Case studies of Australian and Indian quality assured online learning

Prepared for:

Australian Government
Department of Education and Training

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2018
Around 50 percent of India’s population is under the age of 25 and within the next five years India will have the largest tertiary-aged population in the world. This young population has high aspirations, access to technology and a strong demand for quality education. These factors, coupled with a series of reforms and new initiatives, has led to enhanced acceptance of, and a push for alternative modes of learning in India.

India has enormous expertise in technology and science. Australia has major strengths in interdisciplinary, problem-oriented research and teaching, for example in relation to climate change, global health, and water/sustainability. Australia and India already collaborate through blended degree programs, joint PhD programs, and ambitious research programs, both countries are seeking to expand this engagement. Our collaborations are an order of magnitude below where they could be, and yet there has been rather little intensive reflection on online learning as a space for collaboration. Australia and India stand ready to activate our complementarities and experience to bring our partnerships into the 21st century by using online education to collaborate in more innovative ways.

This is where this report steps into breach. It provides a collection of case studies that offers a distinctive perspective of success with online learning, as well as valuable insight into areas for mutual learning and potential collaboration in this space for both countries. Australian and Indian students deserve to be able to sample the best scholarly teaching outputs of both countries as well as benefit from collaboration between thinkers in Australia and India. This report showcases how quality assured online learning in Australia and India is successfully emerging from innovative cultures and institutional practices. The healthy growth of student enrolments in higher education, professional development and lifelong learning attests to the opportunities to be realised in the online learning space.

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INTRODUCTION

These are exciting times for higher education institutions, industry and governments seeking to leverage technology for advancing student learning in the 21st century.

Mary Australian and Indian higher education institutions have adopted new technologies, curriculum and pedagogies to introduce quality assured online learning. Some have longstanding expertise in open and distance education, while others have specialised in delivering high quality, face-to-face, regular mode teaching.

The Commonwealth Department of Education and Training (DET) commissioned the Australia India Institute to develop a collection of ten case studies from Australia and India. This collection aims to illustrate how quality assured online learning is being prioritised and developed by higher education institutions and education technology companies in both countries. The objectives of the collection are to identify the key features and approaches used for developing innovative cultures and strategies that foster high levels of student engagement and student achievement.

The APEC Quality Assurance of Online Learning Toolkit (2017) (the APEC toolkit) provides the framework for assessing the approaches adopted in the case studies. The three broad areas of assessment are innovative culture, student engagement, and student achievement. Each of these contains domains that represent assessable features of institutional practice.

The Australian and Indian cases selected are current, innovative, robust and clearly demonstrate quality. They include a range of public and private higher education providers and their partners. The case studies identify the innovative approaches pursued by higher education institutions individually or via collaborative ventures and partnerships with education technology companies and government departments. They identify the diverse technologies, learning management systems, curriculum design, delivery and assessment approaches for student engagement and achievement.

The following section provides a brief comparative overview of the APEC toolkit and the Australian and Indian regulatory frameworks for quality assured online learning. The Tertiary Education Quality and Standards Agency (TEQSA) Higher Education Standards Framework 2015 provides the regulatory framework governing Australian universities. The Government of India’s online education initiative, the Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM), was launched in July 2017 at a ceremony attended by the President of India. It is India’s leading portal for Massive Open Online Courses (MOOCs). The University Grants Commission (UGC) and All India Council for Technical Education (AICTE) provide the regulatory frameworks for India’s universities and institutes offering online learning.

The case studies illustrate four types of approaches to online education: online campus; flexibly delivered online degrees and courses; online open knowledge resources/courses; and online industry-relevant development courses for working professionals.

Deakin University has adopted the online campus approach. They are regarded as a pioneer in distance and online education among Australian universities. Deakin University operates a Cloud Campus offering a complete higher education study experience through its fully online courses, learning interactions, and assessments.

Curtin University and the University of South Australia are both founding members of Open Universities Australia, with longstanding experience in flexible delivery of degree programs. Curtin University delivers a Bachelor of Education and a coursework-based Master of Teaching degree via fully online learning and assessments augmented by students’ practical placements. The University of South Australia offers similar fully online bachelor’s degrees.

The Symbiosis Centre for Distance Learning in India has approval from the AICTE to conduct programs in open and distance mode. The Centre has introduced postgraduate diplomas that are delivered via blended learning. Online learning is complemented by proctored examinations conducted at 80 centres throughout India.

The University of Delhi has longstanding expertise in open and distance education through their School of Open Learning, which is based at their Campus of Open Learning. Complementing their distance and blended learning expertise, the University of Delhi delivers a number of MOOCs via the SWAYAM platform in conjunction with constituent and affiliated colleges.

The University of Tasmania’s Wicking Dementia Research and Education Centre and the pan-India NPTEL project are examples of online open resources/courses. The Wicking Centre’s MOOCs are non-award, freely available courses that provide educational content to build knowledge and understanding of dementia. A certificate can be obtained at a minor cost, following completion of the course. They have high subscription and completion rates.

The NPTEL project is a ground-breaking, pan-India initiative led by premier higher education institutions such as the Indian Institute of Science (IISc) and the Indian...
Institute of Technology Madras (IIT-M). The online NPTEL courses offer high quality resources and study materials that complement learning for students enrolled at other Indian higher education institutions. Students also have the option to receive certificates following completion of optional proctored assessments.

The case studies of online industry-relevant development courses illustrate the role of partnerships between industry and higher education institutions in design, delivery and assessment. The International Institute of Information Technology, Bangalore (IIIT-B) is a deemed university that delivers AICTE approved postgraduate courses in regular mode. It has partnered with UpGrad, an education technology company, to offer a premium non-accredited online postgraduate course in data science for working professionals.

The IMPACT Centre’s Professional Networks Program is led by the Queensland Department of Education in collaboration with the University of Queensland and Griffith University. The Program is a professional development initiative for practicing teachers and school leaders that deliver education in traditional and online school settings.

An example of private industry partnership in online industry-relevant courses is between Atlassian, an Australian project management start-up that has achieved global success and One Dot, a private Australian professional services company. One Dot provides industry-relevant skills via a range of proprietary programs and is authorised to deliver Atlassian Training products and valued certification.

Each case study in this collection offers a distinctive perspective of success with online learning through different emphases and combinations of the key domains within the three broad APEC toolkit areas. They show how quality assured online learning in Australia and India is successfully emerging from innovative cultures and institutional practices and is reflected in healthy growth of student enrolments in higher education, professional development and lifelong learning. Together, they offer valuable insights for mutual learning and potential collaboration in online learning between higher education institutions in both countries.
Each case study illustrates several domains in the Quality Assurance of Online Learning Toolkit promoted by the Australian Government for Asia-Pacific Economic Cooperation (APEC) economies. Australia played a leadership role in the development of the APEC toolkit, which has subsequently secured endorsement by APEC countries. The toolkit was developed in response to the growth of online and blended education in higher education in the past decade. It supports an integrated model of quality assurance through a range of criteria for assessing standards and performance of online education. It “represents a holistic vision of a ‘quality culture’ for online and blended education.”

The following directly extracts the nine APEC toolkit domains and their respective principles.

**Leadership and management:** Leadership and management actively support the realisation of quality online and blended education by developing strategic plans, creating performance indicators, and by influencing the culture of quality within an institution.

**Staffing profile and professional development:** Staff involved in the teaching, management and support of online and blended education have the appropriate qualifications, knowledge and skills required to support the achievement of student learning outcomes.

**Review and improvement:** Performance data and a broad range of feedback from stakeholders, including students, are fed into planned cyclical reviews.

**Resources:** The necessary technical and digital infrastructure is sufficiently resourced to enable accessible, reliable and compatible provision of online education for all students regardless of location.

**Curriculum design:** Curriculum design is based on sound educational principles and provides a coherent and interactive series of learning experiences that develop knowledge and skills aligned to learning outcomes appropriate to the qualification level.

**Assessment and integrity:** A range of policies and mechanisms ensure that assessment tasks for students studying online are clearly communicated, effectively moderated, and allow opportunities for students to demonstrate the program learning outcomes.

**Learning outcomes:** Learning outcomes for students studying online are equivalent to face-to-face cohorts for the same qualification level and are assessed with rigour.

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2 Ibid.
AUSTRALIAN REGULATORY ENVIRONMENT

The Australian university sector has longstanding expertise in flexible delivery. This reflects the need for distance education to respond to Australia’s geography and distributed population, and more recently, Australian university’s early adoption of innovative information and communication technologies.3

Australian higher education is regulated under the TEQSA Higher Education Standards Framework 2015 (the Standards). These Standards establish minimum requirements for Australian universities, and provide a comprehensive framework for quality assured higher education.4

The Standards do not prescribe mode of delivery or participation as Australian universities have authority to determine delivery modes for their course offerings (e.g., face-to-face, blended learning, online learning). Online learning is supported by benchmarks (see the Australasian Council on Open, Distance and E Learning Benchmarks for Technology Enabled Learning), and web content accessibility is encouraged (see the Web Content Accessibility Guidelines 2.0).

Australian universities have enthusiastically adopted education technologies including Massive Open Online Courses (MOOCs), gamification, blended learning and learning management systems (e.g., OpenLearning, Open2Study, Online Education Services Australia). They are building capacities in technology-enabled learning (e.g., flipped classrooms, academic data analytics, smart classrooms and personalised learning).5

The following section identifies the ways in which the Standards and key associated documentation align with the APEC toolkit domains.

Leadership and management: The Standards establish minimum acceptable requirements for Australian universities regarding governance and accountability (s. 6) and institutional quality assurance (s. 5). In addition to requirements established in the Standards, key leadership and management positions and structures, and teaching and learning functions are broadly established in each university’s enabling legislation. Individual universities develop plans to support the realisation of quality online and blended education, create performance indicators and targets, and develop quality assurance regimes.

Staffing profile and professional development: The Standards prescribe minimum requirements for university staffing (s. 3.2), learning resources and educational support (s. 3.3). They require that “the staffing complement for each course of study is sufficient to meet the educational, academic support and administrative needs of student cohorts undertaking the course” (s. 3.2.1). This includes the capacity to lead students in intellectual inquiry, and skills in contemporary teaching, learning and assessment relevant to mode of delivery. Training must be provided to learning resource users (e.g., learning management systems) (s. 3.2).

Review and improvement: The Standards require that universities have institutional quality assurance systems addressing course approval/re-approval and accreditation/re-accreditation, and course monitoring, review and improvement (s. 5). These obligations involve interim monitoring, periodic review of all accredited courses by peak academic governance bodies, external referencing and student feedback (s. 5.3). Comprehensive reviews consider course design and content, assessment methods, and mode of delivery (s. 5.3).

