Addressing the Learning Needs of Out-of-School Children and Youths through the Expansion of Open Schooling

Tony Mays and Rajiv Kumar Singh
Editors
Addressing the Learning Needs of Out-of-School Children and Youths through the Expansion of Open Schooling

Tony Mays and Rajiv Kumar Singh, Editors
The Commonwealth of Learning (COL) is an intergovernmental organisation created by Commonwealth Heads of Government to encourage the development and sharing of knowledge, resources and technologies in open learning and distance education.

Commonwealth of Learning, 2020

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Tony Mays and Rajiv Kumar Singh, Editors
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Email: info@col.org
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<th>Notes</th>
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<tbody>
<tr>
<td>BOCODOL</td>
<td>Botswana College of Open and Distance Learning (now Botswana Open University's Open School)</td>
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<tr>
<td>COL</td>
<td>Commonwealth of Learning</td>
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<td>COMOSA</td>
<td>Commonwealth Open Schooling Association</td>
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<tr>
<td>DE</td>
<td>distance education</td>
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<tr>
<td>EFA</td>
<td>education for all</td>
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<tr>
<td>ICT</td>
<td>information and communication technologies</td>
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<td>LMS</td>
<td>learning management system</td>
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<td>M&amp;E</td>
<td>monitoring and evaluation</td>
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<td>MIT</td>
<td>Massachusetts Institute of Technology</td>
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<tr>
<td>MOOC</td>
<td>massive open online course</td>
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<td>NAMCOL</td>
<td>Namibian College of Open Learning</td>
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<tr>
<td>NEET</td>
<td>not in employment, education or training</td>
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<td>NIOS</td>
<td>National Institute of Open Schooling (India)</td>
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<tr>
<td>ODeL</td>
<td>open (and) distance and eLearning</td>
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<tr>
<td>ODL</td>
<td>open (and) distance learning</td>
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<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
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<td>OEP</td>
<td>open educational practices</td>
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<td>OER</td>
<td>open educational resources</td>
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<td>O(I)S</td>
<td>open (innovative) schooling</td>
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<td>OOSC</td>
<td>out-of-school children</td>
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<td>SDG</td>
<td>Sustainable Development Goal</td>
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<td>TAM</td>
<td>Technology Acceptance Model</td>
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<td>TEL</td>
<td>technology-enabled learning</td>
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<td>TLM</td>
<td>teaching and learning materials</td>
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<tr>
<td>UIS</td>
<td>UNESCO Institute for Statistics</td>
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<td>UKOU</td>
<td>The Open University (United Kingdom)</td>
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<td>UN</td>
<td>United Nations</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
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<td>UNHCR</td>
<td>United Nations High Commissioner for Refugees</td>
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<td>UNICEF</td>
<td>United Nations Children's Fund</td>
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<td>UPNG OC</td>
<td>University of Papua New Guinea Open College</td>
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<tr>
<td>VLE</td>
<td>virtual learning environment</td>
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<td>VLN</td>
<td>Vancouver Learning Network</td>
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Forewords

The closure of school and university campuses due to the recent pandemic saw the disruption of learning for more than 90% of young people. As institutions pivoted to distance learning almost overnight, the Commonwealth of Learning responded quickly by providing guidelines for policy makers and practitioners, online capacity building for teachers and targeted support for Member States, and by promoting collaboration for sharing resources and ideas. However, the new normal of an increased learning crisis with more school dropouts, wide disparities due to the ongoing digital divide, and increased unemployment makes it clear that we need to develop more resilient education systems for the future through:

- mainstreaming distance education;
- building teacher capacity to use distance and online methods; and
- supporting innovations for reaching the unreached.

But how many students have access to electricity, computers and connectivity? Only half the world’s population can access the Internet. In most regions of the Commonwealth, with the exception of the Caribbean, Internet connectivity is well below 50%.

The Commonwealth of Learning was established by Heads of Government to support Member States and institutions in the use of distance education and technologies for expanding access to education and training. COL has been promoting the use of distance education using a range of technologies, from print to radio, TV and the Internet. When the COVID crisis struck and campus institutions were forced to close, open universities remained open. More than 30 universities in the Commonwealth cater to over five million students annually. The scale that open universities and open schools achieve drives down the costs per graduate to less than half of what their campus counterparts cost.

As teachers make the difficult transition from classroom teaching to online provision, they need capacity building. Here again, distance education can be deployed to train large numbers. For example, the National Teachers’ Institute, Nigeria, which is a distance learning institution, has enrolments of over 150,000 every year. In India, the government’s online platform trained 1.3 million teachers in two years.

Similarly, if the child cannot go to school, the school comes to the child. Open schooling, which is usually secondary education offered at a distance, is a cost-effective means of reaching learners who would otherwise not have the opportunity. Having left school at 12, when she was married, Rehana Sultan of
Bangladesh was able to go back to school at the age of 22, when her three children asked for help with their homework. This was only possible by her enrolling in an open school. Research shows that there is “no significant difference” between distance and traditional classroom instruction in terms of learning outcomes; yet there is a lingering perception, especially in the developing world, that distance education is not as effective as classroom-based education.

This timely publication on open schooling, the latest in COL’s Perspectives series, explores the policies, models, methods and practices that can help to ensure quality open schooling not only reaches the unreached but does so in ways that are both affordable and sustainable.

Existing open schooling initiatives in developing contexts in Africa, Asia, the Caribbean and the Pacific, as well as in developed contexts such as Australia, Canada, New Zealand and the United Kingdom, clearly demonstrate that it is possible not only to open the doors of learning for all, but to keep them open even under the most trying circumstances.

This publication calls for open schooling to become an integral component of the resilient education systems needed for the future. I hope that this message is received and acted upon so that we can reach the millions of children, youths and adults who were already disenfranchised before the pandemic and who are in danger of remaining unreached after the pandemic has passed. I congratulate the editors and authors for offering insights, guidelines and practical examples of what can and should be done.

Professor Asha S. Kanwar
President & Chief Executive Officer
Commonwealth of Learning
Out-of-school children have been a focus area of all educationists, and also of the Commonwealth of Learning (COL). *Addressing the Learning Needs of Out-of-School Children and Youths through the Expansion of Open Schooling* is a timely COL publication with very useful ideas and case studies for providing quality schooling to all children, especially out-of-school children (OOSC). The fact that millions of children are out of school is a blot on the face of humanity. School must be the place for all young children, and it must be a brick-and-mortar school with human teachers. No alternative form can substitute for a school. All young children must be in the company of their peers and, in addition to learning academic content, must *learn to live together*. However, the number of children leaving school has been increasing, despite the focus on bringing children to school and keeping them there.

Traditional brick-and-mortar schools alone will not be able to shoulder the burden of providing education to all relevant age groups and to excluded youths. It has become apparent that a portion of the pedagogic process will have to be transacted through modern information and communication technologies (ICT) and media. This makes open schooling not only relevant but rather unavoidable in the present-day context. It has definitely become more convenient to reach education through various media. The added advantage is that media literacy has increased due to easy access to various communication technologies. Since the advent of COVID-19 in early 2020, more than 95% of teaching–learning activities have been conducted through a distance mode. Teachers globally have become proficient in carrying out teaching–learning activities online. Howsoever hard we try, we will continue to have disasters and war zones, where children will be the most deprived. Even during a pandemic, the education of children could not have continued without the technological alternatives available to us. The digital divide will definitely remain an issue in times to come, as online education will become an integral part of the pedagogic process, in either standalone or blended mode. COL’s Strategic Plan 2015–2021 demonstrates COL’s foresight, and it is now a foregone conclusion that the open schooling agenda will have a more prominent place in the Strategic Plan for 2021–2027.

Most of the time, those out of school also do not have access to the latest ICT. The more we adopt ICT for reaching out to OOSC, the greater the chances are that vulnerable groups will become more deprived. Most OOSC live in Asian and African countries that are also very financially deprived. Girls may be more discriminated against than boys, who are given priority in getting access to the latest gadgets. The digital divide may widen. Cutting-edge technologies are not always necessary to provide education, but institutions tend to adopt the latest ICT. Consequently, by the time older technologies become reachable for the less privileged, the content is outdated. We have examples of less popular technologies, such as radio or video programmes, being employed very innovatively to bring education to less reachable areas, but they are infrequently used. The digital divide affects not only technological availability but also the quality of content. Use of the most appropriate and sustainable technologies will be an issue to grapple with.
“Education” encompasses many other competencies in addition to literacy. No doubt, all such competencies and skills can be developed in a school environment, but they can also be developed using modern media and technologies at a distance. Such approaches must be used to expand the learning time of all learners. Open schooling will bring with it the added advantage of inculcating learning to learn, an essential tool for all individuals in the 21st century. This book brings in case studies from different parts of the world that will be of great use to readers and practitioners for teaching not only literacy and numeracy, but also various crucial life skills and vocational skills, for all learners.

It is a foregone conclusion that in the times to come, traditional schooling will adopt open and distance schooling methodologies (in blended modes). Some children, especially those who are less privileged and/or live with disabilities, will receive education through the distance mode, as developing countries have not been able to make traditional schools inclusive. Open and distance learning will not remain confined to providing literacy but will also be used extensively for providing vocational and life skills. COL must focus on skills development amongst OOSC, especially girls, who often are last in line. Cutting-edge technologies are needed, and the technologies most appropriate for different clientele groups must be employed. The most important challenge will be influencing government policies to ensure funding for projects that promise access for the less privileged, and the most appropriate technologies with up-to-date content.

Professor C. B. Sharma
Chairman
National Institute of Open Schooling, India
External Reviewer Comments

Dr Johan Hendrikz

COL’s initiative to publish this book was launched in September 2019, before the COVID-19 pandemic began. The pandemic had and continues to have a major impact on the world. COVID-19 mainly caused a global health and economic crisis, but it also had a particular impact on the delivery of education. Never before has there been so much momentum in such a short time to change the way we deliver schooling to children. Within months, ministries of education, schools and even teachers themselves began to seriously consider a different approach to teaching and learning. What is also noteworthy is that parents not only have become more involved in the education of their children but also are considering new possibilities for school education. Like never before, we see the impetus and momentum for schools to include some kind of distance education in their model of teaching and learning. Words such as remote learning, virtual learning, online learning, blended learning and distance learning were not, in most countries, driving the thinking around teaching and learning models in mainstream schools.

However, the above remarks do not apply in the same way to the millions of out-of-school children who are basically unaffected by the global COVID-19 education crisis, because they were not in school anyway. Open schools or mainstream schools with strong online models for teaching and learning are affected less or not at all by the current situation.

The problem at the moment is that ministries of education are focusing on mainstream schools, where the core of the crisis lies. The thinking is therefore about the same schools, the same teachers, the same content that must work for the same children within a new/adapted teaching and learning model. Out-of-school children (OOSC) are currently not the priority for ministries of education. They focus on how and when they can get the mainstream learners back to their schools. As reported worldwide in the media, returning to school is a controversial issue in most countries. It may even be that resources for open school initiatives are now being redirected to address the crisis in mainstream education.

It is now expected that the same schools and same teachers will do more, while the economic crisis will cause a decline in the financial resources available.

We also read about unfounded views from, for example, President Donald Trump, who has been politicising the concept of distance education in the USA:
Now that we have witnessed it on a large-scale basis, and firsthand, Virtual Learning has proven to be TERRIBLE compared to In School, or On Campus, Learning. Not even close! Schools must be open in the Fall. If not open, why would the Federal Government give Funding? It won’t!! (Donald J. Trump on Twitter, 10 July 2020)

These kinds of views hinder efforts to find new ways of teaching and learning in the future.

The fact that the world will see a more open, technology-enabled school system will not solve the OOSC crisis. Promoting the OOSC cause and promoting the concept of open schooling is now even more important. It was clear before COVID-19 that it is highly unlikely SDG 4 will be achieved by 2030. It is my view that achieving the goal is now even more remote.

The present education crises caused by the pandemic created extraordinarily positive opportunities to promote, strengthen and expand open schooling for OOSC. On the downside, the pandemic may decrease the funding available for open schooling initiatives and increase the number of OOSC because of financial constraints on parents.

What is currently happening in mainstream education has the potential to create capacity and understanding and even generate resources in education systems that will support a move towards open school education.

This context makes the present publication important and relevant, and it comes at an opportune time.

Professor Junhong Xiao

A search in OAsis (COL’s open access repository) shows COL has published 128 books to date on the theme of open schooling. Some of them focus on a single theme (for example, Costs and Financing in Open Schools, Quality Assurance Toolkit for Open Schools and Open Schooling with Open Educational Resources: Opening Doors, Creating Opportunities), and some are practice focused (for example, Open Schooling: Selected Experiences). Perspectives on Distance Education: Open Schooling in the 21st Century, which was published in 2009, covers three major themes — policy, technology and cost in open schooling — and presents some country/school case studies.

To some extent, the current publication, Addressing the Learning Needs of Out-of-School Children and Youths through the Expansion of Open Schooling, is similar to the 2009 book in that it also comprises two parts: theory/policy/model and case studies/practice. Nevertheless, it does not replicate the earlier publication. First, it covers a wider range of themes, from the need for and nature of open schooling, to issues such as gender, curriculum, open educational resources, open, distance and eLearning, and open educational practices, as well as monitoring and evaluation, technology-enabled learning, and finance. Although there has already been research on these themes in the context of open schooling, theory and practice have been evolving, and both have no doubt informed open schooling developments in the past decade. I believe one of the aims of this book is to present new developments in related theories, policies and models, and I think it has achieved this aim. Second, the cases studies included in the book are
not country or school based but region based. Lessons drawn from region-based case studies are equally relevant to the target readers of this book and in fact may have new implications for them. Moreover, these case studies can also reflect new practices that have been emerging in the past decade. I believe this book is a welcome addition to the knowledge base for open schooling.

Overall, the chapters are knit into a coherent whole and the contents are interesting, portraying a vivid picture of the open schooling landscape in COL’s “jurisdiction.”
Contributors

Editors/Authors

Tony Mays

Tony Mays is COL’s current Education Specialist for Open Schooling. Formerly from the UK, Tony started his career as a volunteer secondary school teacher in Malawi and then moved to work with two NGOs in South Africa, Promat Colleges and Saide, and later the Universities of South Africa and Pretoria, in the field of open and distance learning. He is former President of the National Association of Distance Education and Open Learning in South Africa (NADEOSA); former Honorary Treasurer of the Distance Education Association of Southern Africa (DEASA); and former Chair of Distance Education and Teachers’ Training in Africa (DETA). He is an Associate Editor of the *Journal of Learning for Development* and a reviewer for several other journals and book publishers. Tony holds a DEd in Curriculum Studies.

Rajiv Kumar Singh

Dr Rajiv Kumar Singh is presently serving as Director (Academic) at the National Institute of Open Schooling, India. He has more than 20 years of experience in the school education system and has rendered his services at various levels of academic leadership as well as in academic administration. He has worked extensively for curriculum planning and development at primary, secondary and senior secondary levels. He is also a member of various core group committees for the Ministry of Education, Government of India, including a thematic core group for implementing inclusive education, e-content development for children with special needs, the formulation of a policy for implementing early childhood care and education, and the finalisation of a toolkit and a classroom and school support plan for the Government of India. He also worked as a member of the Review Committee, Government of India, for the National Education Policy 2020 and as a member of the committee for implementing the prime minister’s e-Vidya programme.
Authors

Kirston Brindley
Kirston received her PhD in psychology in 2004. She is a research psychologist specialising in neuropsychology, cognitive psychology, education and research methods. She worked for ten years at the University of the Witwatersrand psychology department, where she lectured, authored articles and supervised students to the level of PhD. She subsequently worked in the non-governmental development field in research, monitoring and evaluation (M&E). She has designed and implemented M&E frameworks for various developmental projects reporting to international donor agencies in general education, open and distance education, distance learning, health and gender. In addition, she has run workshops and developed training materials on M&E frameworks, techniques and programme design.

Charity Mbolela Bwalya
Charity Mbolela Bwalya is a Zambian citizen with over 35 years of work experience. Currently, she is the Principal Education Officer (Colleges) under Education Boards Services in the Directorate of Planning and Information, Ministry of General Education. She also co-ordinates a multi-donor facility project called Girls’ Education and Women’s Empowerment and Livelihoods (GEWEL). The project supports vulnerable girls from extremely poor households through social cash transfers. Charity was the Chair for the Commonwealth Open Schooling Association, Africa Chapter, from 2018 to 2020 and has extensive experience in open schooling in Zambia. She has worked under the Directorate of Open and Distance Education for more than 14 years. She has organised local and international conferences and presented papers in various fora, both local and international.

Dean Dundas
Dean was born in Guyana and spent his early years in Jamaica before travelling to England. Educated at the University of Manchester’s Institute of Science and Technology, Dean has played key roles in launching several successful business ventures. Notesmaster is one such venture, designed to support ministries of education in developing countries as they introduce technology-enabled learning. Dean has been working in the field of eLearning and promoting the use of OER since 2007. He has worked extensively in Africa and the Caribbean, implementing and directing programmes in partnership with UNICEF, the World Bank, the Commonwealth of Learning, the Organisation of Eastern Caribbean States, the Caribbean Community and other regional organisations. The establishment in 2019 of the Notesmaster Foundation, in Jamaica, is a personal milestone that will enable the continuance of further support to open and distance learning stakeholders.
Tommie Hamaluba

Tommie Hamaluba is a citizen of Botswana with 27 years of work experience. Tommie holds a Doctor of Business Administration from Zambia Open University. His other qualifications include a Master of Business Administration, Bachelor of Business Administration, Diploma in Secondary Education, Certificate in Accounting, Certificate in Distance Education for Practitioners, and Post Graduate Certificate in Quality Assurance in Education, and he has presented papers at local and international conferences. Prior to joining Botswana Open University in 2013, he worked with various portfolios as an educationist. He currently serves as Course Developer, Subject Specialist (Business) in Open Schooling at Botswana Open University.

