offered to their students.[59]

Perhaps the most contentious issue facing MOOC providers at present is the question of whether to offer credit for their courses and, if so, whether to charge for that credit and the associated diploma or degree. Georgia State University has agreed to accredit MOOCs that its enrolled students have taken in the same way that AP courses can be used as credit towards a degree, and the Universities of Wisconsin and Colorado State allow students to take MOOCs and complete assessment for credit.[60] Awarding MOOC credit can form a path to college education for non-traditional students, but the process of certifying courses and reliably assessing students who learn online at a distance remain problematic at present.

New ways of teaching

Alongside classes taught wholly online, technology is also influencing traditional campus-based teaching and learning. Virtual learning environments, flipped classrooms and blended learning have all become an accepted part of the classroom lexicon over the past few years. All three offer new approaches to traditional campus-based teaching, with virtual learning environments such as Blackboard and Moodle primarily used for course administration, storage of course content and additional resources, while flipped classrooms have influenced pedagogical methodology by offering a way to blend online and class learning.[61]

Flipped classrooms, such as those at Cornell, Illinois and Stanford universities, provide a way to invert the traditional pattern of information and concept acquisition in class and problem solving at home, with faculty posting their class lectures online for students to view before using class time for application, problem solving and assessment.[62] Flipped teaching aims to cultivate deeper thinking and more active learning for students, with early assessments of productivity such as that published by San Jose State University indicating that replacing live lectures with pre-recorded videos increased student test scores. San Jose State students taking the flipped electrical engineering course watched revamped edX lecture videos at home and attended classes twice a week to discuss topics and undertake a range of activities. Their median midterm test scores were around 10 points higher than those of the students who took the traditional course.[63] Similarly, flipped class pharmaceutics students at the University of North Carolina had test scores 5.1% higher than their peers.[64]

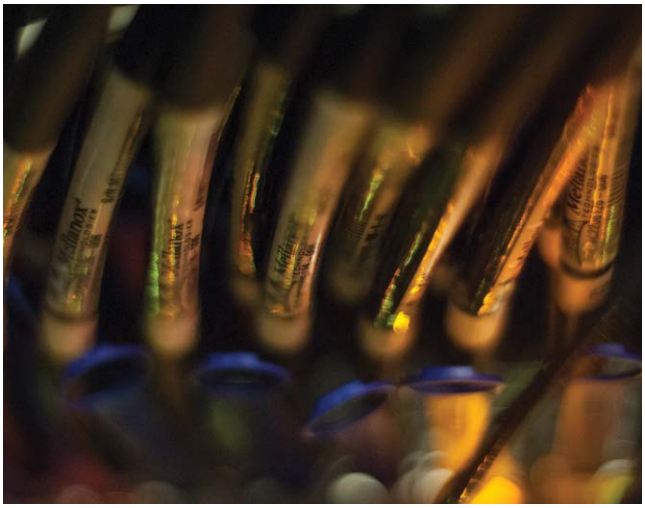
The University of Illinois at Chicago has mainstreamed blended learning, integrating online and face-to-face teaching across 80 UIC degree programmes. UIC chose to target three areas of study – those with particularly high demand: undergraduate general education, business education and graduate level health professional education.[65] Similarly, Stanford has integrated blended learning into its teaching to such an extent that the university now has a Vice-Provost for Online Learning.[66] Wide uptake of online courses, – whether as freestanding courses or as part of a flipped classroom, has also given faculty access to a new set of metrics for assessing student participation and engagement in a course. Online courses collect and report data about learners, allowing the course to be adapted in response to student needs, thus driving up student comprehension and test scores.

Internationalising access to research

Much of the debate around technology in higher education in recent years has focused on online learning and teaching and MOOCs, yet other game-changers are also developing in the background. Technological innovations such as digital curation and preservation, (big) data and analytics, and open access to peer-reviewed scholarly research are already significantly shaping both research and teaching. Digital technology gives researchers new tools to facilitate data collection, analysis and dissemination, while students now have access to an ever-increasing range of online resources for study.