Resources: The Standards require that university facilities are fit for their educational purpose (s. 2.1.1), and that students and staff have continuous access to electronic information and communication services (s. 2.1.2). They require that “the learning environment, whether physical, virtual or blended, and associated learning activities support academic interactions among students outside of formal teaching” (s. 2.1.3). The Standards require that university learning resources (e.g., library collections, simulations, software, learning management systems) are accessible, and that educational support is available regardless of a student’s mode of study.

Student information and support: The Standards prescribe minimum requirements regarding the accuracy of representations made by the university and their agents regarding educational offerings and charges (s. 7.1). Similarly, universities must provide accurate information for prospective and current students concerning delivery arrangements, technical requirements for online activities, and accessibility of learning resources (s. 7.2). Universities are obliged to maintain a public repository of information including a list of all courses (s. 7.3). The Standards require that universities have processes to identify students at risk, provide support (s. 1.3.4), and ensure equivalent opportunities for students to progress, regardless of their mode of study (s. 1.3.6).

**Student experience:** The Standards establish obligations regarding student orientation and progression (s. 1.3) to ensure that students have opportunities to progress regardless of their mode of study (s. 1.3.6). Universities must support interactions amongst students (s. 2.1.3), and have student feedback mechanisms (s. 5.3.5) and student grievances and complaints systems (s. 2.4). University staffing arrangements must be sufficient to meet the educational and academic support needs of students, regardless of their mode of study (s. 3.2). The National Code of Practice for Providers of Education and Training to Overseas Students 2018 (the National Code) restricts the extent to which onshore international students on a student visa can participate in online learning.

**Curriculum design:** The Standards establish obligations regarding course design, requiring that universities specify, for each course, the structure, duration, modes of delivery, units and expected learning outcomes (s. 3.1). The Standards require that “the content and learning activities of each course of study engage with advanced knowledge and inquiry consistent with the level of study and the expected learning outcomes” (s. 3.1.2). The TEQSA Guidance Note on technology enabled learning confirms that universities must have “the necessary pedagogical and technical expertise to use [technology enabled learning] in relation to: the design of the course of study; the specification and assessment of learning outcomes, delivery and staffing; and the maintenance of academic integrity”.

**Assessment and integrity:** The Standards establish obligations regarding learning outcomes and assessment (s. 1.4), requiring that expected learning outcomes be specified (s. 1.4.1). The Standards require that “there are policies that promote and uphold the academic and research integrity of courses and units of study … and institutional policies and procedures [that] address misconduct and allegations of misconduct” (s. 5.2). They require that universities provide guidance to students regarding academic integrity.

**Learning outcomes:** The Standards prescribe that, “each course of study is designed to enable achievement of expected learning outcomes regardless of a student’s place of study or the mode of delivery” (s. 3.1.4). Further, they require that “methods of assessment are consistent with the learning outcomes being assessed”, and that “grades awarded reflect the level of student attainment” (s. 1.4.3). The TEQSA Guidance Note confirms that universities must ensure that “all students have an equivalent chance of success, irrespective of their mode or place of study”.

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7 Ibid.
India’s open and distance education expertise is longstanding. Extending this expertise, the Government of India is now encouraging premier universities and institutes to offer online education. They recognise that “Massive Open Online Courses have emerged as a viable model for imparting education, involving conventional and online education”.

In 2016, both the UGC, that has responsibility for universities, and the AICTE, that has responsibility for technical institutions, issued virtually identical regulations on the credit framework for online courses. In 2018, the UGC issued further regulations. These breakthrough regulations enable premier Indian higher education institutions to deliver online learning via SWAYAM, the Government of India’s leading portal for MOOCs. They also enable students from education institutions throughout India to participate in recognised online education courses.

The 2016 UGC regulations establish the credit framework for online learning delivered through SWAYAM, recognising that “there is a need to put in place a regulatory mechanism that would allow seamless connections between online learning and the regular class room learning” (s. 1.5). These 2016 regulations allow Indian higher education institutions to incorporate a maximum of 20% of courses delivered through the SWAYAM platform within their higher education programs (s. 4.3) through credit transfer.

The 2018 UGC regulations establish the minimum standards regarding development and delivery of online higher education through the SWAYAM platform. They stipulate eligibility criteria (s. 4), the application and approval processes for those premier Indian higher education institutions interested in offering online courses via the SWAYAM platform (s. 5-6), operational requirements (s. 7), monitoring and renewal (s. 8), quality assurance (s. 9), and faculty and staff requirements (Annexure 1).

SWAYAM was developed as an integrated platform and online portal for India’s school, VET, universities and institutes to deliver online learning programs. SWAYAM provides a “one-stop web and mobile based interactive e-content … [and] high quality learning experience using multimedia on [an] anytime, anywhere basis”.

This initiative is complemented by a variety of projects such as India’s educational channels (SWAYAM Prabha), the National Digital Library, the National Academic Depository, the education electronic repository (e-ShodhSindhu), Virtual Labs, e-Yantra incorporating robotics into education, Campus Connectivity, and Talk to a Teacher. Other innovative initiatives include the Integrated e-Content Portal (e-Acharya), digital learning environment for design (e-Kalpa), Free and Open Source Software for Education, the Information and Library Network (INFLIBNET), Vidwan and Central Cloud Infrastructure.

The following section outlines the ways in which the UGC regulations and Ministry of Human Resource Development (MHRD) Guidelines for Developing Online Courses for SWAYAM (the SWAYAM Guidelines) and related practices align with the domains in the APEC toolkit to quality assure online learning. Section references relate to the SWAYAM Guidelines, unless specified otherwise.

Leadership and management: The SWAYAM Guidelines outline the SWAYAM leadership and management structures. The SWAYAM Board oversees the SWAYAM platform and has overall responsibility for course quality and managing examinations (s. 2). The SWAYAM Academic Board is the apex academic body that establishes quality standards (s. 3). The Academic Board guides the National Coordinators for each of the school education, non-technology postgraduate, technical/engineering, management, and teacher training sectors.

The SWAYAM Guidelines identify the National Coordinators for India’s various education sectors. National Coordinators have responsibility for “development of the e-content, delivery of online courses and overseeing the assessment procedures of courses offered on SWAYAM” (s. 4.1). The UGC is the National Coordinator for the non-technology postgraduate sector, while the National Programme on Technology Enhanced Learning (NPTEL) is the National Coordinator for technical/engineering undergraduate and postgraduate degree programs. As SWAYAM also accommodates online education relevant to India’s other education sectors, the Indira Ghandi National Open University (IGNOU) is the National Coordinator for diplomas and certificate programs, while the National Council of Educational Research and Training (NCERT) has responsibility for...
school education programs from years 9 through to 12 (i.e., 9th to 12th class).

Operating under the National Coordinators are three other bodies: Subject Matter Expert Groups, Academic Advisory Councils (s. 6.1.h) and Course Coordinators (s. 1.1.b) who develop online courses. As in Australia, individual higher education institutions develop plans to support the realisation of quality online and blended education, create performance indicators and targets, and develop quality assurance regimes.

**Staffing profile and professional development:** Premier Indian universities and institutes deliver SWAYAM courses as the 2018 UGC regulations narrowly restricted eligibility (e.g., Top-100 in the overall category of the National Institutional Ranking Framework results). Some open and distance education centres that operate under a different regulatory environment deliver courses in blended learning mode.

According to the SWAYAM Guidelines, each university or institute delivering SWAYAM courses is required to establish a dedicated online centre or cell. This centre or cell is staffed by a director, deputy director (e-learning & technical), assistant director, and assistant registrar or section officer. Academic staff include a program co-ordinator, course coordinator, course mentor and examiners, who are supported by a technical team.

(Annexure 1). The SWAYAM Guidelines stipulate that each SWAYAM course has a dedicated production team comprising a director/producer, instructional designer, production assistant, camera persons, multi-media technicians and editors (s. 6.3.b). The post-production team involves a video editor, sound editor and music team (s. 6.4). Teaching assistants manage discussion forums and respond to students queries. Industry members contribute to course design.

**Review and improvement:** The 2018 UGC regulations stipulate that course quality is monitored at the institutional level throughout the design, development and delivery cycle. The UGC may issue directions for universities and institutes to comply with quality standards relating to “programme content, instructional design, technology, student assessment, and course or programme management”. These regulations require universities and institutes offering online courses to establish an Internal Quality Assurance Cell, undertake necessary training and capacity building, ensure course quality, and ensure compliance regarding technical and instructional facilities (s. 9). From time to time, the UGC may formally review an institution’s performance in delivering SWAYAM courses.

**Resources:** The 2018 UGC regulations require that institutions delivering SWAYAM courses have the appropriate technical and instructional facilities, information and communication technology, and systems for learner support services. The SWAYAM Guidelines establish a comprehensive listing of standard technical and digital infrastructure resource requirements for studio and audio-visual equipment, production teams, presentation techniques, video transcriptions, and post production (Annexure 1).

**Student information and support:** The 2018 UGC regulations require that eligible higher education institutions have access to SWAYAM for learner authentication, learner registration, a payment gateway, and a learning management system that tracks students engagement, assessment and results.

According to the SWAYAM Guidelines, each course has an introductory module and video that outlines the course design, eligibility requirements, assessment system, credits, relevant dates and expected outcomes (s. 6.2.c.i).

**Student experience:** The 2018 UGC regulations require that universities and institutes provide advice, counselling, mentoring and guidance. They are also required to provide guidelines on academic integrity and internet etiquette, and discuss expectations regarding online discussion forums, chats and activities. They are also expected to provide clear guidelines on academic integrity and plagiarism (s. 7.8).

**Curriculum design:** The 2018 UGC regulations establish the minimum duration and credit points for certificate courses or programs (6 months; 20 credits) and diploma course or program (1 year; 40 credits). They specify that, “the Credits and minimum duration for the Degree Courses or Programmes offered Online shall be...”
the same as specified by the Commission under [the] Choice Based Credit System” (s. 7.3.v). According to the SWAYAM Guidelines, Course Coordinators have responsibility for overall course development, curriculum design, and setting pedagogy, while other governance structures (National Coordinators, Subject Matter Expert Groups, and Academic Advisory Councils) provide oversight and quality assurance. The process is informed by industry and technical experts who serve on the SWAYAM Academic Board. Employer and industry representatives are consulted to value-add to the course.

In line with UGC regulations and other supporting documentation, the SWAYAM Guidelines establish a ‘four quadrant approach’ with the following four components: Quadrant-I – e-Tutorial (video and audio content, animation, simulations, virtual labs); Quadrant-II – e-Content (self-instructional material, PDFs, e-books, illustration, video demonstrations); Quadrant-III – Web Resources (related links, open source content, case studies, articles); Quadrant-IV – Self-Assessment (problems and solutions such as multiple choice questions, short/long answer questions, quizzes, assignments).14

Each SWAYAM course has instructional videos and associated transcripts, reading materials such as lecture notes, self-assessment modules (e.g., quizzes, assignments) and discussion forums. Courses that require a practical or a laboratory course are excluded from being offered in the online mode according to the 2018 UGC regulations.