Mike Hollings

Mike Hollings has been the Chief Executive of Te Kura since 2006. Te Kura provides open distance education for more than 22,000 students, from early childhood to year 13. Prior to joining Te Kura, Mike was the National Manager Analysis and Policy for the New Zealand Education Review Office, with responsibility for evaluating the quality of education in New Zealand schools. Mike has also held senior policy positions with the Ministry of Maori Development and the New Zealand Ministry of Education, and he has led the establishment of Maori language immersion initiatives. He is the current Chair of the Pacific Chapter of the Commonwealth Open Schooling Association.

Edwig Karipi

Dr Edwig Karipi is the Manager of Open Schooling at the Namibian College of Open Learning (NAMCOL). Her role is to supervise the development of open schooling materials and courseware, both print and eLearning. Before joining NAMCOL, Dr Karipi had a successful career in the Namibian education sector as a teacher, curriculum developer, chief examiner and chief marker for the Namibia Senior Secondary Certificate in Agriculture. Dr Karipi served as a Chapter Chair for the Commonwealth Open Schooling Association from 2015 to 2017 and has successfully contributed to achieving COL’s objectives in capacity building and quality assurance. Dr Karipi holds a PhD in Education, focusing on open educational resources, from the University of South Africa and has various other academic qualifications in the field of education and agriculture.

Anshul Kharbanda

Anshul Kharbanda, Academic Officer at the National Institute of Open Schooling (NIOS), is the Commonwealth Open Schooling Association Chapter Chair for Asia. She has worked extensively with various international organisations and institutions. She was an intern at the Commonwealth of Learning from January
to March 2018, where she primarily worked on the Open/Innovative Schooling Model. During the internship, she had the opportunity to visit BC Open School, South Island Distance Education School, North Vancouver Distributed Learning School and Vancouver Learning Network, interacting with them and learning about their systems and processes. Anshul was a member of the NIOS team that conducted the peer-to-peer institutional quality review of the Open School, Bangladesh Open University (OS-BOU) and was involved in facilitating the development of gender policy for OS-BOU and the Open School, National Institute of Education, Sri Lanka. She was also a member of the Indian delegation that visited Japan and learned about their educational systems, primarily elementary and secondary school, and their national curriculum standards. She attended the Ninth Pan Commonwealth Forum, held in Edinburgh in 2019. She also visited The Open University, UK, and the Institute of Education, University College London, as part of an NIOS delegation to learn about their innovative practices and models.

Sandhya Kumar

Dr Sandhya Kumar is presently working as Deputy Director, Academic at the National Institute of Open Schooling (NIOS), India. With a specialisation in home science and a doctorate in education, Dr. Kumar has been working in open schooling for the past 28 years, contributing enormously to growth and development at NIOS. Dr Kumar specialises in the instructional design of self-learning materials, having developed numerous courses in home science, including vocational courses. Her forte is designing assessment and evaluation strategies and innovative learner support systems. She has worked extensively in disability education and has also been instrumental in designing training packages for other stakeholders in the open school system in India. Dr Kumar has many publications to her credit and has presented papers at national and international conferences.

Wilhelmina Louw

Ms Wilhelmina Louw is an eLearning Programme Developer at the Namibian College of Open Learning (NAMCOL). She joined NAMCOL in 2006 as a programme developer responsible for developing print-based and multimedia resources for Grade 10 and 12 distance learners and was appointed Programme Developer: eLearning for Open Schooling at NAMCOL in 2013. Since then, she has successfully spearheaded online open educational resources content development on the free eLearning platform Notesmaster and the implementation of online learning on the Moodle platform for tertiary-level programmes at NAMCOL. Ms Louw is actively involved in promoting eLearning in Namibia as a member of the National ICT Steering Committee and the NOLNet eLearning committee in Namibia. She has several years' experience in training teachers as well as open and distance learning professionals in the instructional design of print-based, multimedia and online learning resources. Ms Louw holds an advanced diploma in Economic Science from the University of Johannesburg and a master's in Business Administration from the Management College of South Africa, as well as other academic qualifications.
Sukanta K. Mahapatra

Dr Sukanta K. Mahapatra is currently working as Assistant Director (Academic) for the National Institute of Open Schooling. He has nearly nine years of experience working in the open and distance learning mode. As an academic, he has planned, designed and developed the curricula of many courses in the areas of sociology, gender studies, introduction to law, and disability studies in open and distance learning (ODL). Apart from publishing many papers, books and journal articles, he has also presented papers at more than 30 national and international seminars, conferences and workshops. Dr Mahapatra has been interested in and developed keen expertise in eLearning, media and virtual reality, gender and education, ODL for persons with disabilities, and curriculum development.

Ephraim Mhlanga

Ephraim is a Programme Specialist: Quality Assurance at Saide. Ephraim holds a PhD in Quality Assurance in Higher Education (University of the Witwatersrand). He has supported several countries in Southern Africa in developing quality assurance frameworks for both contact and open and distance learning institutions. On behalf of the Commonwealth of Learning, he has also supported the development of quality assurance policies for open schools in South East Asia. In addition to supporting policy development, he has also supported the development of open schools in Zambia and Namibia, and in Vanuatu in the South Pacific. He has gained extensive experience in working with African universities since joining Saide in 2007. His work in these institutions has involved supporting the development of institutional quality assurance frameworks. Amongst his several publications on quality assurance is the book Quality Assurance in Higher Education in Southern Africa: Challenges and Opportunities (Peter Lang, 2013).

Heroldt Veekama Murangi

Dr Heroldt Vekaama Murangi is the Executive Director at the Namibian College of Open Learning (NAMCOL). Dr Murangi is a teacher by profession and has served the education sector in various portfolios since 1992 as a teacher and as an inspector for continuing and distance education programmes in the country’s various political regions. He has served NAMCOL since 1998 in various capacities, first as Regional Manager and later as Deputy Director, before taking the institution’s helm in 2007. Dr Murangi holds a Higher Education Diploma and B.Ed. Honours from the University of Namibia, a Master of Education from the University of Massachusetts, and a PhD in Education Management Law and Policy Studies from the University of Pretoria. His PhD thesis was titled Managing Student Transition from Conventional to Open Schooling: A Case Study of Namibia.
Som Naidu
Dr Som Naidu is Pro-Vice Chancellor and Director of the Centre for Flexible Learning at the University of the South Pacific. He possesses undergraduate qualifications from the University of Waikato, New Zealand and graduate qualifications in educational technology from Concordia University, Montréal, Canada. He has undertaken sabbaticals at the Institute for Learning Sciences, Northwestern University, Illinois, USA; the Learning and Teaching Unit of Manchester Metropolitan University; and the Learning and Development Directorate at the University of London. Dr. Naidu is a Principal Fellow of the Higher Education Academy, UK. In May 2014, the Open University of Sri Lanka awarded Dr Naidu a DLitt (Honoris Causa) in recognition of his extensive contribution to the field of open, flexible, distance and eLearning, both regionally and internationally. A former president of the Open and Distance Learning Association of Australia, Dr Naidu has served as Executive Editor of its journal, *Distance Education*, since 1997.

Jan Nitschke
Mr Jan Nitschke is the Director of Curriculum and Material Development at the Namibian College of Open Learning. The directorate develops new and revises existing programmes, curricula and course material, using an innovative range of open learning methodologies. Mr Nitschke has steered the implementation of vocational education and training programmes and a range of tertiary programmes, as well as the open schooling programmes. Mr Nitschke leads the college’s Academic Advisory Team, which considers initiatives for programmes, learner support, research and quality assurance. He also leads quality assurance audits internally and externally. Mr Nitschke holds a master’s degree in Social Science from Umeå University, in Sweden, and a Bachelor of Science from the University of the Western Cape, in South Africa, as well as a range of other tertiary qualifications. His experience spans physics instruction, teacher training, research, quality assurance and open distance learning.

Yousra Banoor Rajabalee
Yousra has worked for ten years at the University of Mauritius. She specialises in interactive learning materials development and instructional design and currently holds an academic position at the Mauritius Institute of Education. Her research interests are in learning design, rapid eLearning, and MOOCs. She has been involved in funded research projects and in international consultancies with entities such as the Commonwealth of Learning and the Southern African Development Community, and is actively engaged in research in the field of eLearning and capacity-building projects for teacher training. She has recently contributed to a report on ICT in secondary education in Sub-Saharan Africa, funded by the MasterCard Foundation.
Sheldon Samuels

Sheldon Samuels is the National Coordinator for Adult and Continuing Education in Belize’s Ministry of Education, Youth, Sports and Culture. During his 29 years of experience, Mr Samuels has worked closely with many continuing education programmes at the local and national levels to develop policies for expanding access, providing training opportunities and supporting the development of continuing education institutions. Currently he is managing a team of over 75 teachers to develop open educational resources at the secondary level for teachers and students. He is also an adjunct lecturer at the University of Belize and Wesley Junior College. His research interest is to understand the relationship between music of all genres and students’ academic achievement scores. In 2011, he earned his doctoral degree in Higher Education from Oklahoma State University.

Chanchal Kr. Singh

Chanchal is currently working as a Training Officer at the National Institute of Open Schooling (NIOS) in India. He has played a key role in conducting training in the NIOS Diploma in Elementary Education programme, which was the largest in-service teachers’ training programme in India through the online mode. While working at NIOS, he has attended about 25 training workshops on the design, development and delivery of MOOCs as a resource person at different schools, colleges and universities across the country. Chanchal completed his education with the University of Calcutta and has taught for 13 years in the faculties of different educational institutions. He has also engaged in military training as a Commissioned Officer (Lieutenant) in the National Cadet Corps (Army).

Sadia Afroze Sultana

Sadia joined Bangladesh Open University (BOU) in 1998. She was the Dean of Open School, BOU from 2012 to 2016 and was the elected Vice Chairperson of the Commonwealth Open Schooling Association from 2014 to 2016. She completed a BSc (Hons) in Physics and an MSc in Nuclear Physics at Jahangirnagar University, Bangladesh, and a Doctor of Engineering in Applied Quantum Physics and Nuclear Engineering at Kyushu University, Japan. Professor Sadia has been involved in COL-sponsored projects for women’s empowerment, open distance learning (ODL), and the open educational resources (OER) movement in Bangladesh. She contributed to the development of the OER and Quality Assurance Policy for BOU. She is a global network member of Creative Commons, USA, with certification on open licences. She also received intensive training on instructional design and eLearning facilitation from the Open Polytechnic, New Zealand. She regularly writes in various journals on ODL, OER, women’s empowerment and nuclear physics.
Introduction

Tony Mays and Rajiv Kumar Singh, Editors

Background

This publication was conceptualised during an open schooling pre-conference workshop on 8 September 2019, in Edinburgh, Scotland. It preceded the Ninth Pan-Commonwealth Forum (PCF9), which was co-hosted by the Commonwealth of Learning (COL) and The Open University (UK) at the BT Murrayfield Stadium from 9–12 September 2019.

The publication was spurred by the fact that COL was approaching the end of a six-year strategic plan, which seemed an appropriate time to pause and reflect on the lessons learned over the intervening period and to identify the issues that might inform the next strategic planning process.

The book was conceptualised before the COVID-19 pandemic closed schools and campuses all over the world and changed distance and online provision in schooling from a largely secondary or non-existent service in many countries to a mainstream practice. Looking ahead, the expansion of open schooling could be a way of responding to the impact of the COVID-19 pandemic, and other reasons for school campus closures, to create more resilient schooling systems for the future.

Open Schooling Beyond COVID-19

As observed in a recent COL briefing note (2020), to manage the COVID-19 pandemic, governments around the world were compelled to restrict travel and impose physical distancing norms. This meant finding alternative ways, using distance education methods, to ensure that school learning could continue.
without requiring teachers and learners to be in the same space at the same time. Even very remote learners can be reached via distance education. In the past, it has been used to reach children from the Australian outback to the Canadian prairies, and it currently supports millions of learners in Southern Asia and Sub-Saharan Africa.

Developing approaches for more flexible provision of schooling opportunities can also help education systems meet the needs of numerous other learners who have been unable to access schooling, are in school but are not learning effectively, have dropped out of school, or need a second opportunity to improve their schooling outcomes in order to access employment or further education and training opportunities. Responding effectively to a short-term crisis can therefore help education systems develop more flexible and resilient approaches for the longer term, as illustrated in Figure 1.

![Figure 1: A resilient schooling system](image)

As illustrated in Figure 1, face-to-face schooling will likely remain at the heart of the schooling system and is probably the preferred option for very young learners as well as learners with special educational needs that parents/caregivers may not be equipped to address. However, hybrid (some face-to-face, some distance, some online, some broadcasting) and blended (face-to-face and online) provision could conceivably become the norm for older learners.

But for the approximately 300 million children unable to get to a physical school, an open schooling model, using open, distance and eLearning (ODEL) approaches and methods, should be an essential element of an integrated schooling system.

It is possible that learners could move between models as needed. For example, learners attending face-to-face schooling who encounter certain barriers (e.g., ill health) might continue learning from home through distance learning; learners struggling with some subjects through distance learning might be integrated for a time into more structured blended or face-to-face learning. In a study targeted at supporting learners in conflict zones and disaster areas, Morpeth et al. caution that “children need to learn in a social environment: ODL is not a substitute for direct teaching and face-to-face contact with other children, teachers and carers,” but it can support basic education provision in the following five areas:
1. Providing para-formal or alternative schooling systems.
2. Supporting successful transition to, and performance within, formal schools.
3. Raising quality by providing ready-made educational resources (formal or non-formal).
4. Providing networks and training for intermediaries (e.g., teachers, broadcasters, mentors).
5. Providing communication for development (C4D) strategies (e.g., health, school readiness advocacy). (Morpeth et al., 2009, p. xv).

ODeL can be particularly useful as a means for both accessing and supporting education when traditional face-to-face schooling is not possible (Creed & Morpeth, 2014). It can also be used to augment face-to-face schooling for children who are disengaged or struggling.

The fact that Australia, Canada and New Zealand, which are among the more developed economies in the Commonwealth, have highly sophisticated open schooling provision underscores that open schooling is not a second-class education model. In fact, there is a growing recognition that the traditional schooling system, based on an industrial model of one-size-fits-all provision, simply does not meet the needs of current and emerging societies, workplaces and learner diversity. There is a need for more openness and more flexibility. As we were finalising this publication, for example, a discussion had been initiated in the United Kingdom about the need for a new national open school to complement the UK’s highly successful Open University.

This publication focuses on open schooling. The role of open schooling as part of an integrated response to campus closures is discussed in more detail in Towards More Resilient Schooling: Possible Models for the Future (COL, 2020).

Structure of the Book
The book is divided into two parts:

- **Part A** focuses on theory, policy and models that identify common issues across different contexts but for which contextually relevant responses are needed.
- **Part B** focuses on current practices and developments in the different regions where COL is active.

It is hoped that readers will find the cross-pollination of theory and practice useful in guiding their own decision making.

Overview of Chapters

**Part A** contains nine chapters.

**Chapter 1** explores the need for and nature of open schooling. It also outlines some of the ways in which COL has sought to help different countries address the challenge. The chapter explores a theory of change and identifies some of the key issues that will be picked up and discussed in more detail in subsequent chapters.
Chapter 2 then examines the nature of the open schooling curriculum. It notes the need for the curriculum to address the emerging needs of societies and workplaces but in ways that can accommodate the diversity of learners who access open schooling options. It observes the increasing trend towards the use of technology and provides examples from current practices at the National Institute of Open Schooling in India.

Chapter 3 explores the value of open educational resources (OER) for broadening access to high-quality open schooling in developing countries. The key message of the chapter is that OER can reduce the cost of schooling, promote quality and enhance student success. However, realising such benefits depends on the innovative ways teachers find to integrate the resources into their teaching and learning processes.

Chapter 4 then investigates how recent developments in technology such as massive open online courses (MOOCs), blockchain, digital credentialing, augmented reality (AR) and virtual reality (VR) can contribute to the improvement of open schooling models from different perspectives. It argues that ICT-enabled pedagogies can enhance the learning outcomes of students engaged in open schooling. The chapter also elaborates on the issues of learning recognition and validation within open schooling and discusses the potential of emerging technologies such as blockchain to support the development of valid and portable e-credentials.

Chapter 5 notes the unique challenges that open schooling needs to address, and it identifies issues requiring monitoring and decisions that must to be evaluated if access is to have a reasonable chance of success and if the open schooling system is to improve. The importance of collecting and analysing appropriate data in appropriate ways to inform quality decision making is emphasised.

Chapter 6 presents financial models that are appropriate for enabling open schooling to be more accessible and sustainable without compromising service delivery. The chapter presents the importance of funding open schooling because of its potential to provide equitable learning opportunities to young people who otherwise would not be reached. In addition, the chapter discusses various funding models and diverse revenue sources.

Chapter 7 examines the existing literature to explore the contribution of ODeL and open educational practices (OEP) to open schooling systems. In doing so, the chapter explores the term openness within a distance education system, as a philosophy that underpins the open schooling concept. The chapter then focuses on the existing practices of ODeL and OEP within Namibia. Suggestions for future provision are offered.

Chapter 8 explores gender issues in relation to open schooling. In many contexts, girls are more likely than boys to face barriers to schooling opportunities. In other contexts, boys are more likely to drop out of schooling. Different strategies are therefore needed in different contexts to promote gender equity through open schooling.

Chapter 9 then discusses policy, drawing on all the preceding chapters. It identifies some of the key issues policy needs to address to ensure that open schooling provision realises its potential in a quality, sustainable way.
Part B comprises five chapters, which discuss the current and evolving practices in four key regions of development:

- Chapter 10 Africa
- Chapter 11 Asia
- Chapter 12 the Caribbean
- Chapter 13 the Pacific

The focus in these chapters is on practice. Readers are invited to reflect on the ways in which the theories, models and policies discussed in Part A are manifested in practice in the case studies that form Part B.

Chapter 14, compiled by the editors, then summarises some of the key issues and explores implications for possible future practice.