Digitisation of manuscripts and rare books, and digital curation of webpages and other ephemera has been a mainstream practice for libraries for some years, but recent developments in technology have led to a huge increase in mass digitisation as a way to expand access to books and manuscripts for readers all over the world. The British Library, for example, has digitised many of its manuscript collections over the years, but the process is slow and painstaking. The Library is now working in partnership with technology companies and funding bodies to develop much larger projects, putting the cultural heritage of the UK online for anyone to access, anywhere in the world and for free.[67]

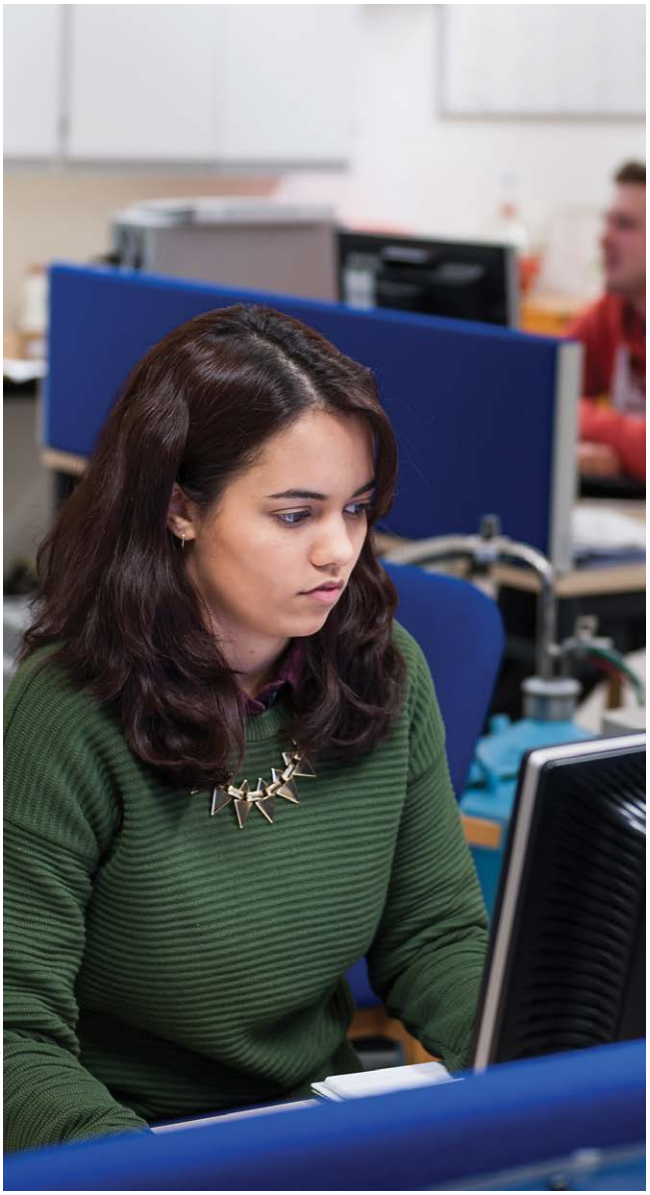
Technology is being used to work around a range of issues facing libraries and archives worldwide, from the practical (manuscripts and books are vulnerable to damage and theft, physical libraries have limited space) to the ideological – the democratisation of knowledge, the interpretation of content for new audiences, and indeed, the possibility of opening up entirely new fields of research, such as data mining in the humanities. To this end, the European Commission has funded a new internet portal, *Europeana*, which gives students and researchers all over the world access to millions of books, paintings, films, museum objects and archival records drawn from libraries and archives across Europe.[68] Initially launched in 2010 with 4.5 million objects, the portal continues to grow and improve access to digital collections across Europe.



Open access

Providing digital access to library holdings and archival collections also sparked interest in opening access to research findings by moving to a model of online access to peer-reviewed academic research, whether journal articles, theses or monographs. There are two primary ways an author can make his or her work open to the public, and that is by either placing their work in an open-access repository such as Oxford's Mathematical Institute Eprints Archive and Text Archive, or by publishing an article with an open access journal.[69] Some open access journals charge publication fees, others do not.

While providing open access to scholarly research results has the huge advantage of cutting research costs and improving research in developing countries, it has been subject to intense pushback in some regions, including within the UK.[70] The primary argument against open access is the removal of peer review from the publishing process, with the attendant risk of reducing future research quality, but with research funders supporting open access as a means of disseminating the research they fund and support, new quality assurance processes are being put in place. For example, all articles published on research funded by the US National Institutes of Health must be included in the open access repository PubMed Central, whether fully peer-reviewed or only screened. By 2014 nearly 1,800 journals were represented in PubMed, an increase of 112% since 2010.[71] A recent survey by Taylor and Francis indicated that academic acceptance of open access is growing,



Part Two
Case Studies

Education as a tool to achieve economic success and development

‘Internationalisation’ to achieve other goals

Education has long been seen as a crucial tool for national development, with various education initiatives designed to work towards eliminating poverty, increasing the health of a population or enhancing local economies, among others. The 2014 Trends Report highlighted the ways in which international education has developed into a means to achieve a range of broader goals, ranging from study abroad to improve students’ work readiness, the strategic development of international collaborations to drive up national university research rankings, to using transnational education to build regional identity. These changes are expanding the nature of tertiary education at all levels to include personal skill development, new ways of thinking, and practical job preparation in addition to subject-specific knowledge and skills.