**Assessment and integrity:** The SWAYAM Guidelines provide that online courses will offer a range of assessments (i.e., formative and summative) that align with curriculum and learning outcomes and promote critical thinking, deeper learning and reflection (s. 8.b). The 2018 UGC regulations stipulate that, “examinations shall be conducted through Proctored Examinations and in conformity with any other norms for such examinations as may be laid down by the Commission from time to time” (s. 7.2.vi).

They also require universities and institutes to have the “ability to conduct examinations either using technology-enabled online test[s] with all the security arrangements ensuring transparency and credibility of the examinations, or through the Proctored Examination”15 (s. 4.4).

The SWAYAM Guidelines stipulate that “an online examination would be the preferred mode [but] the [Course Coordinator] may decide on the mode of conducting the final examination” (s.8.b). The host university or institute that delivers the course is responsible for conducting assessments and final examinations, and issuing certificates. From late 2018, the MHRD’s new National Testing Agency will conduct examinations for SWAYAM courses using Computer Based Testing methodology, through centres in over 60 cities. For the July-November 2018 semester, 3,800 students participating in 90 SWAYAM courses registered to receive certifications following examinations.16

**Learning outcomes:** The SWAYAM Guidelines stipulate that Course Coordinators will ensure that learning outcomes are evident and mapped to the curriculum and assessments, with the latter informed by workforce needs, and relevant standards. They imply that learning outcomes will include specific subject matter knowledge and generic skill sets, and that these will be communicated to prospective and current students, and staff.

SWAYAM courses may either be credit courses (i.e., taught for at least one semester, as part of a subject or program) or non-credit courses (e.g., continuing education, awareness programs). Students that complete examinations and receive a certificate can “get credits transferred into his/her marks certificate issued by his/her parent institution” (s. 8.e). In this way, online education delivered by premier Indian universities and institutes can be recognised in degrees conferred by other institutions throughout India.

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15 A proctored examination “means the examination [is] conducted under the physical supervision of [an] approved neutral person who ensures the identity of the test taker and the integrity of the test taking environment” (UGC, 2018, s. 4.r).

16 For further information, see: https://www.nta.ac.in/Swayamexam
Deakin University has long been committed to flexible education, having pioneered innovations in Australian distance education since being established as a public university in regional Victoria in 1974. To meet the needs of the 21st century learner, Deakin has recast its online learning philosophy through its ‘cloud before campus’ or CloudFirst approach under the strategic leadership of Deputy Vice-Chancellor and Alfred Deakin Professor Beverley Oliver. Deakin’s Cloud Campus is the fastest-growing of its five campuses. It enrolled over 14,000 students primarily online as of December 2017.

Since 2017, Deakin has partnered with the global social learning platform FutureLearn, owned by the United Kingdom’s The Open University to offer a small number of degrees and free, open courses. The Graduate Certificate of Diabetes Education is offered on the FutureLearn platform. The course prepares students to practise effectively as diabetes educators by helping individuals with diabetes achieve optimal self-management and well-being. While the course has always been delivered exclusively online, it was designed initially to mimic the traditional lecture-tutorial model with lecture uploads, PDFs and on-site examinations. Over time this has changed. Using the CloudFirst principles, the course has been redesigned for socially engaged online learning.

Deakin’s team approach to resourcing online learning is innovative. The Graduate Certificate of Diabetes Education team involves digital resourcing professionals, video and graphic designers, learning designers and teaching academics. This group has successfully transformed earlier versions of the course into an engaging online learning experience. The course teaching team comprises qualified diabetes educators who maintain annual re-credentialing through professional development. Learning designers assist in applying new digital tools, and clinicians and researchers contribute to course updates. This model has fostered transformations in subject knowledge, learning design, project management, media, teaching philosophy and professional interrelationships.

As with all units and courses at Deakin, there is a rigorous and timely consideration of all success indicators including student feedback, retention, success and employment. Units are reviewed every trimester and the course is reviewed annually and in depth every five years.

The Graduate Certificate of Diabetes Education is externally accredited by the Australian Diabetes Educators Association every five years to ensure compliance with industry standards. The course is also reviewed regularly by Deakin subject matter experts. Student feedback from a range of sources including national surveys supports continuous course improvement. Nationally, Deakin ranks highly in relation to quality of teaching and learning.

Based on the Commonwealth Government’s Quality Indicators for Learning and Teaching, Deakin students’ overall quality of educational experience is well above the national average.

Student engagement
The Graduate Certificate of Diabetes Education in available in five two-week blocks and is designed for engaged learning. Students can fit their learning around their schedule. Students from anywhere in the world can try the first block for free. Student retention and satisfaction has improved since the course was redesigned.

The Graduate Certificate of Diabetes Education targets health professionals. Applicants must be qualified professionals with a health science background and minimum two years’ work experience. Those seeking the placement component for Australian Diabetes Educators Association credentialing as a diabetes educator must be registered with the Australian Health Practitioner Regulation Agency.

Throughout the Graduate Certificate of Diabetes Education, comprehensive student support is offered on a highly responsive, ‘whenever wherever’ basis by student success coaches and study mentors. Students can also access online support services and the information technology helpdesk. They have 24-hour library access. Students interact with academic staff online and via synchronous webinars. Student engagement and performance is routinely monitored to detect at-risk students.

Deakin’s approach to learning design for the Graduate Certificate of Diabetes Education incorporates the interactive ‘learning through discussion’ model developed by Professor Diana Laurillard from the University College London Institute of Education. Throughout the course, students are prompted by Lead Educators to complete a learning activity and then discuss, reflect and comment on their learning experiences. This model successfully encourages students to engage with course content.

Student achievement
This course team’s experience with CloudFirst learning can be summarised as follows: “We started with the goal of transforming the curriculum for a MOOC and ended up transforming ourselves.” This is well illustrated by the case of the Graduate Certificate of Diabetes Education which aims to explain, motivate, and engage. The team uses high production learning resources to create digital storytelling, role plays and video case studies to ground students in the real-life contexts of individuals living with diabetes.

Using best-practice principles in writing for the web, Deakin ensures that information is visually appealing and succinct. A student’s typical week comprises four activities. A ‘big question’ is introduced, elaborated and applied, after which students are presented with a video summary that may require reflection, a quiz and an assessment. Rich multimedia including text, video case studies, infographics, animation, simulation, and audio is purposefully selected to best communicate content under each of these activities. Learning is active and includes self-learning and critical reflection. Recommended readings are focused and manageable.

Course learning outcomes and unit learning outcomes are established and publicly available. These learning outcomes are clearly aligned to the Australian Qualifications Framework level descriptors and the professional association’s industry standards. The Graduate Certificate of Diabetes Education incorporates a number of formative assessment tasks such as multiple-choice question quizzes that provide explanatory feedback to guide student learning. Students also received feedback on each activity from their Lead Educator, mentor and peers. In addition to progressive assessments throughout, the course includes a final examination which is completed by students online. An Assessment Panel oversees and moderates assessment to ensure the integrity of the course.

The Graduate Certificate of Diabetes Education provides a blend of disciplinary knowledge and transferable skills to aid graduates’ employment and further study. Eligible graduates may begin the pathway to credentialing with the professional association through an optional 40-hour observational placement at a facility arranged by Deakin.

The success of the Graduate Certificate of Diabetes Education in matching learning design to student needs has been rewarding for the team and demonstrates clear benefits for students. This is just one example of how Deakin has set new standards for online learning.

19 Diana Laurillard, Teaching as a Design Science: Building Pedagogical Patterns for Learning and Technology (New York, Routledge, 2013).
21 For additional information regarding the Australian Qualifications Framework, see: https://www.aqf.edu.au
UNIVERSITY OF DELHI ENVIRONMENTAL CHEMISTRY, FORENSIC ANTHROPOLOGY AND ONLINE REFRESHER COURSE IN CHEMISTRY FOR HIGHER EDUCATION FACULTY

Innovative culture

The University of Delhi, founded in 1922, is a public central university located in New Delhi. Since 1962, it has pioneered distance education in India through its constituent college, the School of Correspondence Courses and Continuing Education. This college, now the School of Open Learning, is located on one of the University’s three campuses – the Campus of Open Learning. Under the leadership of its Director, Professor C. S. Dubey, the Campus of Open Learning has enrolled over 500,000 students to date.22

Through the Campus of Open Learning’s School of Open Learning, students undertake undergraduate and postgraduate degrees in arts, humanities and commerce by distance education. To complement open and distance education, the University of Delhi’s Campus of Open Learning is introducing new technologies and innovative pedagogies, “paving the way for future generation teaching and learning processes, beyond the boundaries of a conventional classroom.”23 The University of Delhi also aims to bring broader campaigns, such as the Digital India and Make in India projects, to life.

The University of Delhi has also adopted other online and technology enabled initiatives to help resolve India’s challenges of access, equity and quality. For example, the university’s Institute of Lifelong Learning developed an online repository as early as 2009 (i.e., the Sakshat E-Content Repository).24 They participated in the National Mission on Education through Information and Communication Technology (NMEICT),25 which is an ambitious project undertaken by the Ministry of Human Resource Development (MHRD). This project aimed to seamlessly provide quality educational content to all eligible and willing learners in India. The School of Open Learning Digital Library and Institute of Lifelong Learning both have open source, non-award courses in the humanities, commerce and mathematics. Course materials include freely available lectures, podcasts and self-assessment questions that promote lifelong learning in all the subjects, including science.

As a premier Indian university, the University of Delhi has also participated in online education initiatives championed by the Government of India. The University of Delhi’s Centre for e-Learning, based at their affiliate college, Sri Guru Tegh Bahadur Khalsa College (SGTB Khalsa College) was sponsored by the MHRD to develop interactive e-content through the e-PG Pathshala project. Throughout India, this project sponsored the development of e-content in 77 social science, humanities, science, and engineering and technology subjects.26 The SGTB Khalsa College developed e-content for 6 subjects: chemistry, commerce, economics, psychology, business economics and forensic science.

Building on the University of Delhi’s successful contributions to the e-PG Pathshala project, the university joined SWAYAM in 2017. In partnership with expert faculty and technical staff based in their affiliated colleges, the University of Delhi’s Centre for e-Learning has developed over 40 SWAYAM MOOCs in science, humanities and commerce at the postgraduate level. This includes two postgraduate courses, Environmental Chemistry and Forensic Anthropology, and the Online Refresher Course in Chemistry for Higher Education Faculty. As these MOOCs are delivered through the SWAYAM platform, they are progressively reviewed and continuously improved. The SWAYAM portal’s course rating and review features, along with student feedback, inform this quality assurance process.