The editors take this opportunity to thank everybody who contributed to the development of this publication.

References


PART A

Policy and Theory
Abstract: This chapter explores some of the causes and consequences of out-of-school children. It then explores the potential of open schooling to address this continuing challenge and identifies some of the ways this type of schooling may be able to contribute. It also includes a reflection on COL’s work in open schooling over the past several years and what has been learned from this experience, to offer some suggestions for future provision.

Introduction

The United Nations Educational, Scientific and Cultural Organization (UNESCO) reported that there were approximately 263 million young people out of school in 2014 and observed that in recent years, there had been no improvement in reducing the rates of out-of-school children (UNESCO, 2016). In some countries, in fact, numbers seemed to have begun to rise. For example, the United Nations Children’s Fund (UNICEF) indicated that by 2018, more than 300 million children were out of school, observing in particular:

Countries affected by conflict and disasters bear a heavy burden in terms of their out-of-school population. Nearly 1 in 3 of all out-of-school children aged around between 5 and 17 years old — an estimated 104 million young people — live in countries affected by emergencies. When it comes to out-of-school children at the primary level, more than half of out-of-school children live in emergency countries. (UNICEF, 2018, p. 5)

As indicated by the United Nations (UN), the older that refugee and migrant children get, the less likely it is they will complete secondary schooling, let alone post-school education and training (UN, 2019). In addition, the United Nations High Commissioner for Refugees (UNHCR) observes that education provision
may provide the only sense of stability amidst the chaos of the rest of their lives for children forced to flee their homes, often for protracted periods (UNHCR, n.d.). For these children, spending seven hours a day in a stable brick-and-mortar traditional school is unlikely to be an option.

Of course, there are multiple other reasons why children may not be able to access schooling, or may not stay in schooling, or may not be successful in schooling, even if we manage to retain them. Addressing this diversity of needs and contexts requires greater openness and flexibility about how we make schooling opportunities available.

In addition to children of school-going age who are out of school, many countries also have large and growing populations of young people above the normal school-going age who have not completed schooling or who have but not well enough to progress (DHET, 2018; Mascherini et al., 2012). This sub-population of young people “not in education, employment or training” (NEETs) aged 18–23 may feel they have little stake in society, and no obvious means to become better integrated. In a similar vein, there are numbers of adults over the age of 24 in every country who also did not complete schooling, or not well enough to progress. They may turn to anti-social activities, including radicalisation, as expressions of their frustration.

The International Commission on Financing Global Education Opportunity (2016) rightly refers to this as a crisis, calling for better performance from education systems, more innovation — including the appropriate use of appropriate technology — support for non-state-based provision, as well as attention to issues such as inclusion, early childhood development (ECD), and the needs of refugees, girls and the disabled, all of which requires more, and more efficiently used, funding. These are issues explored in various chapters in Part A of this book.

More recently, the World Bank (2018) has recognised the central importance of education in times of great change, noting that the current crisis is a product of poor learning outcomes, lack of preparedness of both learners and teachers, inadequate and poorly utilised inputs, and other deeper systemic weaknesses.

More recently still, UNESCO’s Global Education Monitoring Report for 2020 has identified the continuing challenges associated with access, equity, learning proficiency, quality and finance.³

Open schooling may be one way to address the challenge to make the system work better for learning. But open schooling may also be variously interpreted.

Goals/Overview of Chapter

This chapter seeks to provide an overview of the nature of and need for open schooling. It presents a framework of key concepts, which will be explored in more detail in subsequent chapters.
Definitions of Key Concepts
The Commonwealth Open Schooling Association (COMOSA)\textsuperscript{4} has adopted the following definitions, which inform the discussion in this chapter:

- **Open and distance learning (ODL):** A system of teaching and learning that is characterised by the separation of teacher and learner in time and/or place; uses multiple media for delivery of instruction; and involves multiple means for regular two-way communication between learners and peers, learners and teachers, and learners and administrators.

- **Open/innovative schooling (OIS):** A supplementary or complementary model of schooling that uses a range of flexible approaches, based on open and distance learning methods, to provide structured learning opportunities. OIS is used predominantly for out-of-school youths and adolescents so they can complete their schooling and/or gain skills for the workplace. However, OIS provision may also extend to school-level learning opportunities for adults.

- **Open school:** An institution/entity delivering teaching and learning. The name can vary depending upon the context. The main identifier is that its method of delivery, its services and the learners it serves differ from the structured mainstream school system in being more open about who can study, when and how.

Discussion
The discussion that follows explores the following key questions:

- How open is open schooling?
- How can the system be opened?
- How can the curriculum be opened?
- How can managers and teachers be more open?

How Open is Open Schooling?
Bates (2015) observes that the notion of open education may take several forms:

1. *Education for all*, meaning free or very low-cost school, college or university education available to everyone within a particular jurisdiction, usually funded primarily through the state.

2. *Open access to programmes that lead to full, recognised qualifications*. These may be offered by national open universities or, more recently, by the OER Universitas (OERu) — or by open schools.

3. *Open access to courses or programmes that are not for formal credit*, although it may be possible to acquire badges or certificates for successful completion. Massive open online courses (MOOCs) are a good example.

4. *Open educational resources* that instructors or learners can use for free. The Massachusetts Institute of Technology (MIT)'s OpenCourseWare, which

\textsuperscript{4} https://comosacnect.org/about/
provides free online downloads of MIT’s video recorded lectures and support materials, is one example.

5. **Open textbooks**, which are online textbooks free for students to use.

6. **Open research**, whereby research papers are made available online for free downloading.

7. **Open data**, meaning data open to anyone to use, reuse and redistribute, subject only, at most, to the requirement to acknowledge the source and share the data openly.

Other perspectives include:

- Open as in access for all — i.e., sustainable inclusive learning with universal and flexible access to quality school education and skills development (NIOS, 2012).
- Open as in connected and permeable (Sotiriou & Cherouvis, 2017).
- Open as in offering bespoke curricula (Open School BC, n.d.).
- Open access publishing (Costello et al., 2019).
- Open as in integrating other ways of knowing, such as indigenous knowledge (Adeyeye, 2019).
- Openness in which personal freedom ends only where others’ freedom to act begins (Economides & Perifanou, 2018, p. 3695).

In a similar vein, different models of open schooling have evolved. Examples of different models include, but are not necessarily limited to: single-mode institutions offering their own examinations, as with the National Institute of Open Schooling (NIOS) in India, or where learners write national examinations after receiving support from an open school, such as the Namibian College of Open Learning (NAMCOL) or the University of Papua New Guinea’s Open College (UPNG OC); ordinary public schools offering support to out-of-school learners after hours; as well as single- and dual-mode institutions with varying degrees of autonomy (for example, the Vancouver Learning Network) (Abrioux & Ferreira, 2009). The models chosen will depend on the material and policy context involved and the ways in which issues such as copyright, accreditation and datafication are addressed, among other things (Atenas et al., 2019).

However, technology has begun to offer an alternative option: virtual classroom spaces that can exist alongside as well as independently of formal school systems and physical infrastructure, and can enable greater collaboration within and between institutions and national systems.

Key features of a technology-enabled learning (TEL) approach to the provision of open schooling are open educational resources (OER), open access software and free or low-cost Internet connectivity, all of which enable more open practices:

By removing or substantially reducing the expense normally associated with software, textbooks, and course fees, education becomes more accessible to more people. The open education movement can also help raise the quality of education for all students because instructors are better able to share and build on one another’s pedagogical innovations. It is here, in the second sense of “open,”
meaning customizable by and shareable among instructors, that we have the potential to design more engaging, locally relevant, interactive, and effective teaching resources. (Biswas-Diener & Jhangiani, 2017, p. 5)

However, as Mathewson (2017) observes, despite interesting initiatives such as Engage NY\(^5\) and Open Up Resources,\(^6\) education systems have not traditionally been geared towards the use of standalone OER. Mathewson argues this might change if “whole-course” curriculum resources become freely accessible. There is growing evidence that when content is packaged coherently, such as in the form of open textbooks, the same learning outcomes can be achieved but at a lower cost for students (Hilton, 2019). This is the current focus of COL’s OIS model: the development of coherent, OER-based and curriculum-aligned learning content, published as OER on a shared platform and made available even offline using COL’s Aptus device.\(^7\) This is discussed in more detail in Chapters 3 and 4.

Of course, content alone is not enough; it is necessary to train teachers in resource-based teaching and “flipped classroom” approaches (Papadakis et al., 2019), as well as in online learning, as models evolve from centre-based support to online support, and increasingly to supporting non-traditional distance learners. It is also important to train “centre” managers (both physical and virtual) in how to support, monitor and evaluate such provision (as explored in Chapter 5). For many existing school education providers, the appropriate use of technology presents a considerable systemic shift from traditional ways of providing schooling, an issue that is explored in Chapter 4.

COMOSA argues that:

- open/innovative schooling has the capacity to expand access, to promote equality, to deliver high-quality and effective services, and to reduce the unit costs of education at all levels; and
- those who are involved in open/innovative schooling share their experiences and knowledge. Thus, a community of practitioners support one another to improve their practice. COMOSA members actively seek to highlight real stories of good ideas being implemented across the Commonwealth and around the globe, that result in greater access to education for more people. (COMOSA, 2019)

These issues are explored in more detail in Chapters 6 and 7 of this book.

**How Can the System Be Opened?**

As Collins and Halverson (2018) observe, although progress made towards achieving universal public schooling has had significant benefits, the equation of learning with schooling no longer holds: learning is now lifelong, and increasingly it is mediated through technology used outside of school classrooms. Unless the current schooling model adapts so that it “draws on the strengths of in-school and out-of-school opportunities” (p. xxi), it will fail to prepare learners for their futures.

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\(^5\) https://www.engageny.org/
\(^6\) https://openupresources.org/
\(^7\) http://oasis.col.org/handle/11599/695
It can be argued that the cost of maintaining physical infrastructure and training new teachers, whose skills and time are not optimised, also indicates the need for different approaches to be considered.

Huitt and Monetti (2017) suggest the following useful comparison between open and more traditional approaches to education provision.

**Table 1: Analysis of traditional and open education**

<table>
<thead>
<tr>
<th></th>
<th>Traditional</th>
<th>Open</th>
</tr>
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<tbody>
<tr>
<td>Transparency</td>
<td>Opaque or hidden data and decision</td>
<td>Transparent data and decision</td>
</tr>
<tr>
<td></td>
<td>making processes</td>
<td>making processes</td>
</tr>
<tr>
<td>Purpose</td>
<td>Socialising for factory work</td>
<td>Socialising for global democracy</td>
</tr>
<tr>
<td>Focus</td>
<td>Curriculum-centred</td>
<td>Person-centred</td>
</tr>
<tr>
<td>Desired outcomes</td>
<td>Cognitive</td>
<td>Holistic</td>
</tr>
<tr>
<td>Assessment</td>
<td>Discrete cognitive knowledge</td>
<td>Authentic, holistic profile</td>
</tr>
<tr>
<td>Teaching processed</td>
<td>Standardised, directed learning</td>
<td>Varied, as appropriate, with more</td>
</tr>
<tr>
<td></td>
<td></td>
<td>self-regulated learning</td>
</tr>
<tr>
<td>Learning tasks</td>
<td>Curriculum-directed</td>
<td>Problem- and project-based</td>
</tr>
<tr>
<td>Resources</td>
<td>Private enterprise controlled</td>
<td>Free or inexpensive</td>
</tr>
<tr>
<td>Work environment</td>
<td>Compartmentalised</td>
<td>Connected</td>
</tr>
<tr>
<td>Organisational structure</td>
<td>Centralised</td>
<td>Decentralised</td>
</tr>
</tbody>
</table>

Source: (Huitt & Monetti, 2017, p. 45)

The argument made by Collins and Halverson (2018) as well as Huitt and Monetti (2017) is that the changing needs of a changing society indicate the traditional physical classroom and school model is no longer adequate to the task, even if all learners could be accommodated. There is a need to prepare learners in different ways to meet different and emerging demands. OER can also help in this regard:

> If we think of OER as just free digital stuff, as products, we can surely lower costs for students; we might even help them pass more courses because they will have free, portable, and permanent access to their learning materials. But we largely miss out on the opportunity to empower our students, to help them see content as something they can curate and create, and to help them see themselves as contributing members to the public marketplace of ideas. Essentially, this is a move from thinking about OER as open textbooks and thinking about them as opening textbooks . . . and all sorts of other educational materials and processes. When we think about OER as something we do rather than something we find/adopt/acquire, we begin to tap their full potential for learning. (DeRosa & Robison, 2017, p. 122)

Even if we as educators recognise the need to do different things in different ways, we still must address the challenge of student (and parent) prior experiences and expectations, and manage the transition (Murangi, 2017).
We also need to be sensitive to and manage cultural shifts equitably and ethically. In addition, we need to consider the challenges of updating OER content as curriculum needs change, especially if the initial investment in the development of OER was from an external funder (Geser et al., 2019). These issues are discussed in more detail in Chapter 3.

Of course, learning resources are only one aspect of curriculum provision.

**How Can the Curriculum Be Opened?**

As observed by Kaushal (2016), one strategy for getting out-of-school youths and adults back into the education and training system is through the “vocationalisation of education” (p. 16), equipping learners with the knowledge, skills and attitudes needed to successfully access the workplace and/or to become successful entrepreneurs. Also, provision needs to be as flexible as possible to cater for a wide variety of needs and contexts, including the ability to step out of a programme of study or to access additional support as needed (Komakech, 2017). However, there must be systemic support and collaboration to ensure quality and curricula that are responsive to changing workforce needs (Goel, 2017). If this can be managed successfully, there is some evidence that not only will successful learners find employment, but they may also continue with higher learning and continuous professional development (Jha et al., 2017).

Apart from possibly revisiting what we teach, we need to consider the possibilities opened by technology for how we teach and how we assess. Fullan and Langworthy (2014), for example, suggest the need to revisit institutional culture to emphasise learning from what we are doing, and making better use of data to inform decisions. They call for a greater focus on the learning outcomes being achieved, and the better use of data analytics to understand what is happening and to make the necessary interventions for improvement. They also argue for a focus on learning and how learning happens, assessment that supports better learning, integrated learning support, and sustainable business models. In this regard, we need no longer be constrained by the notion of a school year and the writing of national examinations only once per annum. It should be possible to design learning experiences that are engaging and informed by the latest understandings of how learning happens (NASEM, 2018), that can be completed one subject at a time with automated feedback (see Khan Academy, for example), that allow learners to gain widely recognised and portable credentials (Chakroun & Keevy, 2018), and that provide ongoing integrated and timely support to help turn access into success (Peters et al., 2017). It is surely past time to move beyond the Victorian industrial model of one-size-fits-all schooling and offer more flexible modes of provision in terms of what is taught, how it is taught and assessed, and how meaningful learning is supported both in and outside the school environment. Already there are many practical examples of what can and should be done differently (Ajuwon & Pimmer, 2019; Blumenstyk, 2019; ContactNorth, 2019; DeBarger, 2019; Liberman, 2019; Parenty, 2019).

The reasons children do not access or do not complete schooling are varied, and many of these reasons, unless specifically addressed, will continue to be barriers to re-engaging young people through open schooling. Therefore, a single uniform...
address will not be possible (Rajasekaran & Reyes, 2019; World Vision, 2019), and we need to be open to continual adaptation of our open schooling models. Curriculum issues are discussed in more detail in Chapter 2.

How Can Managers and Teachers Be More Open?

Daniel (2019), although speaking in the context of open university education, reminds us of the founding tenets of The Open University, in the UK (UKOU) and what this might mean for provision today:

• affordable for all students (open as to people — explored further in Chapters 1, 2, 6, 8 and 14);
• offered ubiquitously at scale (open as to places — explored further in Chapter 4 and Part B);
• well governed and managed (open as to methods — explored further in Chapters 5, 6, 7, 9 and 14); and
• effective at teaching (open as to ideas — explored further in Chapters 2, 3 and 4).

As Grimbaldi, Mallick, Waters and Baraniuk (2019) observe, education always happens in a context, and contextual factors may well negate or distort the apparent impact of different interventions and approaches. It has proven challenging to assure the quality of online and blended forms of provision at the schooling level, for example (Barbour et al., 2019), and we need to be cognisant of this when planning new and revised approaches to open schooling.

Nonetheless, as emerging research into online and blended learning indicates, we need to make decisions based on a holistic understanding of a number of domains, including historical perspectives, as well as developments in our understanding of who our learners are and how they learn, and based on the nature of teaching, the needs of different content domains, the role of learner support, the processes of instructional design, the needs of differing learning environments, and the possibilities for personalised learning and collaboration (Kennedy & Ferdig, 2018). These issues are explored in more detail in Chapters 4, 7 and 9.

All these separate initiatives are informed by a theory of change, whether or not one has been made explicit.

Towards a Theory of Change

A theory of change assumes a causal link between hoped for impacts from achieved outcomes, resulting from completed outputs that have been enabled through appropriate activities, made possible through the provision of appropriate inputs, as illustrated in Figure 2.
Figure 2: The results chain and causality

Figure 3 provides the conceptual framework for the theory of change currently employed in COL’s OIS portfolio, followed by a brief description of the model.

Figure 3: OIS theory of change

Brief description:

1. The number of out-of-school youths and adolescents is unacceptably high and even beginning to increase in some regions.

2. Youths and adults who have not completed schooling are often unable to access employment or other education and training opportunities and, having no stake in society and/or feeling marginalised by society, may be more easily radicalised or drawn to anti-social behaviour as the only means to survive.
3. In an increasingly global knowledge society, successful completion of schooling is a prerequisite for active and productive citizenship.

4. The present formal school systems can hardly cope with the number of learners presently in schools, let alone address the needs of out-of-school children, youths and adults.