A recent UNESCO report highlighted the link between investment in postgraduate education for national economic development, and how this has influenced education policy in South-East Asia.[73] In Malaysia, for example, the National Higher Education Strategic Plan, Vision 2020, has been designed to develop Malaysian research capacity to both reduce the national reliance on foreign industrial research and to attract international investment.[74] Similarly, the Thai Ministry of Education’s ‘National Research Universities Project’ aims to develop Thailand’s international competitiveness by producing “research that can be transferred and generate income for communities and industries”.[75] In both countries, international recognition of the quality of their education thus became a pivotal part of their plan to draw in international investment, and so raising the numbers of postgraduate students and pushing universities up the international university rankings became part of the broader national economic development strategy.

Japan’s drive to internationalise education has a different set of goals to those for Malaysia and Thailand, with Japanese reforms aiming to prepare Japanese graduates to better compete in a globalised workplace.[76] Reforms currently under consideration include introducing English-language teaching to pupils from age 8, rather than 10–11 as at present, expanding provision of the International Baccalaureate, and encouraging Japanese university students to study overseas.[77] Subsidies of between 120 and 260 million yen have been offered to universities to increase the number of their students studying abroad for part of their degree, since “universities need to make [students] more open to the global environment”.[78]

Improving the quality of higher education

Regional approaches to the relationship between the quality of higher education and development are changing, with a new focus on research quality bringing institutional quality assurance in some regions, while others are also increasing the number of postgraduate students as a way to improve the quality of national research and development. Over the last three years, funding for Mexico's National Council for Science and Technology (Conacyt) for example, has increased by 32 percent, on the back of the new president's promise to raise spending on R&D to one percent of GDP by 2018, double the current amount of 0.48 percent. Part of this funding is for government research grants, part is directed towards improving graduate programmes and student exchange, and part to increasing the number of postgraduate students.[79]

Similarly, developing the quality of its higher education and research is a priority for the Brazilian government, which is currently working to transform Brazil into an international knowledge economy. At present only one Brazilian university – São Paulo – appears in the top 300 universities worldwide in the THES rankings, despite a 205% increase in the education budget between 2003 and 2013. In 2013, only 4.2% of university courses were deemed 'internationally excellent' by the Brazilian QA body, CAPES. This is attributed in part to the dominance of unregulated private institutions within Brazil's university sector, but also to poor research ethics, low salaries and financial mismanagement within a number of universities.[80]

The African Union Commission has identified quality assurance as one of the major challenges facing higher education across Africa, particularly in the absence of national regulatory agencies to monitor the quality of higher education and research. The AUC is now working to set up a new African higher education quality assessment agency to help each member country develop regulatory bodies. At present 21 African countries have accreditation bodies, but these do not systematically assess the standards and quality of the higher education provided in local universities.[81] The European Union is supporting these plans through its new Pan-African Programme which will focus on developing capacity in quality assurance as part of its wider plans to encourage African continental integration.[82]

Professional education and job training

Over the past few years there has been a significant change in the way that doctoral education in Europe is delivered. The drive to push up national capacity and economic competitiveness globally has led to an increased focus on the job readiness of new graduates, particularly at postgraduate and postdoctoral level. In response to employer concerns about the practical, employment-oriented skills of new graduates, many universities have already developed new administrative structures and doctoral schools to support wider skills development for their students, particularly research students.[83] The League of European Research Universities published a paper, *Good Practice Elements in Doctoral Training*, in 2014, which highlighted the shift towards structured doctorates in universities across Europe. This new form of PhD training still centres around the production of a thesis based on original research, but also incorporates formal research training alongside additional courses on topics such as leadership and management, conference organisation, and communicating specialist ideas to non-specialist audiences among others.[84] The new emphasis on formal training – both for specialist and transferable skills – is designed to better prepare doctoral students for a wide range of careers within and beyond academia.[85]

Other universities encourage research students to undertake international experiences and research placements, with several British universities establishing professional skills summer schools for their research students. Imperial College London has established an annual international "collaborative professional skills development summer school" with partner universities in Singapore and Hong Kong, while UCL established the Higher Education London Outreach programme to give UCL students at all levels experience in working in business through specific consultancy projects.[86] The interdisciplinary pan-European LERU Doctoral Summer School has been designed to help doctoral students develop professional and personal skills beyond their research. LERU summer school attendees tackle subjects such as essential enterprise skills, leadership skills for employment in enterprise, government and academia, through to how best to communicate academic research.[87]

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