Student engagement:

As a recognized leader in open and distance education, and an early adopter of online education in India, the University of Delhi has invested considerable resources in flexible, blended and online education. The University of Delhi’s Centre for e-Learning accommodates specialist technical infrastructure in accordance with the SWAYAM Guidelines, including audio-video and multimedia technology enabled studios. These resources support the production and editing of MOOCs for delivery through the SWAYAM platform.

Information regarding each of the university’s MOOCs is available for potential applicants and students via the SWAYAM platform and/or Sakshat E-Content Repository. This includes details regarding course structure, syllabus, eligibility, and learning outcomes. MOOCs delivered through the SWAYAM platform are free of charge, noting that a nominal fee may be payable for graduates seeking certification.

The University of Delhi’s Environmental Chemistry MOOC, Forensic Anthropology MOOC and Online Refresher Course in Chemistry for Higher Education Faculty seek to maximize the student experience by using multimedia enriched e-content and a variety of activities. They employ both open source and propriety software including audio-video

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24 For further information, see: http://media.sakshat.ac.in/nmeict/econtent.html
25 For further information, see: http://nmeict.ac.in/frmindex.aspx
26 For further information, see: https://epgp.inflibnet.ac.in
Each week’s lessons are delivered through video lectures and e-texts, followed by a summation video and quiz. Students have access to online course materials, web resources and web links, along with transcripts of video lectures. Faculty-student and student-student interaction is facilitated by discussion forums. Students have access to faculty via email and discussion boards. Universities delivering MOOCs via the SWAYAM platform, such as the University of Delhi, have access to the SWAYAM learning management system. This Microsoft system enables close monitoring of student engagement and performance for each online course.

**Student achievement**

The University of Delhi involves leading faculty and subject matter experts in the development of curriculum specifically for delivery as a MOOC through the SWAYAM platform. This includes faculty from the University of Delhi and its constituent and affiliated colleges.

Dr Vimal Rarh, Coordinator of the National Resource Centre of Chemistry of MHRD, and Senior Faculty at the SGTB Khalsa College along with Professor Bakhshi, Chair Professor at the University of Delhi and Chair of the National Resource Centre of Chemistry of MHRD have been instrumental to the university’s involvement in both the e-PG Pathshala and SWAYAM projects. They guided around 1,000 faculty and technical team members through the development of approximately 3,200 modules for 89 papers in six subjects for the e-PG Pathshala project. As noted, over 40 of these were converted into MOOCs for the SWAYAM platform within a time span of three years. For each MOOC, they identified and trained one Course Coordinator.

Dr Garg, Principal, Deen Dayal Upadhayaya College is the Course Coordinator for the Environmental Chemistry MOOC that is now available on the SWAYAM platform. This course was specifically developed for online learning. The course covers the atmosphere, the hydrosphere, air, water and soil pollution, the greenhouse effect and environmental issues. 277 students enrolled in the 2016-2017 semester.

Dr Adarsh Kumar, Additional Professor, University of Delhi and Faculty In-Charge, All India Institute of Medical Science is the Course Coordinator for the Forensic Anthropology MOOC. This course provides an introduction to forensics, and explores variations and genetic anomalies in human anatomy. It targets those interested in pursuing forensic science through undergraduate or postgraduate studies. 148 students enrolled in the 2016-2017 semester.

Dr Vimal Rarh is currently running a MOOC entitled, Online Refresher Course in Chemistry for Higher Education Faculty, under the MHRD Annual Refresher Program in Teaching. 2,272 teachers are enrolled in the 2018-2019 semester. This MOOC is delivered through the SWAYAM platform. It focuses on the latest developments in chemistry, new and emerging areas of chemistry, pedagogical improvements and methodologies for transacting the chemistry curricula. These teacher oriented online courses have the potential of making MOOCs a successful movement in India, as well as enhancing the quality of education.

The University of Delhi hopes that these and other MOOCs will also prove valuable for applicants attempting the UGC’s National Eligibility Test (NET). They may also prove valuable for applicants for college and university lecturer positions, and for the award of Junior Research Fellowship (JRF) for Indian nationals. All e-courses by the Institute of Lifelong Learning, along with the University of Delhi MOOCs were developed using the four-quadrant approach mandated by the UGC. To support student achievement, they include e-texts (10-12 pages of text, suggested readings, web-links etc.), self-learn (video-lecture with graphics, animation etc.), self-assessments (quizzes, crosswords, assignments, multiple choice questions), and discussion forums.

For each MOOC, learning and assessment is scaffolded across the 15 week course. Students complete weekly quizzes, and mid- and end-term assignments that contribute towards the final grade. Students seeking certification can participate in a proctored examination at a designated centre or partner university. A nominal fee is charged for sitting the proctored examination. Students that complete these examinations receive certification from the University of Delhi.

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27 V. Rahr, Interview with O. Lahiri, (telephone, December 11, 2018).
30 “Online Refresher Course in Chemistry for Higher Education Faculty,” swayam.gov.in, https://swayam.gov.in/courses/5231-online-refresher-course-in-chemistry-for-higher-education-faculty
CURTIN UNIVERSITY BACHELOR OF EDUCATION AND MASTER OF TEACHING

Innovative culture
Curtin University is a public university based in Perth, Western Australia. It has over 20 years experience delivering quality distance education and online learning. As a founding member of the successful Open Universities Australia consortium, Curtin University has expanded their offerings in scope and scale over the last decade. Online offerings now include fully online bachelor and postgraduate courses (i.e., graduate certificates, graduate diplomas and masters) and free, short MOOCs. Curtin University also offers professional graduate-level MicroMasters and stackable credentials.31 This longstanding expertise has positioned them well for international partnerships collaboratively developing online learning that is interactive, engaging, inspiring and effective. The Curtin University School of Education, for example, is exploring mutually beneficial partnership arrangements with India’s National Council of Educational Research and Training. This initiative is examining ways of introducing innovative online learning to increase India’s existing capacity in pre-service teacher education, and in-service teacher professional development.

Online learning represents core business for many of Curtin University’s schools, including the School of Education. The school delivers three fully online undergraduate Bachelor of Education degrees in early childhood education, primary education and secondary education. At the postgraduate level, they deliver a quality assured, fully online Master of Teaching with majors available in early childhood education, primary and secondary education.

The School of Education’s Learning Technology Support Team is a critically important resource. They manage digital resources and help faculty and students interact with the digital learning space. Coordination and teaching staff operate at three levels. Unit stewards oversee a group of units in a particular area of study (e.g., mathematics teaching). Unit co-ordinators oversee the delivery of a particular topic or unit of study, while sessional teaching staff deliver and assess online learning. Staff recruitment is undertaken in accordance with TEQSA qualification requirements. Productive collaborative partnerships have also been developed with state governments, and public and private schools. The School of Education routinely registers student practical placement supervisors as Curtin University adjuncts to ensure regular communication between teaching staff and practical placement co-ordinators.

The School of Education regularly conducts thorough reviews of units taught in various different modes (i.e., through Open Universities Australia, fully online and via regular, face-to-face mode). These reviews consider feedback from employee bodies, academic advisory boards, teaching staff and students. The School of Education’s analyses of student evaluations have consistently revealed higher levels of satisfaction with the quality of online teacher education courses than those delivered via regular mode. These findings have been attributed to the high levels of student engagement achieved in online learning through discussion boards and smaller tutorial style web conferencing.32

Student engagement
Curtin University has reliable technical and digital infrastructure and uses the well-established learning management system, Blackboard. Prior to commencing fully online bachelor and postgraduate courses, applicants seeking to study through Open Universities Australia may complete pathway or ‘readiness modules’ to ensure they are adequately prepared.

The School of Education scaffolds learning and assessment to promote student engagement. They provide standardised course and unit outlines that represent a contract with students. These contracts elaborate expectations of students in terms of participation and assessment, and commitments by the school in terms of delivering quality higher education.33 Data analytics derived from Blackboard and Open Universities Australia are used to monitor student progress and identify at-risk students.

The fully online Bachelor of Education degrees and Master of Teaching deliver units sequentially. Students enrolled through Open Universities Australia typically enrol in two units for each of four periods of learning each year. By contrast, students enrolled directly through Curtin University typically enrol in four units for each of two semesters, adopting the same enrolment pattern as those studying in regular mode.

Online learning students are required to read topic material and explore links to further reading. They undertake engaging activities and quizzes, and interact with peers through discussion forums.

33 Ibid.
Teaching staff and students interact on a weekly or fortnightly basis through Blackboard Collaborate virtual classrooms. Students not able to participate in these classroom sessions can refer to recordings available online. A virtual student lounge also provides opportunities for students to network informally.

**Student achievement**

The degree structure and curriculum for the School of Education teacher training degrees delivered via regular mode and online learning are essentially equivalent. However, the activities and assessments are tailored to suit the mode of delivery. The curriculum all complies with Australian Qualification Framework requirements, industry standards and the norms for Australian in-service teacher education.

Curriculum development at the unit level is a rigorous, extensive and collaborative process that involves three phases. Firstly, alignment with course outcomes to ensure that student’s skills and understandings are developed sequentially throughout the courses. Secondly, alignment with Curtin University graduate attributes to maintain consistency with bachelor and masters level outcomes across the university. This phase involves establishing each unit’s pedagogical approach including writing explanations, identifying resources, creating activities and posing questions for learning. Reference is made to the 6Es framework for structuring learning – Engage, Explore, Explain, Elaborate, Extend and Evaluate. 34 Staff identify relevant texts or other resources. Finally, alignment with quality standards established by external bodies that impact, accredit and regulate school teaching in Australia.

Curtin University requires that unit outlines articulate the unit’s intention, syllabus, topics to be covered, learning outcomes aligned to learning activities, and detailed descriptions of assessments. The School of Education teacher training degrees, regardless of delivery mode, primarily involve assignment-based assessment rather than examinations. Outputs typically include essays, reports, lesson plans and other materials directly relevant to professional practice. The text-matching software, Turnitin, is mandated for all assessments to help detect plagiarism. Faculty can also determine the extent to which pieces of writing provided by any student across a unit are similar.

All teacher training students, including those enrolled via online learning, participate in a practical component. Online students complete practical placements in schools local to where they live. This essential practical placement ensures that students have developed the topic knowledge, and competence as a teacher in a classroom, to graduate and practise as a teacher. While on placement, students are progressively assessed by the classroom teacher they are assigned to, while their school-based supervisor (often a deputy principal) reports on their competence. Students located overseas are required to complete their final 10-week placement in Australia, reflecting Australian accrediting body requirements. Graduates from these fully online degrees are eligible to register to teach in Australian schools.

The Curtin University School of Education has successfully graduated hundreds of students from fully online degrees over the last ten years. 35 In recognition of their extensive expertise in delivering fully online courses, they have been invited by the Australasian Society for Computers in Learning in Tertiary Education (ASCILITE) to assist in developing a framework for quality in online learning.