5. OIS, as a model, can address the global challenge of out-of-school children, youths and adolescents by enabling more learners to complete schooling. [Outcome]

6. Four prerequisites for OIS to be successful are: well-trained teachers, quality learning resources, appropriate use of technology, and good management of open schools/support centres. [Outputs resulting from appropriate activities and inputs]

7. If open/innovative schools are performing well, the learners (both traditional full-time learners as well as those currently out of school) will improve their performance and acquire the necessary skills for sustainable livelihoods. [Outcomes]

8. Learners who are successful in completing schooling will either continue their studies at a post-school level, be employed or be self-employed. [Outcomes]

9. This will lead to decreased unemployment, as well as economic growth, and ultimately societies that are more politically and socially stable. [Impact]

10. In such societies, there will be an increased interest in schooling from marginalised groups or from those who have not completed their schooling. The community will not only be more empowered but will also play an instrumental role in supporting those who want to continue their studies. [Impact]

11. This is a cycle of continuous improvement, where each cycle will lead to a higher level of societal development. [Impact]

12. The core impact is sustainable development through learning. [Impact]

The theory of change outlined above then informs the nature of the OIS model.

Open/Innovative Schooling (OIS) Model

Recognising the importance of partnerships in meeting the need for a dramatic and systemic expansion in access to all levels of schooling, COL actively engages with ministries and other stakeholders. COL builds partnerships to support ministries with the improvement of their education systems and the development of open schooling as a means of providing quality educational opportunities for all.

The purpose of the OIS model is:

To support ministries with the provision of accessible and flexible quality eLearning through both open and mainstream schooling.

The outputs of the model are:

• broader access to flexible teaching and learning opportunities for out-of-school youths
• improved quality of learning resources
• teachers trained in TEL
• strengthened TEL in open and mainstream schools
• improved teaching, learning and support
• decreased dropout rates
• improved academic performance by learners

The model consists of four phases, each with its specific focus, as illustrated in Figure 4. The ownership of the model lies with ministries of education. The model starts with Phase 1 as the development phase, where the ministries identify the school subjects to be re-versioned, identify the teachers who will be trained to do the content development, and appoint a service provider to develop a country-specific learning management system (LMS) for the ministry. In Phase 2, the ministries identify the pilot schools for the implementation of the eLearning schools supported by Aptus technology. In Phase 3, the ministries progressively implement and expand on what was learned in Phase 2, up to a point in Phase 4 where the model has been implemented systematically. In Phase 4, the resources developed in Phase 1 and subsequently modified and augmented are available for use by anybody, including teachers and learners engaged in traditional contact schooling.

The model also indicates the role of COL and the service provider in each phase. COL has a specific supportive role in Phases 1 and 2, and an exit point during Phase 3.

The role of the service provider, appointed by the ministry, also declines towards Phase 3. It is for the ministry to decide how they use the service provider throughout the project. However, for maximum impact, it should be possible to access and modify subject-specific OER not only between schools in the same country but also between countries where similar outcomes and topics need to be addressed.

Figure 4: Phases in the OIS model

COL’s Aptus device enables the creation of a local Wi-Fi hotspot, allowing teachers and learners to engage with digital content on their own mobile devices even where Internet connectivity is not available.
The approach with the model is to start small and scale the project up to system-wide implementation. The driver of the model is the OIS theory of change, with its four pillars for change: teacher training, content development, use of appropriate technologies, and management development.

There will be variations in the model to suit the needs of different countries. Initially, for example, it may be decided that teachers will work only with out-of-school youths, not mainstream full-time learners, and will have read-only access to the OER developed, and so will not be expected to adapt, source or create new resources. In this scenario, the focus in the short term can only be on pedagogy. Teachers will need an orientation to resource-based forms of teaching and learning, which will entail a shift from teacher-centred classroom pedagogy to learner-centred and resource-based pedagogy.

In the longer term, it is to be hoped that if a resource-based form of teaching can demonstrate learning gains, including improved retention and pass rates among out-of-school youths, the lessons and practices can then be integrated into mainstream teaching.

A key lesson from experience elsewhere is to ensure that the curriculum mapping exercise identifies key conceptual difficulties and focuses on these for the sourcing and developing of digital resources as OER. These key concepts are likely to be similar over time, regardless of curriculum innovations.

**Implications for Future (OIS through ODL) Provision**

As the Commonwealth of Learning observes on its website,\(^{10}\) mainstream schools, especially in developing countries, cannot constructively address the current crisis in schooling, as they can hardly cope with the present numbers of learners in schools. These countries are faced with other challenges, such as shortages of well-qualified teachers and quality learning resources, and a lack of classrooms and other infrastructure. To ensure that developing countries achieve Sustainable Development Goal 4 (SDG 4), which aspires to ensure inclusive and equitable quality education and lifelong learning for all by 2030, a new way of thinking about schooling is required.

As stated previously, open schooling can be a supplementary or a complementary model of schooling that uses a range of flexible approaches, based on open and distance learning, to provide structured teaching and learning opportunities. It has emerged as a viable alternative to supplement and complement primary and secondary education and can be provided by standalone, independent distance education institutions, be managed as part of the education ministry within a specific directorate, or even be part of a university. An open schooling model can address the challenges of out-of-school children and youths without having a disruptive effect on mainstream schooling. Both systems can work symbiotically and can benefit from each other. There is no one perfect model for open schooling; individual countries will need to tailor the model to match their priorities.

Regardless of the specifics of the model chosen, addressing the challenge of out-of-school children and youths requires a multidimensional approach. COL has

\(^{10}\)https://www.col.org/programmes/open-schooling
been promoting open schooling across the Commonwealth for many years. The current approach to open schooling at COL is holistic and focuses on training teachers in eLearning, using OER, improving the management of open schools and supporting the use of appropriate technologies in teaching and learning. This involves integrating the open schooling approach into mainstream schools to enable many out-of-school youths to access formal education while also seeking to reduce attrition among full-time learners.

As an alternative form of provision, open schools can reach new markets through an expanded curriculum. They can provide a different, more adult-relevant learning experience for older students who never had a chance to attend school or to complete their formal education, or a more vocational-oriented programme for out-of-school youths. As a complementary system, open schools offer the same curriculum for children and youths who, for a variety of reasons, have not been a part of the formal, classroom-based school system. Open schooling has no age restriction and can diversify its curriculum to respond to the needs of its target group. For out-of-school youths, open schooling can be an equaliser for educational opportunities.

Technology-enabled learning has had a positive impact not only on conventional schools but also on open schooling. Technology provides more opportunities than ever before to widen access to teaching and learning, especially for those who are out of school, as is explored in Chapter 4.

Open schooling is not just for developing contexts and is not a second-rate type of schooling. It can also be found in developed contexts such as Canada, where the first correspondence education started in 1919 in British Columbia and subsequently developed into a comprehensive distance education school system. Open schooling expanded and developed in Canada because learners had the choice to study anytime, anywhere and in a more flexible schooling environment, and they enrolled in numbers because the greater openness and flexibility was a good fit with their learning needs.

Perhaps the most significant shift in open schooling in recent years was inspired by the OER movement, which promised to address some of the most difficult educational challenges. To tackle the issue of access to quality education, COL introduced OER to open schools in 2009 via the collaborative development of course materials in 20 subjects across six countries. Being openly licensed, the resources may also be used in the conventional school system and by people outside of the original six countries. This issue is explored in more detail in Chapter 3.

So when COL talks about an open/innovative schooling model, it is not promoting a single possibility but rather an approach that opens access with a reasonable chance of success to school-level learning opportunities. An eclectic combination of open, distance and eLearning (ODeL) approaches and methods, OER and collaboration using open educational practices (OEP) informs the model. These issues are explored in some detail in Chapter 7.

In 2017 and 2018, the ministries of education in Belize, Malawi, Mozambique, Vanuatu, Trinidad and Tobago, and Zambia signed agreements to integrate OIS in their education systems, and in 2019, these countries were joined by partners in Nigeria and Guyana. The OIS initiative has also been working with partners
to follow up on the outcomes of COL-supported programmes through research studies, and to promote peer auditing for quality assurance (see, for example, Mays, 2020). Another important activity is the strengthening of COMOSA through increased member engagement and social media presence.

**Conclusion**

Open schooling has proven potential to address the crisis of out-of-school children, as well as youths and adults with insufficient schooling to progress, both by providing support to lower attrition rates in traditional schooling and by offering a means to get out-of-school learners back into schooling. However, it requires ministries, schools and other stakeholders to think beyond the confines of school years, prescribed textbooks and the limitations of physical infrastructure. The chapters that follow in this publication provide insights into what is possible.

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**Suggested Further Reading**

Several useful publications and reports on open schooling can be accessed from the website of the Commonwealth Open Schooling Association, COMOSA Connect. 11

It may also be useful to subscribe to relevant newsfeeds, such as those from the Global Partnership for Education 12 and Digital Promise. 13

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Abstract: Schooling through open, distance and technology-based education has come to the forefront in many developing countries in the world, due to the increasing number of challenges being faced by these countries, primarily in terms of infrastructure, teacher supply and technology. There are also issues concerning relevance of the curriculum that need to be addressed to provide quality education to students (with an increasing expectation that the school curriculum should help learners to develop 21st-century skills, among other things). Accordingly, there is a need to plan, develop and implement an open school curriculum that makes the learning relevant to the context, leads to learning achievements that can be formally recognised, and is interesting enough to foster and retain engagement. This chapter reflects that a relevant and effective curriculum for a distance learner, particularly in open schooling, should be aimed at providing not only a totality of experiences to attain general skills and knowledge at various learning sites, but also learning that is useful and in tune with the contemporary world. The chapter explores how self-learning can be seamless, relevant and interesting in isolation and even under the most trying circumstances. Further, the chapter attempts to address how the curriculum should be transacted to deal with the changing learning styles of present-day learners. The present and future assessment practices catering to the demands of open schooling institutions are also discussed. Some of the practices related to the curriculum development processes followed by the National Institute of Open Schooling (NIOS) in India are also selected as examples for those engaged at the levels of research, policy and practice in the area of curriculum development in other open schooling institutions.
Introduction

Learning is synonymous with human existence and has led to social evolution since time immemorial. In the course of time, a formal regular system evolved to impart all the basic knowledge required by an individual to contribute to society to the best of their abilities. The structure of education systems also absorbed, assimilated and conformed to the changing needs of society, its demands and its priorities. However, the transition rates from elementary to secondary levels are critically and abysmally low in many developing contexts, as the number of secondary schools is insufficient to cater to the larger needs of the population, keeping in mind the limitations of accessibility and adaptability of the diverse learner groups. Therefore, schooling through open, distance and technology-based education has come to the forefront in many developing countries.

An open school provides a platform that strengthens every mind to get into a continuous process of learning while neutralising the myriad obstacles that one would likely have faced in the normal course of learning. Physical, mental and social shortcomings do not hinder the learning process, and openness and flexibility allow the learner to learn within their comfort zone, and apply their areas of strength to reach their learning goals. As we enter the third decade of the 21st century, where the everyday life of each individual is impacted by technology and dilemmas between tradition and modernity, it could be beneficial to reflect on some important curriculum questions that open schools in the 21st century must address:

1. Are we developing a more relevant and effective curriculum for open school learners that is different from a formal classroom environment and yet has the power to make a difference?

2. Are we really addressing the issues about how curriculum is being transacted to deal with the changing learning styles of present-day learners?

3. Are the assessment tools able to evaluate learning against criteria such as standards, objectives and competencies?

This chapter attempts to address these concerns and challenges by looking at the present and future scope of open schooling institutions. Before reflecting upon the curriculum issues, an attempt is made to understand the profile of open school learners and the need for curriculum changes. In the following sections, the chapter examines the problems of curriculum, instruction and assessment practices.

Profiling Learners (Reasons to Opt for ODL)

The sort of congenial environment required for effective teaching–learning processes and the achievement of desired outcomes is not available to a major section of the population in countries affected by war and conflict or disasters and emergencies, as reported by UNESCO. As noted in Chapter 1, UNESCO reported that about 263 million young people were out of school in 2014 and observed that recent years had shown no improvement in reducing the rates of out-of-school children (UNESCO, 2016). In some countries, in fact, numbers seemed to have begun to rise. By 2018, UNICEF was reporting that more than 300 million children between the ages of five and 17 were out of school.
Lack of schooling at an early age has a major impact, creating a regressive environment that leads to a huge dropout rate at primary levels. In countries such as India and other developing nations, the dire socio-economic conditions of many families force children to flee their homes in search of basic needs, and they end up in conditions that preclude any attempts at education. Even if such children are forced into a system, either they give up or they complete school without being well trained to cope in rapidly changing environments.

In a report dated 18 March 2020, UNESCO stated that over 850 million children and youths — roughly half of the world’s student population — had to stay away from schools and universities due to the COVID-19 pandemic. Nationwide closures were in force in 102 countries and local shutdowns in 11 others at the time of writing this chapter. Such numbers represent more than a doubling in the number of learners prevented from attending educational institutions, with further increases expected.

The scale and speed of the school and university closures represented an unprecedented challenge for the education sector. Countries around the world raced to fill the void with distance learning solutions, but the uncertain duration of the closures added further complication to their efforts.

Interventions ranged from hi-tech alternatives such as real-time video classes conducted remotely, to lower-tech options such as educational programming on radio and television.

Open Schooling Curriculum: How Different and How Effective?

Recently, the World Bank reported on the challenges involved in getting out-of-school children back into the system (Rajasekaran & Reyes, 2019). Open schooling may be one way to address the challenge. However, there is a need to plan, develop and implement curricula that make the learning both relevant and interesting to learners. Curricula should connect and cater to societal needs, enabling learners to hone their skills and be able to contribute to the best of their abilities to their society, and in the bargain also be able to carve their own identity and place — culminating in a sense of contentment, both financially and socially. Openness in subjects and courses should be the foundation of curriculum planning, including affordability, flexibility and accessibility so that those from disadvantaged sectors are not left out or left behind (Melton, 2002). Since this mode of learning separates learners from teaching institutions and deprives them of regular contact with their peers, alternative strategies need to be found to provide access and to support engagement and success (Peters et al., 2017)

Academic demands, coupled with the isolation and anxiety experienced by distance learners, may easily contribute to confusion, loneliness, stress and sometimes attrition (Nonyongo & Ngengebule, 1998, p. 11). It is, therefore, imperative that distance learners be provided with relevant and adequate learner support to enable them to cope with the challenges of isolation and infrequent contact with their learning facilitators and fellow students. So a relevant and effective curriculum for a distance learner, particularly in open schooling, must be aimed at providing a totality of experiences to attain general skills and knowledge at various learning sites as well as learning that is useful for contemporary living.
It should also demonstrate how self-learning can be smooth and interesting in isolation and in the most difficult circumstances. It helps if the learning can be broken down into small, manageable steps (Jenkins & Walker, 1994).

**Open Schooling Curriculum: Structure and Organisation**

A quality curriculum, mediated in a fair and inclusive manner, should support learners in their acquisition and development of the knowledge, skills, attitudes, values and associated competencies to lead meaningful and productive lives. Therefore, curriculum success is dependent not only upon the quality of the learning achieved by learners but also upon how effectively students utilise this learning for their personal, social, physical, cognitive, moral, psychological and emotional development. A quality curriculum has greater potential to maximise the possibility for effectively enhancing learning.

Ralph Tyler’s (1949) curriculum development model has been widely followed. The following four questions identified by Ralph Tyler need to be addressed to provide a base for developing curriculum.

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that will likely attain these purposes?
3. How can these educational experiences be effectively organised?
4. How can we determine whether the purposes are being attained?

Based on this model, the structure and organisation of an open schooling curriculum can be discussed in a four-step process as illustrated in Figure 5.

![Figure 5: Curriculum design cycle](image)

This chapter also highlights that a curriculum must have clear aims, be kept up-to-date and be relevant to learners’ current and future lives, experiences, environments and aspirations. Whether the curriculum is equitable and inclusive, learner centred and learner friendly, and open and flexible also need to be discussed. These considerations are included within the four broad areas stated above.

Good curriculum development processes must be followed to develop a quality curriculum. These processes should be:
Curriculum development processes should be planned and systematic. Open schooling institutions should focus on providing proactive leadership, adequate resources, and academic expertise to ensure that the curricula in every subject are regularly evaluated and improved. There must be both short-term and long-term planning for curriculum development, which includes financial resources, human resources and academic planning. Another frequently used model involves the interrelated steps of analysis, design, development, implementation and ongoing evaluation (ADDIE, as reformulated by Tijs & Van Den Akker, 2009).

In the NIOS framework for curriculum development, a needs analysis forms the foundation for developing the curriculum in a particular subject. An in-depth analysis is conducted to understand how the course is going to benefit the learner, and what kind of content fits the course. Suggestions are also taken from the academic council and curriculum committee, consisting of eminent experts whose insights are incorporated into the curriculum of a subject.

Good-quality curriculum development is a continuous process because curricula must be constantly responsive to socio-economic changes. In a changing world order, where knowledge is rapidly expanding, various communication technologies are changing rapidly, and there are changes in demand for the skills to be acquired by students. Good curricula need to be in tandem with these changes. Every open schooling institution needs to view curriculum development as a continuous process of updating and improving. Introducing a new curriculum every two to three years is not advisable, but the institution must devise a plan for curriculum renewal. NIOS has a policy of developing a new curriculum every five years.

Curriculum development is a specialised activity in the sphere of education, so curriculum development processes should ideally be led and managed by qualified and experienced professionals. Therefore, in addition to subject experts from open schooling institutions, and an internal curriculum committee or course development committee, subject experts well-versed with the content, from other school-level institutions and higher educational institutions should also be included. Further, curriculum specialists in higher education institutions are involved to ensure that the curriculum development process considers research and trends, both nationally and internationally, in the various realms of education.

Capacity development for subject experts who are responsible for curriculum development must be offered to ensure that they are well equipped with the technical and curriculum development skills, knowledge and experience to undertake the task. Sometimes, these experts are drawn from a formal school background, so an orientation to teaching and learning processes in open distance learning (ODL), particularly open schooling, should be provided.
Selecting learning objectives

The open school as an agency needs to provide the knowledge, skills, attitudes and values that will help people to deal effectively with contemporary problems. There are basic values in human life, as educational philosophers have recognised, and thus, the objectives of the curriculum must be derived from educational philosophy. In addition, studies of contemporary life also form the basis for learning objectives. The learning objectives in terms of knowledge, communication skills, social and ethical perspectives, quantitative and analytical skills, and a cognitive taxonomy (e.g., Bloom’s) should form the basis for developing content, probably organised around collaboratively agreed key concepts (Erickson, 2007). Tyler proposes that educational objectives be derived from three sources: studies of society, studies of learners, and subject-matter specialists. The objectives should be systematically collected and analysed and should form the basis of initial goals to be tested for their attainability and their effects in real curriculum situations. The tentative objectives from these three sources, further refined through two criteria — the school’s educational philosophy, and knowledge about the psychology of learning — then form the final set of educational objectives.

It must be emphasised that in the selection of learning objectives, the curriculum needs to address the concerns of the country’s regional community as well as the global community. It should help learners understand the issues and challenges of their own country in context, to appreciate the importance of peaceful coexistence, to realise their responsibilities as global citizens and to commit to sustainable development. Because profound political, cultural, social and economic concerns must be transacted, a curriculum needs a very careful and systematic approach. It is imperative that curricula cater to particular purposes and values and serve the interests of learners and other relevant stakeholders. Therefore, it is always important to refer to a country’s education policy and national curriculum framework, in addition to the curricula of other educational boards within the country.

The main objective of curriculum planning should be to plan the system so that it caters to all the cognitive and multidimensional growth needs of learners. The intention is that the quality of the learning experience will make it a first-choice option rather than a second-best one.

Selecting learning experiences

Once educational objectives are defined, steps are taken to select and organise learning experiences as the means for achieving learning outcomes. Tyler recognises several interrelated principles in determining learning experiences:

- Learners’ experiences must be appropriate to the goals the proposed educational content intends to achieve.
- Learning experiences must satisfy the learners’ needs.
- Each learning experience should involve learners.
- In one learning experience, learners can meet different objectives.
Tyler remarks that the most challenging task in setting up learning experiences is to develop interesting types of activities, even for content that a student may find distasteful. He emphasises that “students learn through exploration.” So in an open schooling curriculum, attempts must be made to incorporate engaging activities, and learners must be given enough scope for exploration.

Each learning experience must have the following attributes:

• addresses equality, diversity and inclusion
• supports learning differentiation
• prepares learners to acquire broad competencies or general capabilities
• encourages continued/additional learning
• provides personalised learning environments to maximise learning opportunities

A good-quality curriculum must ensure that the selected learning experiences value the uniqueness of each learner and must commit to the principles of equality and equity. While learners are diverse, particularly in open schooling systems — having, for example, different interests, aspirations, cultures, histories, language patterns and preferred ways of learning — the curricula must focus on providing multifarious opportunities to enable all learners to reach their potential.

A good-quality curriculum must be inclusive, and it should attempt to help all learners, regardless of gender, disability, socio-economic circumstances or geographical location, to achieve their individual potential as learners, and to develop their capabilities in the best possible manner. There should be adequate provisions in the curriculum to encourage and support each learner’s potential while respecting and accommodating the differences in the ways children prefer to learn. There must be varied content, such as case studies, illustrations and role playing, that are gender sensitive, are accessible for differently abled learners and cater to the proper representation of marginalised groups. In NIOS, learning support in terms of Indian Sign Language content is provided to Deaf and Hard-of-hearing learners, and talking books are provided to persons with low vision and blindness. So curriculum design and development must also consider the use of appropriate assistive technology, as illustrated in Figure 6.
### Activity | Issue | Assistive Technology Examples
---|---|---
Computer Access | When a student cannot access a computer with a standard keyboard and a mouse, he may need special input devices. These devices are commonly used by students with physical, visual or cognitive disabilities. | Software: OS accessibility features, word prediction, keystroke reduction, voice recognition, on-screen keyboard  
Hardware: Keypad, arm support, trackball, trackpad, joystick, alternative keyboard, switch with Morse code, switch with scanning |
Communication | For many autistic people and some with learning disabilities, augmentative & alternative communication devices may be helpful. They use symbols, pictures and printed words. | Software: Symbol browser, art activities, games on the computer  
Hardware: Voice output devices or devices with speech synthesis for typing |
Reading | The low resolution of monitors can cause fatigue and eye strain for all users. For those with vision or learning issues, reading on-screen can be an added deterrent. Keeping track, following a line of text, understanding and remembering can be problematic. | Software: Talking electronic device/software to “pronounce” challenging words, electronic books, mindmapping, talking calculator, voice recognition  
Hardware: Single word scanners, scanner with OCR and talking word processor, hand-held scanners, hand-held computers |
Writing | There are two different accessibility issues when using computers for writing: 1) physical problems with typing; and 2) cognitive problems with composing and organizing ideas and converting them into written expression. | Software: Templates, word processors, voice recognition, talking dictionary, spelling & grammar checker, multimedia software for expression of ideas  
Hardware: Alternative keyboards and input devices used as for Computer Access (above) |
Learning | Students with learning difficulties may have problems with attention and with organizing ideas. | Software: Multimedia software for expression of ideas, mindmapping, electronic organizers  
Hardware: Hand-held computers |
Hearing & Vision | Assistive technologies for visually and hearing impaired students may either increase the signal or replace it with something else. | Software: Screen magnifier, screen color contrast, screen reader, captioning, computer-aided note taking  
Hardware: Braille/tactile labels, alternative keyboard with enlarged keys, Braille keyboard and note taker, signaling device, phone amplifier, personal amplification system/hearing aid, FM or loop system |

**Figure 6: Assistive technologies** (Boskic et al., 2008, p. 158)

A good-quality curriculum supports learning differentiation. In every educational system, whether it uses a traditional or an ODL mode, the students learn in different ways, with their own unique learning styles and strategies. Some learners may be effective and skilled listeners, others need visual stimulation, and some actively learn through practical exercises. The curriculum must be flexible to ensure that treatment of the content is appropriate to learners’ needs and capabilities, and that it assists learners with achieving their optimum learning outcomes. During curriculum development, there must be an emphasis on designing lectures, discussions, group work and individual activities with the support of ICT, the objective being to provide a vibrant learning platform, possibly replicating a formal classroom situation but preferably improving upon it.
2 illustrates some of the kinds of activities that curriculum developers must consider to create an equivalent (or better) learning experience using appropriate technology in appropriate ways based on the content and available resources.

**Table 2: Variety of equivalent activities**

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Discussion</th>
<th>Group Work</th>
<th>Self-Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class lecture</td>
<td>Free group discussion</td>
<td>Horseshoe groups</td>
<td>Play</td>
</tr>
<tr>
<td>Speech</td>
<td>Controlled class discussion</td>
<td>Round-table groups</td>
<td>Project work</td>
</tr>
<tr>
<td>Paper</td>
<td>Forum</td>
<td>Syndicates</td>
<td>Activity cards</td>
</tr>
<tr>
<td>Story</td>
<td></td>
<td>Buzz groups</td>
<td>Learning contracts</td>
</tr>
<tr>
<td>Demonstration</td>
<td></td>
<td>Brainstorming</td>
<td>Self-study models</td>
</tr>
<tr>
<td>Symposium</td>
<td></td>
<td>Nominal group method</td>
<td>Programmed learning</td>
</tr>
<tr>
<td>Panel</td>
<td></td>
<td>Fishbowl</td>
<td>Teaching machines</td>
</tr>
</tbody>
</table>

In distance education, we might design activities that guide students towards engaging with print, audio, video or multimedia resources.

In distance education, we might use contact sessions, audio- or video-conferencing or online forums to facilitate this kind of interaction.

In distance education, we might build group work into contact sessions or by using various kinds of online tools such as wikis to enable more collaborative learning.

In distance education, we need to think carefully about how we scaffold activities and feedback to support different kinds of independent study.

**Experiential learning**

- Simulation
- Dramatisation
- Role play
- Socio-drama

- Case studies
- Advanced learning programme
- Laboratory learning
- Sensitivity training

In distance education, we need to think about how we might use ICT to support these kinds of learning experiences — for example, simulations, virtual reality, gaming, etc.

Source: CHE (2014, pp. 50–51)

Unlike traditional curricula, which emphasise knowledge and information, there is a need to prepare contemporary learners for the acquisition of broad competencies or general capabilities. As the present world order is constantly changing and facing new challenges, people must acquire and apply new knowledge and understanding to adapt to new ways of doing things. Teachers thus need to make informed pedagogical choices to use appropriate strategies for appropriate learning purposes (Millwood, 2013, 2018). Therefore, it is highly desirable that curricula across all subjects and learning areas aim to develop core student competencies in areas such as those summarised in Table 3.

**Table 3: Core curriculum competencies**

<table>
<thead>
<tr>
<th>Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaboration</td>
</tr>
<tr>
<td>Critical thinking</td>
</tr>
<tr>
<td>Problem solving</td>
</tr>
<tr>
<td>Creativity</td>
</tr>
<tr>
<td>Management and appreciation of diversity</td>
</tr>
</tbody>
</table>
Competencies or capabilities are sometimes referred to as skills or abilities, or more broadly described as attributes or characteristics. These core competencies need to be integrated into the curriculum, and proper planning should be done to select learning activities and content that help learners with developing these skills and applying them to situations they encounter in everyday life.

A curriculum should encourage learners to acquire learning skills, as the scope of knowledge in every subject domain will expand. Apart from possessing skills for learning, they should have awareness about the reliability of different sources of information. The curriculum should provide the scope to develop and acquire research skills, such as analysis, synthesis and evaluation, and the impetus for lifelong learning. Wherever possible, the curriculum should ensure that learners look for contexts and examples from their surroundings to make learning still more relevant and meaningful. For example, in NIOS, learners who opt to study sociology are asked to undertake field visits and research in the form of project work on social issues such as dropouts or the working conditions of women in their surroundings, to better understand these concepts.

A good curriculum, particularly in an open schooling system, should emphasise providing personalised learning environments (PLEs) for learners, as these increase learners’ motivation and allow them to actively design their own learning strategies. Learning situations need to be created in such a way that learners’ autonomy is ensured, and maximum scope is provided to control their own learning at their own pace. As Bates (2018) points out, in addition to addressing either the physical infrastructure or the various accessible technologies used to create online PLEs, there should also be significant attention to:

- the learners’ characteristics;
- the teaching and learning goals;
- the activities that will best support learning;
- the assessment strategies that will best measure and drive learning; and
- the culture that infuses the learning environment.

While it is challenging to encourage learners’ active participation in the ODL mode, the curriculum should attempt to use activities, role play and other exercises so that learners contribute in group work and participate in project-based and experiential learning. Learners need suitable platforms to prepare learning portfolios and other demonstrations during the learning process. A guiding note in the form of video/text for both tutors/facilitators and learners may also contribute to active participation.

The curriculum should enable learners to develop capabilities, not only by promoting higher-order thinking but also by encouraging learners to develop curiosity, critical questioning, and imagination. Appropriate methods and strategies need to be adopted to create relevant learning experiences. While face-to-face student–teacher interaction is often regarded as necessary to develop many of the higher-order learning outcomes, such as analysis, synthesis and critical thinking, open schooling systems can overcome this barrier using various effective alternative mechanisms, such as project work, assignments and social networks. A clear link between intended learning outcomes and selected
learning activities contributes to cognitive presence (Akyzol & Garrison, 2011), encouraging deep learning in a community of inquiry (Garrison, 2014).

Curriculum development can be conceived of as a cyclic process of development, implementation, evaluation and revision. As discussed above, curriculum changes should be responsive to the changes occurring in societies, economies and cultures, and thus, curriculum development should be a continuous process of monitoring, evaluation and updating.

Organising learning experiences

Tyler states that the organisation of learning experiences is an important component in the curriculum development process because it greatly impacts the efficiency of instruction and the expected educational changes that are brought about in learners. Three major criteria are followed in organising learning experiences: continuity, sequence and integration.

The principle of continuity implies that the learning experience should maintain continuity and flow to advance knowledge acquisition. Similarly, the principle of content sequence should be followed so that learning experiences are appropriate to the student’s age and level of development, and so there is no overlapping of content between two different grades. In organising learning experiences, the principle of integration should define the scope of the curriculum. A learning experience is provided in such a manner that the student can apply a learning experience acquired in one sector to other sectors — for example, a learning experience in mathematics must also be applicable to learning in physics.

In addition to the above, there should be balance in the curriculum to ensure that learners have access to appropriate time allocations as well as content. The principle of balance in curriculum indicates there should be appropriate emphasis on:

- each of the subject or thematic areas in terms of time allocation and marks/credit for assessment purposes;
- the unique nature of content, such as in the natural sciences, social sciences, language sciences, and arts, as well as emerging content areas such as information technology, media literacy and virtual reality; and
- the incorporation of content–knowledge, skills, values and higher-order learning outcomes to develop the desired level of competency.

At NIOS, structuring and organising these learning experiences involves selecting proper learning experiences according to specific learning outcomes and grouping them under subject headings — math, science, history, accountancy, etc. — keeping in view the varied needs of learners. Learning experiences are placed in the curriculum with the involvement of a diverse team of experts in the field, and all elements of the curriculum relate to each other in a sequential manner. Integration and correlation through concept mapping help to organise learning experiences effectively. This involves preparing a flow chart to give learners a clear picture of the chronology of the teaching–learning material.

Using varied examples, activities, case studies, graphics, animation, etc. helps learners explore and express their experiences to better understand concepts and cultivate the right attitudes, skills and habits. Such learning experiences also introduce learners to hidden benefits, such developing an appreciation
and respect for their surroundings, and the ability to express their feelings and thoughts. This introduces them to higher-order learning and behaviours. Such an approach enhances learners’ engagement in the learning process and helps them retain what they learn.

Choosing various tools such as ICT, interactive textbooks, audio-video tapes, educational television, MOOCs, and so forth helps learners access courses through multiple delivery channels. The choice of media depends on the nature of the content. For example, the lifecycle of a butterfly may be illustrated using a video, while an audio file may be used to deliver a poem or an autobiographical excerpt. Tasks such as grading, record keeping, developing curricula and coordinating educational programmes are facilitated through the use of ICT.

Staff meetings and internal seminars are utilised to train teachers and enable them to share innovative practices with each other. An annual calendar of activities is prepared in consultation with the faculty. Due care is taken that there is proper division of work amongst faculty and that the available resources are mobilised effectively for learners’ benefit. Besides facilitating collaborations to utilise the community’s resources, the Academic Head provides faculty with ongoing guidance to improve the teaching–learning process and encourages the use of helpful teaching aids and equipment to organise proper learning experiences.

The key curriculum components are then as follows:

- **Content**
  - Content goals
  - Sources
  - Structure
  - Quantity / depth
  - Activities
- **Skills**
  - Thinking activities
  - Discussion
  - Skills goals
  - Practical activities
- **Learner support**
  - Counselling
  - Scaffolding
  - Feedback
  - Other students
- **Resources**
  - My time
  - Assistants
  - Facilities
  - Technology
- **Assessment**
  - Essays
  - Tests
  - e-Portfolios
  - Projects

All informed by:

- **Learner characteristics**
  - Learning contexts
  - Diversity
  - Digital natives?
  - Prior knowledge
  - Learners’ goals
Evaluation and Assessment of Learning Experiences

There are two aspects to evaluation: it should assess whether a learner’s behaviour has changed in accordance with the education goals outlined in the curriculum, and it ideally should use more than one assessment tool to assess the level of learning.

The aim of evaluation is to determine the success of curriculum through its programmes and transaction methodologies. All evaluation techniques should focus on highlighting the individual’s strengths and thus must be sensitive to understanding the inherent uniqueness of each learner being assessed. This requires receiving feedback from the learners themselves (Chen et al., 2016) while also evaluating wider systemic issues (CHE, 2014).

In NIOS, we monitor learners’ performance against targets or objectives. The use of tutor-marked assignments, practical tests and term-end examinations helps inform the next steps in teaching and learning. Learners take some control of their own learning and assessment, which turns assessment into a learning event. There are multiple modes of collecting feedback from learners, such as the Mukta Vidya Vani interactive radio programme, live programmes on Swayam Prabha TV (which can be watched on a mobile device), the SWAYAM MOOC platform, and feedback forms in self-learning materials. Feedback received from learners is incorporated into the study material and used to improve delivery mechanisms from time to time.

Some Guidelines on Perceived Curriculum Changes in Open Schools of the 21st Century

What we have discussed so far are the basic principles that need to be considered for developing the curriculum in an open schooling institution. Curriculum development processes involve a variety of stakeholders, including learners, subject experts and curriculum specialists, and respond to a wide range of societal requirements and national goals. Further, curriculum development processes should be informed by educational philosophy and disciplinary boundaries. However, given how rapidly societies are changing, the curriculum also needs to be modified accordingly to meet individual learning requirements, both for their productivity and performance in the labour market and for their social and individual performance as citizens (Amadio et al., 2014, 2015). The following considers some of the future challenges for designing and developing curricula in open schooling institutions, looking at perceived changes in social and economic structures around the world.

What needs to change in terms of what is taught?

The development of a nation requires that educational systems gear up to train young people in new skills and competencies, which help them take advantage of emerging new forms of economic activity at the global level and thus meaningfully and effectively contribute to social and economic development. These attributes, which are aligned to the changing nature of work in a global knowledge economy, are often referred to as 21st-century skills and competencies that suit a post-industrial mode of production (Ananiadou & Claro, 2009).
skills that learners need to develop are approached through the basic ideas of subjects such as mathematics, which aim to foster abstract thinking and logical reasoning, while languages aim to develop human behaviour and expression by enhancing communication skills. Sciences are taught to develop observation and experimentation skills and to establish facts. Social sciences are basically aimed at improving understandings of social structures, enhancing the physical contexts in which social interactions happen, and learning from past conflicts to achieve social growth.