34 Parkin, Interview.
35 Ibid.
Innovative culture

The Indian Institute of Technology, Madras (IIT-Madras) has been at the forefront of the umbrella initiative known as the National Programme on Technology Enhanced Learning (NPTEL) project. The NPTEL project, established in 2003, enables the country’s premier institutions to bridge variations in quality by delivering free, standardised online engineering and technology courses in video and web format. In recent years, the project’s scope has extended to incorporate some humanities and social sciences courses. Partner institutes include the elite Indian Institute of Science, Bangalore (IISc) and Indian Institutes of Technology (IITs). NPTEL courses are intended to complement regular (i.e., face-to-face) courses conducted by Indian higher education institutions. The NPTEL project’s current emphases include ensuring student’s employability and industry-readiness. In time, NPTEL is aiming to provide the largest repository of free, open source content in the world.

Between 2014 and 2018, the NPTEL online course platform has seen more than 4.84 million enrolments across 1,000 courses. Since 2014, NPTEL has phased in certification (i.e., NPTEL Online Certification or NOC courses of 4, 8 and 12 weeks duration). Students can complete an optional proctored examination in one of 120 cities throughout India for a nominal fee to earn certificates. Since introducing this innovation, 320,000 students have completed final examinations and gained certification.

NPTEL is funded by the Government of India. It has two pan India governance structures that seek to ensure project and course quality. MHRD chairs the National Programme Committee, which is responsible for overall project implementation, quality monitoring, and review. The participating IITs and IISc collaboratively constitute the Programme Implementation Committee. Technology enhanced learning coordinators at each partner institute encourage faculty to offer online learning, while dedicated technical staff support course-creation and handle the course logistics for interested faculty. Discipline coordinators and subject matter expert groups oversee curriculum development to avoid duplication of content across the suite of course offerings.

The NPTEL project has proceeded in phases, commencing with the preliminary phase I (2003-2007) where the IISc and seven IITs collaborated to develop materials for undergraduate science and engineering courses. The project was consolidated during phases II and III (2007-2016), while the current phase IV (2016 onwards) involves new activities aligned to the MHRD’s Central Sector Scheme (CSS) for MOOC-Compliant E-Content Creation (CCC). The National Programme Committee undertakes half-yearly reviews of the NPTEL project, while the Programme Implementation Committee holds regular meetings. Students are encouraged to complete weekly and end-of-course feedback questionnaires, comment on the quality of transcriptions and video subtitles, and suggest new courses. Minutes of meetings, statistics, and revised goals are available online on the NPTEL portal.

Student engagement

Google, a partner since 2007, provides the cloud infrastructure and learning management systems for NPTEL. A NPTEL project cell located in each of the partner institutes is in charge of creating special classrooms fitted with networked computers, providing expertise in multimedia and digital production, and developing courseware. Partner institutes such as IIT-Madras are equipped with web studios with standardised infrastructure for content creation and lecture capture. Lectures have been transcribed for all current courses. In time, course content will be made available in multiple Indian languages.

Specialist programmers, designers and instructional editors support faculty to develop courses using standardised software and hardware and assist in running learning management systems. The project’s copyright and distribution policy (i.e., Creative Commons licence) permits Indian higher education institutions to adopt NPTEL content for their coursework. Proctored examinations are conducted by Tata Consultancy Services iON.

The NPTEL project has been developed to encourage the gradual take-up of quality online learning. As a lead instigator, IIT-Madras has offered over 250 courses via NPTEL. IIT-Madras’ Programming, Data Structures and Algorithms Course was one of the first courses offered, and it has since been offered multiple times. All NPTEL courses, such as the IIT-Madras Programming, Data Structures and Algorithms Course, operate on a hybrid MOOC model with both online and on-ground elements. Over 1900 local chapters co-ordinated by a Single Point of Contact (SPOC) have been established across the country. The SPOC, often a faculty member at the local institute, guides student admissions and scholarship applications, monitors student progress and encourages...
students to engage with peers, faculty and teaching assistants through online discussion forums. SPOCs also play a role in identifying at-risk students. Dr. Jayakrishnan, Senior Scientist at IIT-Madras remarks, “India in itself cannot directly adopt MOOCs because of its scale. We need our local innovations like local chapters”.

The NPTEL website contains information of technology and internet/broadband requirements, and downloadable course materials including video tutorials and their transcripts. The website also has detailed directions for navigating the portal and using NPTEL, and contact details for local chapters. It clearly communicates information regarding course eligibility, the registration and certification processes and refunds, and answers frequently asked questions (FAQs). Throughout each course, one hour per week is dedicated to live interactions with faculty and teaching assistants. Discussion forums are conducted to clarify student queries.

Innovations are progressively being introduced. For example, the NPTEL Industry Associate (NIA) initiative has been established to provide opportunities for industry to recruit interns and new employees, provide onboarding or orientation training (e.g., soft skills, Introduction to Programming in C), and upskill the existing workforce (e.g., Artificial Intelligence).

**Student achievement**
Along with the certification process, the NPTEL project is a curriculum building exercise as well. NPTEL makes available AICTE approved curriculum to higher education institutions throughout India. Curriculum for the Programming, Data Structures and Algorithms Course was developed by IIT-Madras with input from industry partners. This included Tata Consultancy Services, Cognizant Technology Solutions and the National Association of Software Services Companies (NASSCOM), India’s peak information technology and business process management industry association. The course provides more than an introduction to programming. It covers basic programming constructs; arrays, pointers and strings; fast arithmetic, searching and sorting; stacks, queues, trees, heaps and graphs; and greedy algorithms and dynamic programming. IIT-Madras aims to ensure that graduates are job ready.

The IIT-Madras Programming, Data Structures and Algorithms Course is delivered largely asynchronously over eight weeks (e.g., three hours of lecture videos per week) to cater for busy students. Both the curriculum and assessments have been designed to foster an analytical approach to problem solving. Weekly online assessments evaluate programming and coding skills. Since the IIT-Madras Programming, Data Structures and Algorithms Course was introduced in 2014, over 40,850 students have enrolled across three offerings in 2014, 2016 and 2018. A smaller number (5,250) have completed and gained certification after completing the proctored examination and paying a nominal fee of Rs 1100 (approximately $22 AUD). With more online learning courses being added every semester, the NPTEL project plays an important role in enhancing India’s higher education student population and student learning experience.
UNIVERSITY OF SOUTH AUSTRALIA
BACHELOR OF COMMERCE (ACCOUNTING)

Innovative culture

The University of South Australia, established in 1991 but with foundations dating back much longer, is a public university based in Adelaide. It aspires to “be recognized internationally as a leading university for its use of innovative digital technologies to ensure a high quality student learning experience” by 2020. Their comprehensive Teaching and Learning Framework and Teaching Practice Guidelines explicitly focus on the development and support of technology enhanced learning, and online teaching and course design. The University of South Australia has a longstanding tradition of offering flexible learning, having been designated as one of eight transformative national Distance Education Centres in 1991. Several years later they played a key role in establishing the Open Universities Australia consortium. In 2009, the University of South Australia launched an innovative learning management platform – learnonline – through which they deliver quality technology enhanced learning. Views of learnonline lecture recordings peaked in 2014 at 700,000 affirming the growing relevance of this mode of learning. Over 70% of University of South Australia’s 33,500 students enrolled online for at least one component of their degree in 2014.

Extending the learnonline learning management platform, the University of South Australia established UniSA Online in 2017 as a key plank of their Digital Learning Strategy 2015-2020. Through UniSA Online, using their successful learning management platform, the University of South Australia aims to deliver an engaging and digitally enriched curriculum, support students become productive professionals in a digital age, expand flexible learning, and develop faculty as leaders in digital learning experience.

Through UniSA Online, 12 fully online undergraduate degrees are available in management, health science, information technology and communication, and law. Over 70% of online degrees are available in arts and social science, business, education, engineering, health and information technology. These innovative degrees may require some on-campus study and practical or work placements to augment online learning.

The University of South Australia has an organisational structure and staffing profile that supports online education. Each academic division has an Associate Dean of Online Education that oversees curriculum development for UniSA Online undergraduate degrees within their respective disciplinary scope. The University of South Australia’s Teaching Innovation Unit comprises teams of academic and professional staff focused on academic development, language and literacy, technology enhanced learning, online educational design and technical and multimedia matters. These teams test new teaching and learning ideas, for both regular and online delivery mode, in terms of efficacy, scalability and ease of integration.

To harness the latest in digital technologies and expand their scope and scale, the University of South Australia has recruited leading online learning experts. Professor George Siemens, a pioneer of MOOCs and President of the Society for Learning Analytics Research (SOLAR) is the new Crossing the Horizon Professor and Director of the Centre for Change and Complexity in Learning (C3L). All UniSA Online degrees are comprehensively reviewed in accordance with the University of South Australia’s Quality Assurance and Improvement: Programs, Courses and Teaching Arrangements policy. UniSA Online has a well-established, multi-tiered review system managed by an Academic Director. Annual reviews consider formal feedback obtained from questionnaires, focus group discussions and consultations with students and industry stakeholders. Review findings are available to the University of South Australia Senior Management Group, in an aggregated form and as appropriate reflected in changes to UniSA Online’s undergraduate degrees.

Student engagement

The University of South Australia’s learnonline learning management platform includes applications that facilitate student engagement. Students access courses through the Moodle open source software application. Assessment submission and return is managed through Gradebook, a common software interface. Turnitin plagiarism detection reports are routinely published to this interface. Panopto software supports the new Lecture Recording System that enables lecture capture and post-production. In addition to lecture recordings, the Virtual Classroom web-conferencing technology facilitates real-time interaction through audio, video, text chat, application and file sharing, and whiteboard collaboration. All students have access to a personal online space (ePortfolio) of 1 Terabyte where they can store texts, photos, videos, music and...
multimedia. Mentor opportunities and final year capstone projects are available through some fully online undergraduate degrees to enable students to work firsthand with professionals.

Students also have access to online teachers for all academic support, and student advisers for all administrative support. Students are advised through an online orientation module and course information materials of available learning resources. This includes the University of South Australia’s extensive physical and virtual library collections as well as resources developed by others (e.g., the LinkedIn video library, Lynda.com). They also have access to a 24/7 information technology helpdesk. Learning analytics and staff referrals are used to monitor student progress and identify at-risk students requiring additional support.

**Student achievement**

The Bachelor of Commerce (Accounting) is one of the UniSA Online’s innovative, fully online undergraduate degrees. The degree focuses on economic, legal, and political trends affecting global business.