These subjects will always be at the core of curricula and should be informed by the changing needs of the 21st century so that learners are able to think effectively and bring all their other skills to accomplish their desired goals in whatever areas interest them. We require a curriculum that addresses these needs more directly without burdening the learner with a massive amount of information that is no longer relevant.

According to Marc Prensky (2014), the four main categories to be incorporated in a curriculum are effective thinking, effective action, effective relationships and effective accomplishments.

Along with these, other skills/behaviours such as ethics, cultural endeavours, social responsibility, and employment preparation also need to be incorporated. The 21st-century skills of communication, collaboration, creativity and critical thinking — “the 4Cs” — also need to be given the attention they deserve when curricula are being designed. Entrepreneurship, problem solving and self-direction are also skills people require to thrive in emerging work and educational environments.

Many skills are currently underrated, depriving society of creative outputs such as the arts, and of human skills that build character. The ultimate object of any curriculum must be to raise and nurture citizens who are fair, capable and flexible and who can enhance their abilities to reach their goals. Education should be about each person becoming able to think effectively, act responsibly, relate wisely and succeed to the best of their abilities, regardless of their location or field of interest.

Whether directly or indirectly, teaching has profoundly impacted human life, and people now practise new forms of socialisation and social networking. Thus, curricula should provide individuals with enough capacity in social values and attitudes, as well as with constructive experiences that will help them benefit from these opportunities and contribute effectively to these new facets of social life.

Young people also must be equipped with skills and competencies related to knowledge management, as required in knowledge economies. These include processes related to information selection, acquisition, integration, analysis and sharing in socially networked environments. These skills are supported by information and communication technology (Ananiadou & Claro, 2009). According to Peters (2010), a “paradigm shift” in education would mean that certain models or patterns no longer exist, as they have been replaced by new, significantly different models and patterns. He is also of the view that distance education will have to re-orient itself and develop new instructional structures. The ODL system, especially in the last two decades, has seen a paradigm shift.
that highlights open and distance education as a fertile land for innovation, experimentation and creativity, which are all 21st-century skills.

A curriculum should contain mechanisms for learning these skills and competencies. Accordingly, framing a curriculum should include efforts to properly identify and conceptualise the necessary sets of skills and competencies, so these are incorporated into the educational standards that every learner should be able to achieve by the end of their course. The curriculum design process needs to make clear the link between the learning outcomes to be achieved (the what) and the methods employed to achieve those learning outcomes (the how), in ways that are informed by a profound understanding of who the learners are and how they can be motivated and supported for success (Hwang & Chen, 2016).

**What needs to change in terms of how we teach?**

Open schooling curricula should be designed to develop resources, tools and support at minimal cost. The structure of education systems is constantly changing with the evolution of various ways learners can access information and create knowledge. Audio-visuals, ICT, social media apps, e-books and other digital content are adding to what can be brought under the purview of an open schooling mode of learning. Traditional methods will slowly and gradually lose their shine, as they entail burgeoning human resource costs and infrastructure maintenance. These shortcomings can be easily addressed by digital content, mediated digitally with individual and peer learning, and guided by techniques to assess the overall learning outcomes incrementally and cumulatively.

In the distance education teaching methodology, the teacher and learner are separated by time and place. The transactional learning gap can be filled by a variety of technological assistance tools that are far more accessible and effective than the age-old methods of books, magazines and other support materials that need to be physically available. The new paradigm of technological aids has been integrated in the blended learning model, whereby technologies can make the learning process more interactive and interesting. The optimal use of technology will not only fill the gaps in traditional education modes but also enable more learners to be reached at any one time.

Rapid technological advancements have widened the horizon of lifelong and flexible learning provision. The use of technological tools such as virtual classrooms, along with virtual laboratories, web-based hypermedia, computer-assisted learning, interactive teleconferencing and community radio, where teacher and taught meet in cyberspace, can be followed by digital assessment sessions. Today’s youths are techno savvy and think of technology not as a tool, but as the groundwork for everything they intend to do. Technology’s role in new curricula is foundational; it supports everything. We no longer need the physical presence of teachers to distribute the content for core subjects, since technology can do a fairly good job while offering the content in interactive, participative and creative ways (Carhill-Poza, 2017). The SWAYAM (India) and Coursera (MOOCs) platforms of today are already doing this, as will be discussed in Chapter 4.

But technology can do nothing without the human involvement that provides the intricate nuances that help students understand and interpret examples in all their human complexity. Human traits and values such as motivation, respect,
empathy and passion need to be part of any curriculum. Teaching presence is considered a key factor in the design of effective online communities of inquiry (Anderson et al., 2001).

Teaching students to teach themselves and others around them, while also learning from others (peer learning), will also be effective ways for reaching out to a large number of learners more easily, and for addressing problems collectively. The sense of a social presence (Kreijns et al., 2014) will hopefully overcome feelings of isolation, making the process more interactive and ensuring the learning outcomes are more effective. This is already a key strategy at institutions such as Peer-to-Peer University and University of the People, and there is no reason why it cannot also be used in open schooling.

The training and preparation of teachers is important to make them better equipped to handle the new range of issues related to students, as individuals learn and accomplish far more when they are applying concepts to their own areas of interest. With the advancement of technology, the time has come to revisit what we teach and explore the possibilities of how we teach and how we evaluate, as integral components of future-oriented curricula (Amory et al., 2018; Bates, 2018). In this process, the activities designed for learners to complete will be as important as, and perhaps more important than, the core content initially selected (Salmon, 2015).

How must assessment practices be changed?

Assessment is a continuous and integral part of the teaching–learning process that aims to constantly improve outcomes. If treated in isolation, it may lead to alienation of the assessment from the curriculum, creating anxiety, fear and lack of interest among students. But if incorporated into the curriculum at frequent intervals, it can help teachers and learners identify problems, look for remedial actions and further strengthen the learning transaction. Instead of learners perceiving tests and examinations with fear, assessment will lead to diagnosis, remedial action and learning enhancement.

Clear and well-defined assessment policies are highly desirable and need to be aligned with the identified learning outcomes, based on which of these skills will be imparted effectively and acquired by students. Traditionally, most school testing was designed to identify student acquisition of content, and it was generally based on a content- and knowledge-based approach to teaching and learning, with the emphasis on memorisation and recall of facts. Now, there is a need to integrate assessment practices, and it has been extended to guide teaching in a formative as opposed to a summative way (Black & William, 1998). This approach generates more-descriptive information and is well aligned with 21st-century teaching and learning goals (Care et al., 2019).

The great challenge in assessment practices is how to integrate various learning domains, particularly lack of knowledge of 21st-century learning domains, into curriculum, pedagogical strategies, and assessment procedures. While the way assessors or curriculum developer are trained provides ample scope for assessing the knowledge and comprehension domains, there are challenges when it comes to measuring most human social and cognitive capacities, including how learners behave and perform. Similarly, there are also challenges when it comes to directly
measuring generic abilities for constructs such as problem solving, critical thinking, collaboration and communication. The major issue is that most of the current assessment practices are highly dependent upon traditional formats, such as multiple choice, true/false, close-ended responses, and rating scales, which are limited in their capacity to assess complex skill sets (Mueller, 2005; Whitlock & Nanavati, 2013; Wiggins, 1989. While in formal classroom situations, the teacher can assess complex skill sets through formative evaluation, in an open schooling system, the task is more complex, as there is little or no scope to observe learners' behaviours or social skills. Therefore, mechanisms should be found to use online evaluation systems that provide opportunities to assess behaviour, social skills, critical thinking and other higher-order skills that otherwise cannot be evaluated through written tests.

Conclusion

The curriculum in an open schooling system cannot cover every dimension required to achieve personal, social, economic, ethical and cultural goals. However, much emphasis should be laid on incorporating learning experiences that meet the demands and expectations of young people and various social groups who need to emancipate themselves from social and economic deprivation. An open schooling curriculum must consider the heterogeneity of learners and address learner diversity in terms of learning needs, language, social and cultural characteristics, disability and gender, while selecting and organising content and instruction. A carefully developed curriculum has the potential to address consistency, equity and quality in an education system. There is no ideal or universally applicable model for every curriculum. Educational content should be designed in such a manner as to promote active learning and contribute to holistic human development. However, changing societies, changing societal and economic needs, ubiquitous technology and constant access to information probably means we need more flexible models. The future of curricula is likely to be constantly evolving as we work through development, implementation and review cycles (Hass & Parkay, 1993; Parkay et al., 2014). Open schooling institutions must attempt to digitise their content. Digital content makes it much easier to update a curriculum and its resources, but there are usually challenges, including that not all learners are at the same point in the curriculum at a given time, and not all learners, especially in remote locations, have access to digital technology. So these challenges also need to be pre-empted and addressed in the curriculum design, development and review cycle.

‘वसुधैव कुटुम्बः’

Vasudhaiva Kutumbakam is a Sanskrit phrase that means “the world is one family.” We live in an interconnected world where we face common issues and challenges that impact the functioning of the entire human race. It is therefore prudent for academia to think globally and act locally to meet the objectives of education effectively. The need of the hour is to develop a curriculum in accordance with international frameworks but with national needs, interests and priorities taken into account.
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Abstract: The achievement of Sustainable Development Goals (SDGs) depends on choices governments make to enhance education systems. This is particularly true of SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Increasing access to high-quality education is a sine qua non for fostering social and economic development and for achieving global development goals. To address the current situation of large numbers of children and youths being out of school, alternative ways of providing education and training need to be prioritised. The aim of this chapter is to show the value of open educational resources (OER) for broadening access to high-quality open schooling in developing countries. The key message of the chapter is that OER can reduce the cost of schooling, promote quality, and enhance student success. However, realising such benefits depends on teachers’ innovative integration of the resources in their teaching and learning processes.

Introduction
Achievement of the Sustainable Development Goals (SDGs) by 2030 will remain elusive unless sufficient investment is made in enhancing education systems, at both national and international levels. This is particularly true of Sustainable Development Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. The 17 SDGs are connected to the United Nations Development Programme’s (UNDP’s) Strategic Plan focus areas for achieving sustainable development, democratic governance and peacebuilding, and climate and disaster resilience. Thus, the SDGs are envisioned as a strategy for forging human development globally. Accordingly, countries need to have comprehensive programmes of action to accomplish these goals. Nobel laureate Kofi Annan affirms the important role education plays in forging human development, arguing, “Education is a human right with immense power...
to transform. On its foundation rest the cornerstones of freedom, democracy and sustainable human development” (Annan, 2001).

According to UNESCO’s Institute of Statistics (UIS), about 262 million children and youths were out of school for the school year ending in 2017 (UIS). This total includes 64 million children of primary school age, 61 million of lower secondary school age, and 138 million of upper secondary school age. Globally, Africa is home to more than half of out-of-school children in the age group 6–11 years. At the same time, one-third of adolescents of lower secondary age (12–14 years) and more than half of youths of upper secondary age (15–17 years) were not in school by the end of 2017. In total, more than 50 million children remained out of school in Sub-Saharan Africa in 2018. Moreover, in South Africa, 3.3 million out of 10.3 million young people aged 18–24 (i.e., 32.4%) are not in employment, education, or training (NEETs) (Department of Higher Education and Training, 2015, p. 5).

The trend depicted above is indeed common in most developing countries, where resources are scarce, poverty is rife, unemployment is very high, and youths and females are most vulnerable. In these contexts, literacy rates are still too low for most citizens to contribute meaningfully to economic development and to participate in the global economy. Issues of livelihood sustainability remain a challenge not only for national governments but also for international development agencies. This is a compelling set of reasons for countries to transform their education systems so they can expand access (reach the unreachable) and at the same time improve quality as a way of empowering their citizenry. Only when there is an educated citizenry can transformation happen and democracies be upheld. Completion of schooling is a necessary foundation on which further and higher education and training are built, but too many children are unable to access or succeed in traditional schooling provision. As Nelson Mandela stated, “Education is the most powerful weapon which you can use to change the world.”

Goals/Overview of the Chapter

The aim of this chapter is to demonstrate the value of open educational resources (OER) for enhancing access and quality in open schooling. To achieve this end, the chapter includes definitions of key terms relating to OER and explains these terms in a way that makes it clear how they apply to open schooling. It also deals with different types of Creative Commons licences to help open school practitioners understand how to use the openly licensed resources they find in OER databases and on the Internet.

This chapter seeks to establish that OER are crucial for broadening access to high-quality open schooling, particularly in the developing world, where both the cost and the scarcity of learning resources act as key barriers to quality education (Rueckert, 2019). According to The William & Flora Hewlett Foundation (2008), millions of learners enrol in schools every year, but too few are learning. The same report argues that although children are expected to be able to read fluently after three years in primary school, grade-level testing indicates that even by Grade 6, many learners cannot read or do basic math.

In discussing the relationship between OER and open schooling, it is important to have clarity on key terms, such as open schooling, OER, flexible learning, resource-based learning and technology-supported learning. These terms are common in the discourse of open schooling.

**Impediments to Universal Education**

As highlighted above, many children and youths of school-going age are out of school and out of any form of training. Most of these unfortunate children are in the developing world, particularly in Sub-Saharan Africa. This section highlights some of the pressing challenges to accessing education in these developing contexts.

The average gross domestic product (GDP) per capita (nominal) in Africa stood at $1,878 by 2019 (Statistics Times, 2020). This includes well-to-do countries such as Algeria, Botswana, Mauritius, Morocco, Seychelles and South Africa; for the majority of African countries it is actually much lower. For instance, South Sudan has a GDP per capita of only $275.20, Burundi $309.90, Eritrea $342.60 and Malawi $370.70 (Statistics Times, 2020). A lot of communities therefore struggle day in and day out to make ends meet. The preoccupation is mainly with putting food on the table for the family, and spending on school is given very low priority. There is therefore an inverse relationship between the cost of education and school attendance. It is, however, known that completion of schooling results in increased chances of finding and retaining employment and enhancing lifetime earnings. Amongst the factors that push the cost of education up are things like school fees or levies used to maintain school infrastructure and to purchase textbooks, uniforms and stationery. These factors vary from context to context. Where the cost is high, many parents cannot afford and therefore keep their children out of school. They may also prefer that their children spend the day engaging in various economic activities that bring income to the family, like herding cattle or helping in the fields. For such poor families, the opportunity costs of attending school tend to be prohibitively high. This situation is worsened by the prevalence of the HIV pandemic, which has resulted in many children heading their families after their parents have died. In these contexts, attending school on a regular basis is just not an option. The cost of education is therefore one of the major impediments to school attendance in developing Africa.

The other constraining factor is distance. Where schools are sparse, which is very common in much of rural Africa, learners walk long distances every day. By the time they reach school, they may be too tired to concentrate on learning. In most cases, they are also hungry, as they take no breakfast before leaving home. Coupled with long walking distances are usually unfriendly surroundings, characterised by flooded rivers or unsafe forested areas to cross. Incidents of learners drowning, falling prey to crocodiles, or being assaulted on their way to school are common. Thus, the long distances some learners need to traverse to get to school create a major impediment to achieving high participation rates in education in some developing countries.

Education is usually viewed as an investment that should ultimately yield tangible benefits. In many developing countries, the benefits of education are severely eroded by either the poor quality or irrelevance of the education that is offered.
Learners make do without adequate facilities such as trained teachers, comfortable classrooms, quality learning materials and a generally conducive learning environment. In these circumstances, learning is neither meaningful nor exciting for learners. In a global survey of 114 responses from teacher organisations affiliated with Education International, it was found that “[w]ithin the school environment, teachers worldwide say they face a shortage of teaching materials, substandard school facilities, and increasingly violent working environments” (Edwards, 2018, p. 3). Such uninspiring school conditions frequently trigger high dropout and failure rates, leading to inefficient education systems. The school environment often does not motivate learners to learn, nor does it tap into learners’ innate potential. Thousands of learners come out of the school system every year and join the cycle of poverty in their communities because they do not have any skills they can use to meaningfully engage in productive economic activities. They lack the knowledge and skills to use the natural resources in their environment for the benefit of the community. If education systems embrace open and flexible forms of learning, including OER, learners can easily be empowered to continue learning on their own, even if they are out of the formal school system.

Access to school education is also constrained by natural disasters and wars. Tsunamis, floods, drought and outbreaks of deadly diseases like COVID-19 are known to have caused immense disruptions to education systems the world over. This is particularly because of the way traditional schooling is organised, which requires learners to go to central places and physically meet with their teachers for a certain number of hours each weekday. Such education is premised on the notion of learning as something that happens only in particular places and at particular times. The arrangements for learning are so inflexible that many motivated people cannot adjust well enough to meet the conditions of learning. They are better off if they keep away from school. With the advent of OER, one can still make the decision to stay at home and access rich learning resources that support continued learning.

In addition to the above constraining factors are policies put in place to regulate the supply and consumption of education in various jurisdictions around the world. Policy dictates who attends school by virtue of age, geographical location and socio-economic background. Policy dictates who has the right to teach, how they should teach and when they should teach. Everything about school education and about learning is kept within a very narrow straitjacket into which many cannot fit. Such is the constraining nature of educational policy in many countries.

The interplay of all these factors impacts negatively on school participation in many developing countries. Alternative forms of education that counter the barriers highlighted above are needed, ways that are more flexible and accommodative of the different types of learners who come on board and the different sites and conditions they choose for learning.

Many of the challenges identified above require systemic change, which we know takes time. However, if we accept that children have a natural capacity for learning, and if we can find ways to get appropriately designed learning materials into their possession, there is a great contribution that we can make immediately.
OER are powerful tools for transforming education provision in developing countries. This is a change that will see regions such as Africa take their rightful place as major actors in the transformation of societies, livelihoods, economies, politics, the practice of science and the performance of the arts. For instance, Africa’s contribution to the global knowledge economy is vital, and yet statistics show that participation rates in secondary education are the lowest globally. Of all the regions, Sub-Saharan Africa has the highest rate of exclusion, with 21% of children of primary school age denied the right to education, followed by Oceania (12%) and Western Asia (11%) (UNESCO, 2016). These three regions also have the widest gender gaps. In Sub-Saharan Africa, 23% of all girls and 19% of all boys are out of school. In Oceania and Western Asia, the out-of-school rates are 14% (female) and 9% (male), and 14% (female) and 8% (male), respectively (UNESCO, 2016). Unless this trend is reversed and more people receive quality education at the schooling level, then proceed to tertiary education, the contribution of developing countries to the global repository of knowledge will remain insignificant. More importantly, the realisation of the Sustainable Development Goals, especially SDG 4, remains a dream in most developing countries if participation rates continue to be unsatisfactory.

In many parts of the developing world, access to quality education is constrained by the inability of communities to afford the cost. This problem presents itself in two ways. Firstly, many parents cannot afford to pay for textbooks and other learning resources needed in school. This results in some children staying at home. Secondly, schools allow children to attend school even if there are no teaching and learning resources. This mostly happens because of government policy interventions that prohibit excluding learners from formal schools due to lack of textbooks. Whilst these are positive policies that seek to increase participation, the quality of education provided is, unfortunately, compromised. In many instances, learning is unexciting, and the social and individual benefits of such education are minimal. For example, in the Progress in International Reading Literacy Study (PIRLS) tests that are conducted by the International Association for the Evaluation of Educational Achievement, some 78% of South African fourth-grade learners could not reach the minimum reading benchmark, compared to 4% internationally (UP, 2016). As Roodt (2018) argues, effectively, nearly 80% of South African learners in Grade 4 cannot read. The PIRLS study also indicates that learners in schools with a library scored — on average — 16% higher than those in schools with no library. Worryingly, over 60% of South African schools do not have libraries (UP, 2016). The importance of having educational resources at home and at school, and of having parents or guardians who support learners with reading, cannot be overemphasised. Poor quality of education is costly to both the individual learner and society at large. The Organisation for Economic Co-operation and Development (OECD) has estimated that if all South African 15-year-olds received a minimum level of education, the country’s GDP would be 26 times more than if education levels remained static.15 One of the major reasons for dropping out of school is that learners are demotivated by the poor quality of learning and do not see themselves benefiting from it in the long run. Rather, they prefer to engage in activities that bring some income to their families and hence seem more worthwhile (Muedini, 2015). This is particularly true of open school learners, who need to be motivated enough to pursue

learning amidst the numerous demands they face at home and at workplaces. Activity-based learning that involves engaging with a variety of resources to solve particular problems makes learning more meaningful and challenging; and OER undoubtedly have the potential to promote this type of pedagogy.

Given the above trends, it is important to make a case for not only how OER enhance the quality of learning, but also how they can help reduce the cost of education and contribute towards the achievement of quality and equity in education. David Wiley, Chief Academic Officer of Lumen Learning, explored the impact of using OER on education efficiencies (Wiley, 2016). His analysis of the benefits of OER was based on a study conducted in the United States of America. Wiley argues that to assess the value of OER, one can look at the interplay between various student metrics (such as student engagement, student progression, student throughput, and pass grades) and the cost of achieving those metrics. The best way to increase educational efficiencies is to increase the student metrics, or decrease the cost, or increase the metrics whilst at the same time decreasing the cost. In his presentation, Wiley shows that while the findings of the study are not conclusive and cannot be generalised globally, there was some indication that the use of OER had great potential to decrease the cost of education, mainly by reducing the cost of textbooks.

Using findings from the same studies amongst American institutions, Wiley illustrated how the use of OER in a business management programme helped improve metrics such as student dropout, quality of grades, and course throughput rates, as compared to using traditional learning materials. The findings on the relative effectiveness of OER were consistent in both the face-to-face and the online programme, as shown in Table 4 below. In both programmes, there was a six-point difference in course completion rates in favour of students who used OER. This example shows how the use of OER has the potential not only to increase access but also to enhance student retention and completion rates.

### Table 4: Face-to-face vs. online provision

<table>
<thead>
<tr>
<th>Metrics F2F</th>
<th>Traditional copyright</th>
<th>OER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dropout</td>
<td>2.3%</td>
<td>1.8%</td>
</tr>
<tr>
<td>Withdrawals</td>
<td>9.9%</td>
<td>8.1%</td>
</tr>
<tr>
<td>C or better</td>
<td>68%</td>
<td>74%</td>
</tr>
<tr>
<td>Course throughput rate</td>
<td>60%</td>
<td>66%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Metrics online</th>
<th>Traditional copyright</th>
<th>OER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dropout</td>
<td>4%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Withdrawals</td>
<td>13.7%</td>
<td>13.1%</td>
</tr>
<tr>
<td>C or Better</td>
<td>66%</td>
<td>70%</td>
</tr>
<tr>
<td>Course throughput rate</td>
<td>54%</td>
<td>60%</td>
</tr>
</tbody>
</table>

Source: Adapted from Wiley (2016)

The idea of introducing open schooling is to try to enhance access to education by reaching those who are not easily reached through the formal schooling system. Drawing on existing OER to support this type of schooling also makes education provision cheaper and more affordable. In theory, everybody who cannot access school and is interested in continuing with school education can participate in open schooling, irrespective of their geographical location, age, socio-economic background, race or physical status. The main factors enabling access are flexibility and affordability — open schooling should be cheaper than
formal schooling. If the costs are high, then the whole essence of providing that alternative form of education is defeated. The metrics discussed above are pivotal in the planning of open schooling.

The Role of OER in Supporting Open Schooling

The flexibility built into open schooling makes this mode of provision attractive to millions of learners who otherwise cannot access formal education for various reasons. There is no doubt that broadening access to education is one of the key strategies for achieving the SDGs, especially SDG 4, which is about ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all. Open schooling reaches poor communities and other disadvantaged people in society and enables them to participate in education without abandoning their economic activities. It offers the flexibility to learn as and when it is convenient to do so. What is key, though, is to ensure that the quality of learning is good. Providing appropriate learning materials to such learners is key in promoting the quality of learning. Due to their relative cost and as highlighted in Wiley’s (2016) study cited above, OER make it affordable even for poor governments to provide meaningful resources to large numbers of open school learners. Thus, through the use of OER, open schooling has immense potential to promote literacy and numeracy rates and therefore to build knowledge societies. Open schooling also promotes the development of independent learning, which is a desirable skill for lifelong learning.

OER Concepts and Licensing

The term “open educational resources” was first utilised at the July 2002 UNESCO conference in Paris (Johnstone, 2005). “Open Educational Resources are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and repurposing by others” (Atkins et al., 2007, p. 4). OER include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials or techniques used to support access to knowledge. Wiley considers OER to be teaching, learning and research materials that are either in the public domain or licensed in a manner that provides everyone with free and perpetual permission to engage in the 5R activities (Wiley, 2020). Thus, the fundamental aspect of OER is the licensing of a resource that enables other users to freely use the resource, if they acknowledge the original creator. The section below on types of Creative Commons licences clarifies what rights each licence allows. Only education materials licensed in a manner that provides the public with permission to engage in the 5R activities can be considered OER (Creative Commons, 2020, p. 106).

The 5Rs are important in facilitating the easy use of resources; they are retain, revise, remix, reuse and redistribute. Explanations of these terms are given below:

1. **Retain:** make, own and control a copy of the resource (e.g., download and keep your own copy)

2. **Revise:** edit, adapt and modify your copy of the resource (e.g., translate into another language)
3. **Remix**: combine your original or revised copy of the resource with other existing material to create something new (e.g., make a mashup)

4. **Reuse**: use your original, revised or remixed copy of the resource publicly (e.g., on a website, in a presentation, in a class)

5. **Redistribute**: share copies of your original, revised or remixed copy of the resource with others (e.g., post a copy online or give one to a friend). (Wiley, 2020)

### Copyright and Open Licensing

As highlighted above, OER have an open license. Most textbooks used in schools are fully copyrighted, which means users are limited in terms of how they should use them. For example, they are not allowed to photocopy a big chunk from a book, nor are they allowed to extract a diagram or an image from a book and plug it into their own material without seeking the consent of the book’s original authors. Besides this, just accessing them is a challenge, especially for poor people, because they are not free. This is the main reason why schools in most developing countries do without sufficient learning resources, resulting in a monotonous type of school education.

On the other hand, OER have open licenses that allow users to access them freely and to be flexible in the way they use them. It is worthwhile, though, to note that in working with OER, one should take into account the licence type under which the resource is published and see how best the resource is to be used. Even Creative Commons licences vary in terms of the flexibility of a resource’s use. Some place certain restrictions on how a resource can be used; others are so flexible that they give permissions for all the 5Rs discussed above. The different Creative Commons licences are illustrated in Figure 7.

<table>
<thead>
<tr>
<th>Derivatives can be shared</th>
<th>Derivatives can be shared ONLY IF you share alike</th>
<th>Derivatives CANNOT be shared</th>
</tr>
</thead>
<tbody>
<tr>
<td>![License Icon]</td>
<td>![License Icon]</td>
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</tbody>
</table>

**Figure 7: Creative Commons licences** (Source: Wiley, 2020)

It is important for people working in open schools to understand the implications of the different CC licences, not only so they know how to use the resources they find in various databases, but also so they make informed decisions on how to licence the resources they produce. In fact, knowledge of CC licence types should guide national and institutional policy on OER.

### The Value of OER in Open Schooling

Open schooling is an alternative way of providing education to learners who drop out of the formal school system for one reason or another and to adults who wish...
to complete the school cycle but cannot go back to formal school because of their age. As highlighted in the introductory part of this chapter, many young people are out of school in most developing countries. This is largely due to education systems that are highly inefficient and therefore lead to high failure and dropout rates. This problem is compounded by the seemingly high opportunity costs of attending school for children from poor socio-economic backgrounds. Even from the very tender age of around ten years, many children in the developing world start contributing towards family sustenance through such activities as herding cattle and goats, helping in the fields or selling at markets. These essential family activities often take precedence over going to school and therefore keep large numbers of children of school-going age out of school. Open schooling is flexible in terms of where, when and at what pace one learns. It is also flexible in terms of age. Thus, open schooling is the most effective way of expanding access by reaching those people who cannot be reached by the formal school system for various reasons.

However, we hasten to mention that flexible as it is, open schooling is structured and well planned. There is a well-defined curriculum to be followed, which is often like the formal school curriculum. There is a carefully designed teaching and learning strategy that ensures that curriculum objectives are achieved, and a well-structured assessment system that is used to ascertain that desired learning outcomes are attained. In countries where open schooling is well planned, it is mainstreamed in the national schooling system, with appropriate resource commitments, administration and monitoring systems put in place.

A key aspect of open schooling is the provision of high-quality and appropriate learning materials that promote student engagement during the learning process. Such materials go beyond the conventional textbook that is used in face-to-face environments. They are designed in such a way that they encourage active learning while at the same time promoting deep thinking. They tap into the learner’s context and generate interest in learning. Unlike a conventional textbook, they promote independent learning. The challenge faced in many developing countries is that such resources are not available, nor are there many people with the capacity to develop them. Herein lies the value of OER, particularly to open school learners who are dependent on learning materials for academic success. There are many databases today that provide a wealth of resources that can easily be adapted for use in any education system. This can be done at national as well as institutional levels. Instead of starting from scratch, teachers can draw on existing OER and customise them for their own curriculum. The advantage of using OER to support a curriculum for open schooling is that resources can be obtained in a short period of time and at a low cost. This is possible because digital content is easily accessed through the Internet, so access is at nearly zero cost, and the content is usually up-to-date information, which enhances their quality. Since OER are typically accessed or developed in electronic form, making them available to a dispersed group of learners is easier and cheaper than transporting hard-copy materials. Most OER specific to particular disciplines are developed by experts who have a passion for sharing knowledge in their field, and the OER are therefore likely to be of good quality. Plus, they lend themselves to improvement by teachers and other experts.
In addition to making learning materials available quickly, using OER provides a good opportunity to use resource-based teaching methods, as learners can be provided with many resources. Resource-based learning and teaching is a teaching method whereby students develop knowledge, skills and understanding by using a wide variety of print, non-print and human resources. It is a learner-centred teaching approach that fosters the development of individual students by exposing them to multiple perspectives on a concept and by accommodating their diverse interests, learning styles, experiences, needs and ability levels. It is a departure from the traditional approach, where the teacher is viewed as the custodian of knowledge and “tells” everything to the learner, who is assumed to be a passive recipient of knowledge. It is acknowledged that in some cultures, this kind of constructivist approach goes against established norms, since it encourages children to question what adults tell them. However, if they are exposed to learning resources, children will still learn new things on their own. This is what Sugata Mitra refers to as self-organised learning environments, which he defines as mildly chaotic environments where children learn spontaneously by interacting with resources such as the Internet, in search of answers to big questions (Mitra, 2019). Such self-organised learning leads to the development of essential skills to find information and apply it to solve problems.

Many countries today harness the affordances of technology to promote the quality of open schooling using OER. Particularly at early stages, where literacy levels constrain the effective use of text resources, the integration of audio resources into the learning process promotes quality learning. Increasingly, learning management systems (LMSs) are used in open schooling, and OER multimedia play a key role in this regard. Thus, technology-supported open schooling is becoming more prevalent in many countries. Electronic materials are uploaded on the LMS for learners to access and download, and even print, for use offline. Learner support is also provided through the LMS. Learners can interact virtually with their peers and with their tutors. Thus, innovative open schooling has the capacity to expand access, to promote equality, to deliver high-quality and effective services, and to reduce the unit costs of education.

Whilst we emphasise the importance of using technology to support good-quality open schooling, we need to caution against passing the cost burden onto the student. There is a need for learners to have access to affordable devices and stable Internet connections. This has the potential to push the cost of technology up and therefore be as much of a barrier as the cost of physical textbooks. But if open schools provide affordable devices as part of the school fees, and if the core resources are already downloaded, and if occasional free Internet can be provided in community centres and other public places, the cost of running technology-supported open schooling remains relatively low. In some countries, negotiations are held for private Internet providers to reduce the cost of Internet access for students. For example, during the COVID-19 lockdown period, South Africa’s Department of Higher Education and Training initiated discussions with the major mobile network operators in South Africa to enable all students in the post-school education and training sector to have ready access to the Internet and connectivity for the purposes of learning (Nzimande, 2020).

To teachers, OER provide ready materials that can easily be adapted for particular curricula and learners. Even teachers who are novices at developing learning
materials can easily tweak already existing one for their learners. To governments, using OER to support open schooling has the main advantage of reducing costs by eliminating the need to buy fully copyrighted books. Hence, some governments, such as those of Brazil and South Africa, release any learning materials financed through public funds as OER.

It is sometimes argued that OER have the potential to deliver greater learning efficiency. For example, Salt Lake City, in the United States, demonstrated improved scores on state tests for thousands of students after replacing fully copyrighted textbooks costing $80 each with open textbooks that were aligned to the curriculum and cost only $5 (William & Flora Hewlett Foundation, 2013). Carnegie Mellon University’s Cognitive Tutor programme helped students complete the institution’s Open Learning Initiative courses in half the time and with greater learning gains than those enrolled in traditional courses (Lovett et al., 2008). Similarly, many community colleges in the United States report substantial improvements in both student retention and graduation rates as a result of using open textbooks. Thus, the potential of OER to improve access, promote student retention and graduation, and enhance the overall quality of education cannot be overemphasised. Although the examples in this paragraph refer to conventional learners, the argument that OER promote retention and graduation rates holds for open schooling.

Two important points are worth noting here. The first is that where fully copyrighted prescribed textbooks are used, students who cannot afford them simply do not buy the books, and this constrains their studies or even forces them to drop out. The second is that OER will have a greater impact if they have been designed to foster independent learning and not simply to transmit information. The advantage is that where OER are not designed for open and distance learning, one can revise them to build into them desirable pedagogical aspects.

Open schools should also develop a culture of sharing whatever resources they produce. A common repository where such resources can be stored is important and can be established at national as well as regional levels. Examples of such resource repositories are the Institutional Repository of the Research Centre for Eco-Environmental Sciences, Chinese Academy of Sciences, in China, and MIT’s Open Courseware, in the United States. Chapter 5 of this book, which is on open education practices, deals with the sharing aspect in more detail.

**OER and Quality Issues**

The issue of OER quality is important, as it influences people’s perceptions of the value of these resources in education. Some sceptics argue that OER are poor quality, as they are not peer reviewed. In fact, some people associate anything that is free with poor quality. Such critics obviously misconstrue how open content is developed and used. By their nature, OER allow adaptation, which makes it easy to improve on whatever shortcomings the user identifies and share back an improved version to the public. Besides being created by people with expertise and passion in particular fields of knowledge, OER arise through the cumulative efforts invested by various users, making some of them the best resources that one can ever get. An example is Seifert and Sutton’s (2009) psychology open textbook. In addition to being developed by two authors who are experts in the
field of psychology, this online open resource was also reviewed by 12 experts, which makes it a robust resource in educational psychology. With regards to open schooling in particular, OER courseware that is readily available can be adapted to suit a particular country’s context and, in the process, a lot of improvements can be made, which enhance the quality of the courseware.

Quality as “fitness for purpose” suggests that unless a resource meets the purpose for which it is meant, it ceases to be a quality resource. This means that even a well-written textbook fails to meet the quality test if it is not fit for the particular purpose in a defined context. Any teaching and learning resource therefore requires some alignment with the purpose for which it is used in a particular context. Given that they allow repurposing and adaptation, OER are better placed than proprietary resources when it comes to improving their fitness for purpose in open schooling.

Quality assuring OER

Just like any resources we use in education, OER should go through a formal system of quality assurance. This ensures that resources that are used are relevant, appropriate for the age level and intellectually enriching to learners. In most countries, ministries of education have systems in place for approving reading resources that are used at the schooling level. It is important for open schools to have policy guidelines to ensure the appropriate selection, development and publishing of OER produced within the system.