By participating in ten-week blocks, students build a robust foundation in business, taxation, auditing, law, finance, and sustainability. The first block prepares students for success in the UniSA Online learning environment, and elaborates the fundamental value of academic integrity. The Bachelor of Commerce (Accounting) degree has four commencement dates throughout each year, and a typical duration of three years full-time (or equivalent part-time).49

The Teaching Innovation Unit, UniSA Online and disciplinary specialists collaboratively developed the degree’s curriculum specifically for online mode, in accordance with the University of South Australia’s degree development and approval requirements. Curriculum for the Bachelor of Commerce (Accounting) is practice-based, industry informed, and compliant with industry standards. Chartered Accountants Australia and New Zealand, CPA Australia and the Chartered Institute of Management Accountants have accredited the degree. The Association of Chartered Certified Accountants, and Association of International Accountants also recognize it. The School of Business Program Director ensures coherence of all assessment items for the Bachelor of Commerce (Accounting). School Course Coordinators prepare all assessment items for students to complete and submit online. This process involves writing assessment items and providing marking rubrics. The assessment tasks are authentic and peer-reviewed by discipline specialists. They reflect a scaffolded and programmatic approach to learning and development, and are intended to foster problem-solving and critical thinking skills. As the degree is delivered, assessments are moderated to an equivalent standard to on-campus mode.

The University of South Australia’s suite of fully online undergraduate degrees give students maximum flexibility to “log in to the interactive online learning environment anywhere, any time and on any device.”50 They have established robust infrastructure and technology enabled learning expertise, and are producing quality learning opportunities for their students. UniSA Online students benefit from technology enabled learning experiences, innovative and research-driven teaching practices, and the opportunity for flexible and personalized study.

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49 Ibid.
50 Ibid.
SYMBIOSIS CENTRE FOR DISTANCE LEARNING

POSTGRADUATE DIPLOMA IN BANKING AND FINANCE

Innovative culture
The Symbiosis Centre for Distance Learning, based in Pune, India is part of the innovative Symbiosis Group. The centre’s vision is “to create a Global Campus to provide education and training opportunities beyond the boundaries of a classroom, so as to transform the way people learn.” Since its establishment in 2001 it has delivered quality open and distance learning programs including diplomas, postgraduate diplomas and certificates to students in metropolitan and non-metropolitan areas throughout India.

Through various corporate programs, the centre is also an education provider to companies such as IBM, Cognizant, Infosys, Wipro and Ranbaxy Laboratories. The Symbiosis Centre for Distance Learning has a longstanding commitment to access and equity. They specialise in programs that enhance both life and employment opportunities for India’s early career professionals.

As a leading Indian open and distance learning provider, the Symbiosis Centre for Distance Learning has introduced blended learning into programs delivered by their I-Learn Campus. Students receive printed self-learning material following a distance education methodology. In addition, they participate in interactive e-learning primarily comprising case studies and scenarios following a supplementary learning model, and they interact with faculty and other students through synchronous online classrooms. Students also interact with tutors via online chat sessions (i.e., e-mentoring).

Reflecting their expertise in the field, the Symbiosis Centre for Distance Learning recently launched the Symbiosis International Research Journal on Open & Distance Learning. The inaugural issue focuses on sustaining and enhancing the quality of open and distance learning. In 2017, they hosted the International Council for Open and Distance Education conference exploring technology, quality and inclusion themes. They are actively engaged with the Asian Association of Open Universities. Faculty extend their expertise by participating in courses delivered via the online learning platform, Coursera, and government training programs. The centre also conducts training programs for faculty in information communication technologies to support quality online learning.

The Symbiosis Centre for Distance Learning operates as a Standalone Institution under the All India Council for Technical Education. It has approval from the All India Council for Technical Education to conduct 17 programs in open and distance mode, with an intake of 14,000 for the 2018-2019 academic year. It is ISO 9001:2015 certified and has undergone the Commonwealth of Learning Review and Improvement Model (CIL-RIM) for continuous quality improvement.

At the institutional level, Academic Council and Board of Studies program reviews and approvals complement these systemic regulatory and quality assurance frameworks. Standard operating procedures have been established to standardise approaches to curriculum and textbook development, to further assure quality. Industry experts participate in review committees and play a key role in designing and aligning curriculum with the latest industry trends.

Student engagement
The Symbiosis Centre for Distance Learning has robust information technology infrastructure and a tailored learning management system. Servers are hosted on Amazon Cloud and Rackspace. Students participate in interactive e-learning to explore key concepts. They engage in online classrooms including chat forums and other forms of faculty-student real-time interaction. Students can access study resources through the centre’s website including textbooks, self-learning materials, model question papers and archived lectures.

Personal contact sessions are a unique feature where intensive traditional classroom lectures are conducted for Indian students new to blended learning. Their success has encouraged the centre to extend this innovation to other cities. In addition to these program-specific resources, students have access to online research databases and e-journals like EBSCO Information Services and the digital library, JSTOR.

The centre has established comprehensive program information dissemination and student support systems. Eligibility requirements, career opportunities, fees, Frequently Asked Questions (FAQs), alumni testimonials, and the program syllabus are clearly articulated on the centre’s website. The Symbiosis Centre for Distance Learning operates a dedicated Call Centre.

53 P. Irabatti, Interview with O. Lahiri, (telephone, November 5, 2018).
54 S. Kadam, Interview with O. Lahiri, (telephone, November 5, 2018).
that addresses queries of prospective and current students, and an E-Counselling Centre that provides individualised counselling and career guidance. One-to-one counselling sessions are also available over email, telephone and online chat, and through on-campus orientation events. A formal grievance mechanism operates.

The newly established Alumni Association enables networking between past and present students through events, ambassadors and publications. The Symbiosis Centre for Distance Learning maintains close relationships with industry to facilitate placement drives for qualified and eligible candidates. Further, a team of specialist career advisors help prepare candidates for job interviews and aptitude tests.

**Student achievement**

The Symbiosis Centre for Distance Learning introduced the Postgraduate Diploma in Banking and Finance in 2010 when demand for banking and finance professionals surged as banks were privatised in India. Since then, 9,058 students have enrolled. The program is approved by the All India Council for Technical Education. It aims to develop student’s managerial and technical skills with a focus on contemporary Indian and global banking and finance practices.

The Postgraduate Diploma in Banking and Finance is priced at Rs 40,000 (approximately $800 AUD) for domestic students and Rs 165,600 (approximately $3,200 AUD) for international students. Fees are discounted for students from South Asian Association for Regional Cooperation (SAARC) countries (Rs 89,700 or approximately $1,750 AUD). Additional fees are payable for every examination attempt. Registration fees are valid for four years to encourage course completion.

Learning outcomes for the Postgraduate Diploma in Banking and Finance are elaborated in the program’s textbook. Assessments are aligned to these learning outcomes, and progressively included in an online assessment bank. This bank of questions is reviewed annually. Students complete and submit assignments online that contribute 30% towards the final grade. This includes case studies and scenarios, as well as online quizzes. For the final proctored examinations, the Symbiosis Centre for Distance Learning runs over 80 centres throughout India. Students may complete their final examinations at one of these centres either on a computer (i.e., quasi online), or completely offline.

Students completing the Postgraduate Diploma in Banking and Finance are expected to have developed a sound understanding of financial markets, predict and understand future banking and finance trends, successfully apply sector-specific tools, and develop new financial products. The centre anticipates they’ll be better placed to secure employment in India’s banking and finance sectors. This case illustrates the ways in which a leading Indian open and distance Standalone Institution oversees and delivers a quality postgraduate diploma program in blended learning mode.

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56 S. Kadam, Email correspondence (December 7, 2018).
UNIVERSITY OF TASMANIA UNDERSTANDING DEMENTIA AND PREVENTING DEMENTIA MOOCS

Innovative culture
Neuroscience Professor James Vickers and Professor of Aged Care Nursing, Andrew Robinson, started the Wicking Dementia Research and Education Centre in 2008. The centre is based at the University of Tasmania, a public university founded in 1890. The Wicking Centre mission includes "seeking to improve the lives of people with dementia and their carers", in part by providing "educational programs to build knowledge and understanding of dementia within the community".58

They adopted the MOOC model of learning when it was in its infancy at the University of Tasmania. The Wicking Centre MOOCs aim to broadly communicate knowledge of dementia to the general population. The Wicking Centre launched the seven week Understanding Dementia MOOC in 2013, followed by the four week Preventing Dementia MOOC in 2016. The freely available, non-award MOOCs have succeeded in gaining widespread attention with over 220,000 student enrolments from over 185 countries since 2013.59

Completion rates are comparatively high (40-50%).59

The dementia MOOCs were both developed and are now operated by Wicking Centre staff with the subject matter knowledge, technical expertise and professional training to ensure the courses are of high quality and relevance to students. Topic experts are extensively involved in regularly reviewing the MOOC content to ensure they reflect emerging research findings.

Perhaps uniquely, Wicking Centre faculty invite enrolled students to participate in their research. They use quantitative and qualitative surveys to examine dementia knowledge and literacy, and text analysis methods to explore students’ experiences and topics of mutual interest. In this way, the successful MOOCs have also benefited the Wicking Centre indirectly as they have attracted additional research grants.

Student engagement
The Wicking Centre promotes their MOOCs primarily through University of Tasmania’s distribution channels and social media. They also distribute materials to aged care facilities to reach aged care workers who could benefit from expanding their knowledge of dementia and its care. Further marketing efforts will be launched in coming years. The MOOCs target audience is wide and aspirational, and includes people in the early stages of the disease and their families and carers.

The Understanding Dementia and Preventing Dementia MOOCs are conducted using reliable University of Tasmania digital platforms and systems. Most notably, the Wicking Centre has used the University of Tasmania Desire to Learn learning management system. This system was developed to facilitate technology-enabled learning for students enrolled in both regular (i.e., face-to-face) and online mode. To support their MOOCs online learning students, the Wicking Centre has augmented some systems by adding more coding and other functions.

The Wicking Centre is committed to progressively updating systems and processes to continuously improve student engagement and enhance student-student interaction. In time, these systems will be used to further support the Wicking Centre’s research agenda through improved learning analytics and capacity to facilitate direct contact with students. They are also developing capacities for alumni to enable graduates to network beyond the MOOC itself.

Detailed outlines are available to prospective students, along with information about undertaking the Understanding Dementia MOOC and Preventing Dementia MOOC. Learning outcomes are outlined clearly for each MOOC module. As the non-award MOOCs aim to disseminate knowledge broadly throughout the community, pre-requisites for participation are minimal. Applicants simply require sufficient digital literacy to engage in online learning.

The Wicking Centre has a dedicated MOOCs team responsible for enquiries, admission, student support, teaching and assessment. Throughout the MOOCs, faculty monitor student academic and technical queries, and respond by loading frequently asked questions (FAQs) and explanatory videos.

Student engagement is maximised by including interesting games, puzzles and quizzes. Students read content, watch engaging streamed videos, view infographics, explore links to external resources, answer questions and actively participate in moderated discussion forums. Thought trees are used to encourage students to interact and share. Social learning also takes place as students share their stories and experiences with dementia, and engage in networking for themselves. As such, every student cohort has a slightly different learning experience.

Student achievement
The MOOCs curriculum layers information in stages. While the students are not necessarily well versed in human neuroscience or its pathologies, the Wicking Centre has found a way to provide

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59 J. Vickers, Email correspondence (November 20, 2018).
60 J. Vickers, Interview with K. Roberts, (telephone, November 1, 2018).

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28 CASE STUDIES OF AUSTRALIAN AND INDIAN QUALITY ASSURED ONLINE LEARNING
complex information in an accessible way to encourage student learning and achievement. The curriculum for the Understanding Dementia MOOC was designed with the notion of telling a story of the brain, the development of the disease, and then the progression of dementia in the person including care models. Students explore the brain, before the disease state.

The curriculum for the Preventing Dementia MOOC provides the current state of evidence on reducing risk for dementia. The MOOC begins broadly with understanding the notion of prevention and global impacts of dementia on societies, economies and individuals, as well as the measurement of risk at both population and individual level. The MOOC then progressively explores the genetic, physiological and neurological risk factors to look at interventions for prevention, behaviours and current research in this area.

The MOOCs are presented in topic modules (i.e., three for the Understanding Dementia MOOC, and four for the Preventing Dementia MOOC). At the end of each topic module, students complete an online quiz aligned to learning outcomes that reflects the materials presented. Quiz questions were developed by topic experts and others responsible for developing the MOOCs. These quiz questions are periodically reviewed to ensure they remain up to date with research, course content and feedback. Students must achieve a threshold standard (70% score) before being eligible to proceed to the next topic module. Students can repeat these online quizzes as many times as they need to, reviewing the information presented until they reach the required 70% grade.

Student participation in discussion forums is not assessed; however, as students typically have an acute interest in the topic they usually have a high level of motivation to engage. The non-award MOOCs do not require examinations or assignments for completion. The MOOCs have achieved comparatively high completion rates (40-50%). Repeat MOOC quizzes administered to graduates six months after completion reveal that MOOC graduates retain a high level of information.61

A certificate describing learning content for continuing professional development purposes can be provided by the Wicking Centre for a nominal fee of $20 AUD (online) or $50 AUD (hard copy, posted). These fees provide a small income stream that is reinvested in the course. Students completing the Preventing Dementia MOOC can also undertake an assessment of their individual risk. The Wicking Centre’s MOOCs have clearly responded to community need and interest, and this is evidenced by high levels of participation and completion.
UPGRAD AND INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY, BANGALORE
POSTGRADUATE PROGRAM IN DATA SCIENCE

Innovative culture
UpGrad is an Indian education technology (edtech) company that was established in 2014 with a mission of creating “careers of tomorrow”62. UpGrad specialises in online courses that equip Indian working professionals with next generation workforce skills. To consolidate its presence amongst India’s youth, in 2018 UpGrad acquired Acadview, a job skilling platform with a strong university and college base. It has also recruited former Alibaba Group executive, Weisheng Neo, to lead Southeast Asian operations and expand its international reach.

UpGrad’s flagship program, the Postgraduate Program in Data Science, is offered in partnership with the International Institute of Information Technology, Bangalore (IIIT-B). IIIT-B is a deemed university that offers AICTE approved courses, and non-accredited programs such as those developed with UpGrad. The program has successfully graduated four student cohorts, comprising over 1,100 students since being introduced.63

Located in the information technology (IT) hub of Bangalore city and founded in 1999, IIIT-B has long held a mandate to upskill data and IT professionals in India. IIIT-B has years of experience in running on-campus, executive level courses. Its decision to introduce online learning was prompted by the desire to provide flexible education more suitable for working professionals. It co-designed the Postgraduate Program in Data Science with UpGrad to address the critical supply-demand imbalance in data science education in India.

UpGrad’s co-founders have professional backgrounds in media, business, investment and education industries. This combination has proved potent in driving its business and quality strategies. IIIT-B provides intellectual direction under the leadership of the institute’s Director, Professor S. Sadagopan and Dr. Tricha Anjali, while UpGrad brings the market-perspective. Industry experts including chief data scientists from Cognizant, Flipkart, Uber and Gramener inform curriculum development. Some of these industry experts, like Gramener, are involved in delivering courses. UpGrad has instituted a user-friendly and highly scalable ICT system. In addition, a content strategist builds modules and synchronous components and assists academic partners transition into the online learning space.

UpGrad has introduced innovative program development and review processes to enhance student learning and maximise graduate’s career prospects. Prior to launch, each program undergoes multiple levels of review by the IIIT-B Academic Committee, an external consultant, faculty members, industry experts and content strategists to ensure that content is academically rigorous. After the program has commenced, incremental course adjustments are made (e.g., inclusion of live lectures) based on progressive student and industry feedback.

UpGrad ranks well on Net Promoter benchmarks, suggesting high levels of student satisfaction. IIIT-B’s academic committee monitors and reviews program implementation and quality closely to ensure that course standards are state of the art and industry relevant. According to the UpGrad Program Manager, Mr. Vaibhav Gupta, 30% of the course content for the Postgraduate Program in Data Science is overhauled annually.64

Student engagement
UpGrad has invested heavily in technical and digital infrastructure to enhance student engagement and control attrition rates. Asynchronous, high definition videos of lectures are complemented by UpGrad’s online learning platform that enables live sessions to clarify student queries and facilitate peer-interaction. The learning platform is available as an App, and on a desktop. Partnerships with Tapchief gives students access to many industry experts and mentors. Program and careers information, along with a detailed prospectus, is available to prospective students through face-to-face information sessions, and online webinars, blogs and webpages.

UpGrad provides opportunities for pre-registration counselling. Contact details for the Chief Admissions Counsellor and Program Director of the Postgraduate Program in Data Science are listed on UpGrad’s webpage. Applicants take a selection examination, prior to which UpGrad offers mock tests. Once enrolled, students have access to faculty, experts or teaching assistants through chat forums and live sessions.

Student motivation is considered crucial to completion, so teaching assistants monitor class participation in discussion forums throughout the program.

63 V. Gupta, Interview with O. Lahiri, (telephone, October 19, 2018).
64 Ibid.
In addition, student’s compliance with weekly assignment deadlines help detect performance issues that are communicated to program directors. At-risk students are supported academically by IIIT-B faculty, while mentors help students work through professional and personal emergencies.

The **consistent uptake and high completion rate** of 85% for the Postgraduate Program in Data Science are attributable to UpGrad’s engaging and immersive learning environment. Such programs are designed to mimic a university experience where students learn from their friends and surroundings. This is facilitated through group projects, discussion forums incorporating peer-to-peer support, and WhatsApp groups. The unique UpGrad BaseCamp event provides an opportunity for networking and exchange of ideas between students, alumni and industry members. Further, UpGrad has developed relationships with 200+ companies and its career support team provides resume editorial and interview guidance, and conducts placement drives.

**Student achievement**
The Postgraduate Program in Data Science costs Rs 235,000 (approximately $4,500 AUD) and is delivered over a period of 11 months. At this price point, the program has attracted urban students with an average of seven years professional experience. According to IIIT-B’s Professor Anjali Tricha, redesigning the program to keep content focussed and digestible, while accommodating a wider audience from varying academic backgrounds was a learning experience. UpGrad uses Bloom’s taxonomy to design application based content and learning objectives that enable on-the-go learning. It carefully blends academic rigour and professional content sourced from numerous experts to ensure that learning cross validates skills in demand. The program examines topics such as data science, machine learning and big data analytics. Concepts are taught in steps to ensure student engagement with content and sequential progress. A two month capstone project explores contemporary industry problems and are designed by industry experts.

In accordance with the IIIT-B’s assessment framework, various modes of assessment are used including multiple choice questions, quizzes, hands-on coding projects, examinations and opinion polls. Class participation contributes towards the students’ final grade. Videos are followed by quizzes and opinion polls to facilitate critical thinking and clarify concepts, and progressively bridge basic conceptual learning with analysis and application.

**Case studies** focus on current industry problems. Popular amongst these is the Uber case study, which encourages the use and application of analytics to identify reasons and solutions for Uber’s supply and demand challenges. Students can complete the program over a period of four years. Online assessment invigilating (i.e., proctoring) services are provided via Mettl’s online assessment platform. Students are expected to demonstrate abilities in programming, statistical analysis, data modelling and data presentation through summative and formative assessments as well as hands-on coding and capstone projects. The programs’ learning outcomes are clearly intended to equip graduates for successful careers in industry.

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66 V. Gupta, Interview.
67 A. Tricha, Interview with O. Lahiri, (telephone, October 26, 2018).
Innovative culture

The Queensland Government Department of Education’s IMPACT Centre aims to develop the critical thinking, STEM and technology skills of school leaders, teachers and students. Their work is underpinned by the IMPACT Learning Framework. This framework was validated by research partners at Griffith University and was “strategically developed to enhance the outcomes and collective experiences of school students, teachers, parents and the community, who learn in an online learning environment”.

This framework comprises six dynamic, non-linear design elements of effective teaching and learning in an online learning environment. These elements are: Inspire, Model, Practice, Apply, Connect and Transform (i.e., IMPACT). The IMPACT Centre’s work complements their partners’ initiatives including the University of Queensland’s Critical Thinking Project’s META101X Critical Thinking MOOC run on the edx Platform for online courses.

The Queensland Government’s IMPACT Centre is well placed to run such a collaborative initiative. In addition to providing online courses for 6,500+ school students from over 200 schools each year, they lead the Professional Networks Program for Queensland school teachers to transform classroom teaching, learning and assessments.

The Professional Networks Program illustrates how blended learning can be deployed for a transformative professional development program involving practicing teachers and school leaders who are engaged in delivering education in traditional and online school settings. These Professional Networks provide members with expert guidance from the IMPACT Centre and their university and industry partners. They also provide a collaborative network of like-minded colleagues and a professional learning pathway that includes regular online activities.

The IMPACT Centre currently co-ordinates three Professional Networks for teachers. The IMPACT Innovators Network provides guidance on using technology enabled learning including digital pedagogy to enhance school student learning. The Aspiring Thinkers Network fosters skills in embedding critical and creative thinking and 21st century skills. The Aspiring STEM Specialists Network targets school science and mathematics teachers. It provides professional learning pathways to equip teachers to lead STEM curriculum, capability and specialisation. The IMPACT Centre charges an annual fee of $950 AUD that entitles members to participate in the Professional Networks Program. Membership in 2018 is 340 school leaders and teachers from 110 schools across Queensland, with the first group joining in July 2017. It is set to expand significantly in 2019-2020 within Australia and internationally.

Student engagement

The Professional Network Program targets graduate, practicing Queensland school teachers and leaders. After an initial online induction session and introductory online activities, members complete a two-day, face-to-face foundational workshop. These workshops are delivered by the University of Queensland Critical Thinking Project or Sentis Education in conjunction with the IMPACT Centre. Workshops are available for new members of each of the three Professional Networks.

The Aspiring Thinkers Network workshop introduces participants to Peter Ellerton’s pedagogical schema for teaching for thinking, along with Ellerton’s values of inquiry and critical thinking matrix. The workshop for the Aspiring STEM Specialists Network explores the IMPACT Learning Framework’s application to STEM and the development of member schools’ strategic plans for STEM delivery. The IMPACT Innovators Network workshop explores contemporary digital pedagogy that transforms school student learning through the purposeful use of technology. All workshops provide opportunities for Professional Network Program participants to network and to explore practical school-ready activities.

School teachers that complete foundational workshops can then pay the annual fee and become members of one or more Professional Networks. They continue to develop their skills, and learn to apply what they have learnt to their teaching through ongoing online professional development, mentoring and collaboration. The Professional Networks Program grants members ongoing access to learning materials, masterclasses and professional learning teams delivered online and face-to-face.

The IMPACT Learning Framework guides the design and delivery of the Professional Networks Program to ensure an engaging member experience. This involves “the use of participatory pedagogies
(teacher-student-student for active equal interaction); Learning engineer (teacher designs learning [at the site of] of instruction); Community in the making (notion of the development of a community being fluid & responsive); and a Teacher Presence (critical role that builds from the social aspect). Network leaders inspire member contribution, connect like-minded peers and engineer opportunities for members to transform their practice in a supportive and sustainable way.

The Professional Networks Program uses the Blackboard learning management system, licensed to the Department of Education. Professional Network members gain access to learning materials on registration. Learning materials and a catalogue of previous online collaborations are front-end loaded and immediately available to enable members to take control of their online learning. In addition to learning materials developed by the IMPACT Centre and/or their expert partners, links are provided to relevant external websites and applications that add further value.

Professional Network members participate in live sessions led by expert group leaders acting as facilitators throughout the year using Blackboard Collaborate. These live sessions explore the ways in which school teachers have applied learning from the foundational workshops to their practice. They provide engaging learning opportunities to address identified needs and are recorded for on-demand viewing. As a professional development initiative, the Professional Networks Program aims to explicitly focus on and improve school teachers’ teaching practice.

Group leaders distribute surveys and monitor online discussion boards to inform the focus of these live sessions. Peer-to-peer and facilitator-student interaction is enabled through video, audio and text technologies. As such, learning activities are both asynchronous and synchronous. Learning is both participatory and collaborative. Group activities during these live sessions include virtual break out rooms where the group leader moves between groups to monitor progress. Participants are also encouraged to build connections through Facebook groups and Twitter.

**Student achievement**
Curriculum for the Professional Networks is developed progressively in response to member needs. Learning outcomes vary according to the different needs of the various Professional Network cohorts. As the Professional Networks Program is a non-award professional development initiative, there are no explicit assessment tasks or final examinations. However, members are encouraged and supported to work towards a submission to the Department of Education’s Evidence Hub. The Evidence Hub assesses the design, impact, scalability and return on investment of education initiatives. Members can also participate in targeted masterclasses and online teams focused on strategic leadership and action research methodologies.

The Professional Networks Program has demonstrated that professional development opportunities employing blended learning are accessible, sustainable and scalable. The IMPACT Centre’s initiatives inspire educators to improve their practice and are characterised by an active community of like-minded experts and practitioners who aspire to innovate, collaborate and improve student learning outcomes.

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ONE DOT JIRA FUNDAMENTALS COURSE

Innovative culture
One Dot is a private Australian professional services company that was launched in 2000. They provide training, technology and project management consulting throughout Australia and the Asia Pacific region. One Dot specialises in information technology related project management, project management professional certification, and ITIL (formerly information technology infrastructure library) projects. They have particular expertise in Atlassian, Microsoft and IBM information technology products. As specialists in software, information technology and digital projects, One Dot delivers courses to individuals, small and medium sized enterprises, and government departments. In addition to their own proprietary training, One Dot received authorisation as an Atlassian Gold Solution Partner in 2010. This enables them to deliver Atlassian Training products developed by the leading software development company founded by Mike Cannon-Brookes and Scott Farquhar in Australia in 2002. This authorisation acknowledges that One Dot has “made investments and resource commitments to provide advanced product knowledge, product configuration, and robust implementations services”.76

Student engagement
The One Dot website includes information regarding their range of available courses. They deliver a suite of Atlassian Training products developed by the leading software development company founded by Mike Cannon-Brookes and Scott Farquhar in Australia in 2002. This authorisation acknowledges that One Dot has made investments and resource commitments to provide advanced product knowledge, product configuration, and robust implementations services. One Dot targets skilled software developers, users, administrators and coaches with an active interest in the course subject matter.

One Dot’s Atlassian Training products are delivered face-to-face or online as live instructor led courses via web conferencing software. One Dot provides a virtual laboratory environment to actively engage participants. Each course includes pre-defined workshops and virtual laboratory exercises. Peer-to-peer interaction is encouraged. One Dot establishes a server environment specific to each course and participants have access for two weeks after the course to provide additional practice opportunities.

Student achievement
The Jira Fundamentals Course is a One Dot product that provides an introduction to Jira. The internationally renowned Jira software was developed by Atlassian for issue-tracking and agile project management. To ensure student engagement and achievement, One Dot recommends that participants have a moderate working knowledge of Jira, and may encourage applicants to complete the Introduction to Jira course prior to commencing.

The Jira Fundamentals Course targets project managers, Jira administrators, and Scrum Masters who coach agile development teams. The Atlassian Training curriculum explores the tools, methods and processes needed throughout the software development life cycle. The course topics cover Jira project, issue and field management, schemes, workflow, notifications, customising and dashboards. When delivering Atlassian Training products such as the Jira Fundamentals Course, One Dot aims to ensure that the “learner is 100% confident in the basic aspects of Jira application”. The two-day Jira Fundamentals Course is delivered by One Dot face-to-face throughout Australia, or online as a live instructor led course. On completion, participants receive a One Dot Certificate. Atlassian Training is scaffolded such that over time, participants can complete a number of courses to achieve recognition as an Atlassian Certified Professional. Atlassian Certifications can be verified by employers via an online verification window on the Atlassian Candidate Portal.

The One Dot Atlassian Training products enable participants to develop and evidence industry relevant skills, and receive valued certification. Such certification provides an important opportunity for skilled professionals to enhance and evidence their ongoing professional development and industry-relevant skills acquisition through online learning.

74 For additional information regarding Atlassian, see: https://www.atlassian.com
75 R. Green, Interview with O. Lahiri, (telephone, November 16, 2018).
76 Atlassian. Solution Partner Program Brochure. 2017, 2
77 R. Green, Interview.
CONCLUSION

This collection of case studies has illustrated the various ways in which quality assured online learning is being delivered by higher education institutions and education technology companies in India and Australia. Alternative modes of learning, such as online learning, are increasingly acknowledged as vitally important to help meet demand for quality higher education.

These case studies illustrate four distinctive types of approaches to online education: online campus; flexibly delivered online degrees and courses; online open knowledge resources/courses; and online industry-relevant development courses for working professionals. In presenting both Indian and Australian case studies, this collection provides insights into areas for potential collaboration across these four areas.

Deakin University best illustrates the online campus approach. They have adopted an innovative approach in establishing their Cloud Campus, exploring cutting-edge technology and a partnership models to enhance the student learning experience. Courses have been explicitly designed for online delivery and assessment, integrating socially engaged online learning. Comprehensive student support is offered on a ‘whenever-wherever’ basis to encourage student achievement.

Four of the case studies illustrate institutions offering flexible online degrees and courses. The University of Delhi, Symbiosis Centre for Distance Learning and Curtin University all have longstanding expertise in open and distance education. Along with the University of South Australia, these higher education institutions have extended their traditional offerings by investing in infrastructure, technologies, curriculum and pedagogies to introduce blended and online education.

In India, the premier University of Delhi delivers a large number of MOOCs on the recently launched SWAYAM platform. The Government of India hopes that in time emerging credit transfer arrangements will normalise the use of education technologies and online learning across universities and colleges in India. The Symbiosis Centre for Distance Learning augments their distance education methodologies with interactive online learning, and this model may well gain traction as India rapidly deploys education technologies.
Unlike India, Australian university online learning illustrated in this collection of case studies typically involve fully online assessments. In some instances, online assessments are augmented by assessments of student’s learning through work placements. They utilise text matching software, such as Turnitin, and moderation to ensure academic integrity, and equivalent standards to on-campus assessments and examinations. By contrast, Indian higher education institutions incorporate online assessments such as quizzes, and most typically co-ordinate proctored examinations in physical locations throughout India.

Two of the case studies illustrate online open knowledge resources or courses. The University of Tasmania Wicking Dementia Research and Education Centre has been highly successful in communicating knowledge to practitioners and the broader community through non-award MOOCs. In doing so, they have also provided an income stream through certification services, and recruited research participants.

The ground breaking NPTEL project, led by premier Indian technical institutes has provided quality, standardised reference materials through online courses. These materials are being used to augment the learning experience of engineering and technology students enrolled with other higher education institutions throughout India. In time, this repository will provide an invaluable online learning repository.

Finally, three case studies illustrate industry-relevant development courses. They show how partnerships between higher education institutions, education technology and software companies, and government departments can develop innovative online learning products particularly relevant to working professionals. They emphasise relevance to industry, and student engagement. While typically non-award, or providing industry-relevant certification, this partnership model represents opportunities for future growth.

These case studies have illustrated how quality assured online learning is being prioritised and developed by higher education institutions and education technology companies in both India and Australia. The collection has identified the key features and approaches used for developing innovative cultures and strategies that foster high levels of student engagement and student achievement. As such, it contributes to discussions regarding quality assured online learning, and growth in Australia-India partnerships around alternative models of learning, and education technology.
BIBLIOGRAPHY

Dubey, Chandra S. “From the Director, COL Desk.” (n.d) https://sol.du.ac.in/mod/page/view_popup.php?id=2565


## APPENDIX 1 - LIST OF INTERVIEWEES AND RESPONDENTS

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<td>SWAYAM</td>
<td>Professor Amarendra Prasad Behera</td>
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<td>Deakin University</td>
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<td>Siobhan Lenihan</td>
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<td></td>
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<td>Curtin University</td>
<td>Associate Professor Anna Parkin</td>
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<td>IMPACT Centre</td>
<td>Glen Watt</td>
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<td>Dr Sarah Pretridge</td>
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<td></td>
<td>Kevin Connell</td>
<td>Head of Technology Excellence Program and Leader of the IMPACT Innovators Network</td>
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<td>UpGrad and International Institute of Information Technology, Bangalore</td>
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<td>One Dot</td>
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