New developments in the world of publishing

The key advantages of embracing OER in open schooling lie in the cost-effectiveness of using these resources as well as in their accessibility. This has driven the publishing industry to adopt innovative ways of publishing resources that can also be easily accessed by students and at a low cost. One of these approaches is “inclusive access.” Seaman and Seaman define inclusive access as a partnership between an institution, bookstore and publisher to deliver digital course materials to students, below market rates, on or before the first day of class (Seaman & Seaman, 2020, p. 5, citing McGraw-Hill, n.d.). The common features of inclusive access, which make the approach competitive with OER, are that the resources are digitally distributed, they are available at low cost, students get them on day one of their academic year, and arrangements are made between institutions and publishers such that all students are included in the package, unless they opt out (Seaman & Seaman, 2020, p. 5). This means that students do not have to worry about textbook resources. This augurs well for open school learners who find it convenient to do their learning away from a physical institution.

It remains to be seen whether such innovative publishing models can compete with OER in terms of overall cost. What is clear is that if open schooling systems in different countries produce learning materials that they then share in repositories as open resources, teaching and learning resources will be readily available for all teachers and learners, and the quality of open schooling will improve. If such resources are in electronic form, their distribution to students will be easy. As highlighted at the beginning of this chapter, many institutions
now use LMSs, where such materials can be uploaded for students to download. Open schools can also capitalise on technologies that allow students to access and download materials on the few occasions they have access to technology. They can then use them offline for most of their study time. The Commonwealth of Learning (COL) has supported open schools by providing them with a device called an Aptus.\footnote{For more information on the Aptus technology, visit this site: http://oasis.col.org/bitstream/handle/11599/2346/Slides%20-%20PDF?sequence=1&isAllowed=y} The Aptus is placed at a centre that acts as a local open schooling hub. The device provides Wi-Fi to students within a certain radius of the hub so they can access learning resources on the LMS.

**Approaches to quality assuring OER**

Just like any other resource that is used in education, OER need to be evaluated to ensure that they are of good quality. Experience shows that practices vary from country to country regarding the regulation of teaching and learning resources that are used in the schooling system. In some countries, a whole unit in the ministry of education is set up to handle curriculum matters, including vetting materials that are allowed in the system. In other contexts, the core resources are recommended by the ministry, but individual schools (and teachers) have the option to choose any additional resources as they see fit. In the latter case, the responsibility for quality assurance rests with the school or with individual teachers (as professionals) in those schools. In other words, a self-managed quality assurance approach that rests on the professional artistry of the teachers is used. Teachers who access resources evaluate them individually to determine their fitness for purpose. In other instances, teachers use end-user perspectives to determine the quality of OER. Often, this requires some degree of information literacy on the part of end users. Thus, the feedback from a pilot process shows whether a resource is good or not.

Another way of quality assuring OER is to pilot the resource with real students. Using students to check OER for clarity, content and even for copyright and licensing issues before releasing them on a large scale is an important quality assurance process that can give useful feedback to instructors. If this approach is used, one needs to ensure that students have sufficient information literacy skills to evaluate the OER. In open schooling, most learners haven’t yet developed enough information literacy skills to evaluate OER, unless they are exposed to appropriate induction early enough. However, given the amount of resources that are available on the Internet, and given that students access these resources when they search, it is advisable to equip students with appropriate literacy skills so they are able to distinguish between bad and good resources. This is particularly important in open schooling, where learners study on their own, sometimes in isolation from their peers. They need to know how to check the quality of any resource they access online before they use it for their learning purposes.

A useful framework for evaluating OER consists of a matrix that guides users in asking useful questions about a resource. The matrix consists of questions that relate to important aspects of a resource:

- alignment of resource to curriculum or course objectives
- quality of explanation of the subject matter
• utility of materials designed to support teaching
• quality of assessment
• quality of technological interactivity
• quality of instructional and practice exercises
• opportunities for deeper learning
• assurance of accessibility (Achieve, 2011, p. 1)

Getting answers to such questions leads to some idea about the quality of a resource. This matrix is presented in diagrammatic form in Table 5 and can be a very useful tool for teachers when evaluating the quality of OER in open schools.

Table 5: A framework for quality assuring OER

<table>
<thead>
<tr>
<th>Categories of Criteria</th>
<th>3 – Superior</th>
<th>2 – Limited</th>
<th>1 – Weak/NA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alignment to Course Objectives</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Alignment to individual course objectives</td>
<td>Course objective fully aligned and addressed comprehensively.</td>
<td>Course objective partially aligned and addressed.</td>
<td>Course objective neither aligned nor addressed.</td>
</tr>
<tr>
<td><strong>Explanation of the Subject Matter</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the content</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• valid and appropriately current?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• understandable by the target audience?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• authoritative and appropriate (age level, language, visuals, and cultural sensitivity)?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the content present the main ideas clearly, and does it connect associated concepts?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content is valid, appropriately current, understandable by the target audience, authoritative and appropriate. Content presents the main ideas clearly and connects to associated concepts.</td>
<td>Content is partially valid, less than appropriately current, garners less than complete understanding in target audience, is incomplete in elements of authority and appropriateness. Content presents most of the main ideas clearly and connects to some associated concepts.</td>
<td>Content is invalid, outdated, not understandable by target audience, deficient in authority and appropriateness. Content neither presents the main ideas clearly nor connects associated concepts.</td>
<td></td>
</tr>
<tr>
<td><strong>Utility for Instruction</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Are instructions for use provided?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Do the components of the OER function as intended?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Does functionality require specific software or hardware?</td>
<td></td>
<td></td>
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<td>• Is the OER licensed for open use? (CC licence for reuse, remixing, revision, redistribution)</td>
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<td>• Is content adaptable or revisable?</td>
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<td>• Is metadata available? (e.g., creator, date, key words, synopsis, media type, disability options)</td>
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<td>Comprehensive instructions are provided; components function as intended; functionality does not require additional software or hardware; OER are licensed for open use; content is adaptable and revisable; and metadata is available.</td>
<td>Instructions are incomplete; some components do not function as intended; some functionality requires additional software or hardware; OER licence is partially open; content is not easily adaptable and/or revisable; and metadata is not available.</td>
<td>Instructions are not provided; components do not function as intended; functionality requires additional software or hardware; OER are not licensed for open use; content is not adaptable and/or revisable; and metadata is not available.</td>
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<td>Assessment is aligned to the content; it measures and appropriately weights the major concepts of the content; and the assessment structure supports an accurate measurement of student proficiency.</td>
<td>Assessment is moderately aligned to the content; it inconsistently measures and weights the major concepts of the content; and the assessment structure compromises an accurate measurement of student proficiency.</td>
<td>Assessment is misaligned to the content; it does not measure or appropriately weight the major concepts of the content; and the assessment structure does not support an accurate measurement of student proficiency.</td>
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Source: Adapted from Achieve (2011).
A group of British Columbia post-secondary librarians produced a fairly comprehensive guide teachers can use to check the quality of OER. The guide covers six main categories of the essential qualities of OER: relevance, accuracy, production quality, accessibility, interactivity and licensing. Key lines of inquiry are pursued under each of these categories, as shown in Figure 8 below. The categories and accompanying lines of inquiry are useful for both consumers and creators of OER. They are also a good framework for informing OER policy in an open school system.

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**Figure 8: A framework for evaluating OER**

**Factors Constraining the Use of OER in Schools**

Whilst the use of OER has grown significantly over the past decade, this has largely been limited to certain regions or countries. In the United States, for instance, 40% of K-12 educators are reportedly using OER to supplement their core curriculum materials (William & Flora Hewlett Foundation, 2013, p. 9). In numerous parts of the developing world, many people still lack awareness of OER as a concept and of the value of using these resources to support the curriculum. Even in America, where OER seem to have been well adopted,
Moore (1999), cited in William & Flora Hewlett (2013, p. 9), argues that “by and large, OER are being used as supplementary rather than as primary curriculum resources.” However, there are institutions in America, particularly community colleges, that have mainstreamed OER and have substantially reduced the cost of education for students. Notwithstanding this development, many barriers still must be overcome before OER can be adopted as primary resources for the school curriculum. As highlighted above, the first one is lack of awareness of these resources. There is still a lot of advocacy that needs to be done, especially in government ministries of education, and amongst educators and policy makers. People need to understand that there is a wealth of freely available resources of all kinds today that can be adapted for any context. People need to understand that we now live in a world that believes in sharing knowledge, and that there is no good reason why learners in any part of the world should do without learning resources. In a survey conducted amongst faculty in the United States, it was found that 47% of them were not aware of OER, 16% were somewhat aware and 37% were aware. As Figure 9 shows, even in such contexts as America, where adoption is reportedly high, nearly half of the faculty still report being unaware of OER.

![Pie chart showing awareness of OER](source adapted from Seaman and Seaman (2020, p. 25))

**Figure 9: Faculty awareness of OER**

A second factor constraining the adoption of OER is lack of understanding of licence types and their implications in terms of using resources. Seaman and Seaman (2020) confirm this constraint in their report on the survey mentioned above. The results of the survey indicate that whilst most academics showed awareness of fully copyrighted materials, not many were aware of public domain status and Creative Commons licences, as reflected in Figure 10.
Thus, a lot of capacity development is needed to familiarise policy makers and educators with the different open licences and the important rights they give away to allow more flexible use of OER.

Whilst Figure 10 shows limited levels of awareness in America about legal permissions with respect to open licences, the situation is worse in developing countries, where there has been even less use of OER. This aspect is particularly important for open schools that need to adapt existing materials to create rich learning environments for independent learners. Knowledge of legal permissions empowers people to use OER appropriately.

Another significant constraint to the adoption of OER is teachers’ resistance to changing their pedagogy. Although teachers may be aware of OER, slow change in approaches to teaching — resulting in the continued use of traditional methods of teaching that require learners to be largely consumers of information — is a significant barrier to mainstreaming OER. Integration of OER requires teachers not only to creatively use existing OER but also to create some. As Mishra (2017) argues, transformation of the educational landscape and improvement in the quality of learning will take place not because of OER per se but due to the way teachers engage with OER.

In some instances, there are also negative perceptions of the quality of OER, compared to traditional textbooks. Critics associate OER with poor quality simply because they are free and may not be peer reviewed. Two arguments can be made against such criticism; the first is that unless they are published under a CC BY-ND or CC BY-NC-ND licence, OER give the user the option to adapt them to suit any context. This means that one has the option to make whatever improvements they want and improve the quality of the resource. The second argument is that many OER are developed by people with expertise in and a passion for a particular discipline who want to share their knowledge more widely. It can therefore be argued that such OER stand a good chance of being some of the best resources one can get in a given discipline. In fact, some of these resources are peer reviewed (e.g., OER Commons). Besides these two arguments, users can deliberately select OER they consider good enough and relevant for their purposes. In the study by Seaman and Seaman (2020) referred to above, faculty who indicated they had adopted OER “rated its quality as equal to that of commercial alternatives” (Seaman & Seaman, 2020, p. 35).
One of the challenges faced by many academics is their lack of sound pedagogical grounding. Although this is common in universities due to lack of exposure to pedagogical training, there are also many trained teachers in open schooling systems who are deficient when it comes to instructional design. Effective integration of OER in teaching and learning processes requires one to have sound learning design expertise, consciously grounded in appropriate learning theory. It requires one to know how people learn (independently) and how best they can retain and apply that knowledge. Understanding of what learning entails is fundamental for choosing appropriate OER and for designing learning in such a way that learning resources are used effectively enough to facilitate the achievement of defined learning goals. Thus, limited pedagogical knowledge is a potential barrier to embracing OER.

Another significant limitation is the general lack of OER policy at both institutional and national levels. Where it exists, policy provides an enabling environment for using OER, and the converse is also true. As a guideline, policy provides direction and in some instances incentives for using OER. It clarifies the often contentious issues of intellectual property rights within an institution. Where OER policy exists at a national level, like in Brazil or South Africa, resources that are developed using public funds are made more readily available, and more people benefit from them. This aspect is particularly important for open schooling, where there is a lot of duplication of effort between countries with similar curricula. For example, many repositories have OER that can be customised for curricula for different countries. Examples of such repositories include the British Columbia Open School,\textsuperscript{17} which has teaching and learning OER; the Caribbean Examinations Council,\textsuperscript{18} with schooling-level curricula used across different Caribbean countries; and COL’s OER4Schools,\textsuperscript{19} which encompasses 17 OER subjects developed for secondary school curricula in six different countries — Botswana, India, Lesotho, Namibia, Seychelles, and Trinidad and Tobago. Other countries are free to use the OER materials and adapt them as appropriate for their own curricula. If institutions exploit their expertise in developing a particular set of resources and share these through similar common portals, this will go a long way toward not only making more resources available, but also improving the quality of those resources. Within a single country, resources developed for open schooling can also be used in the conventional face-to-face curriculum, thereby cutting the cost of buying textbooks and enhancing learning outcomes. Thus, OER policy at the national level has great potential for rationalising investments in educational resources. Many developing countries simply do not have a culture of sharing. Policy can help break this pattern and encourage sharing. Such policy paves the way for openness in education, which lays a foundation for the co-creation of resources and learning through active participation in knowledge production.

\textbf{Conclusion}  

This chapter has highlighted some of the major shortcomings of education systems that lead to non-participation by many children and youths. It

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\textsuperscript{17} https://www.openschool.bc.ca/k12/  
\textsuperscript{18} https://www.cxc.org/examinations/ccslc  
\textsuperscript{19} https://www.col.org/programmes/open-schooling/oer-open-schooling-oer4os
underscores the social and economic implications of keeping such large numbers of children out of school. To alleviate this situation, more flexible and cost-effective ways of providing schooling should be adopted to augment traditional schooling. Open schooling is one such innovative approach to enhancing access to school education in ways that can accommodate learners with idiosyncratic needs. However, for open schooling to be effective, the quality of provision is very important. The chapter has argued that OER have great potential to improve the quality of open schooling, as they are relatively cheap and easy to access. Adopting OER enables institutions to provide plenty of learning resources to learners and to use more constructivist approaches to learning. Embracing OER is one of the best ways of ensuring that learning is supported by adequate and relevant resources, which are common challenges in most developing countries. The chapter also has brought to the fore the importance of quality assuring any OER before they are made available to students. Examples of approaches used to quality assure OER have been provided. Particularly for open schooling, the idea of sharing openly licensed resources through common portals cannot be overemphasised.

Suggested Further Reading
OER Knowledge Cloud – A survey and repository of OER research.20

References

20 https://www.oerknowledgecloud.org/
Addressing the Learning Needs of Out-of-School Children and Youths through the Expansion of Open Schooling


Abstract: The open schooling concept was one of the key initiatives outlined in the Commonwealth of Learning’s Three-Year Plan for 2009–2012. It is an initiative using a model that operates on employing open educational resources to expand access to education, especially for those from underserved and impoverished communities. In this chapter, we will explore how recent developments in technology such as massive open online courses (MOOCs), blockchain, digital credentialing, augmented reality and virtual reality contribute to the improvement of open schooling models from different perspectives. Technology can improve access to and delivery of learning resources through MOOCs, including a learner support infrastructure. At the same time, ICT-enabled pedagogies can enhance the learning outcomes of students engaged in open schooling. We will also elaborate on issues of the recognition and validation of learning with open schooling, and discuss the potential of emerging technologies such as blockchain to support the development of valid and portable e-credentials. In short, this chapter discusses how the development of technology can enhance the quality of education and support learners to thrive in open schooling systems. However, the theme of challenges arising from new technologies is also explored. Can the enthusiasm for and promise of new technologies be sustained when brought up against the realities of rules and systems long in place? That is the chapter’s guiding question. In doing what seems “obviously” correct and innovative — for example, equipping each person in a cohort of learners with their own technological device — have we in some circumstances been guilty of putting the cart before the horse? The adoption of new technology can pose as many challenges as it solves in an open schooling context. In this chapter, we explore change management theories and provide suggestions based on proven models and on anecdotal responses from persons at open schools currently undergoing a technological change process.
Introduction

Education is fundamental to the development of a country or a society. Educating the people of a country, preparing them to face life challenges and to contribute to their communities, is one of the purposes of education. Classrooms are not the sole place for learners to learn and build their knowledge, as learning can also happen outside the physical classroom, where conventional teaching methods can pose challenges. Irrespective of their age, culture, gender, ethnicity, socio-economic class or abilities, people can still learn. As observed in Chapters 1, 2 and 3, open schooling is an excellent way to equip people with the necessary skills and competencies by providing and delivering education and training to all citizens, outside the classroom, thus expanding access to all and ensuring inclusive education for all.

Chapter Goals

This chapter seeks to provide an overview of recent developments in technology and their contributions to teaching and learning in an open schooling framework. It describes how such an initiative as open schooling can cater to the need for expanded access to and flexibility in learning.

Definition of Key Concepts

In this chapter, the following key concepts are used and defined:

- **Information and communication technologies (ICT)** – This concept encompasses both information technology and communication technology, and it involves the application of digital technology that helps institutions and businesses in their use of information.

- **Open educational resources (OER)** – These are learning resources that reside in the public domain or under an open licence and can generally be used at no cost and for adaptation and redistribution.

- **Open schooling concept (OSC)** – This is an educational model that addresses an open learning culture where the learner and the tutor are physically separated and where learning can occur formally, informally and outside the traditional and conventional classroom. It uses a range of flexible approaches to provide teaching and learning opportunities.

- **Technology-enabled learning (TEL)** – This concept encompasses the use of applications and processes that can help to support teaching and learning by employing technology to enhance experiences.

The Open Schooling Concept

The open schooling concept was one of the key initiatives outlined in the Commonwealth of Learning’s Three-Year Plan for 2009–2012 (titled Learning for Development). It is an initiative using a model that operates on employing OER to expand access to education, especially for those from underserved and impoverished communities. Open schooling is an alternative to the traditional schooling model. Its objective is to provide access to educational opportunities for all, irrespective of the learner’s age, prior qualification, socio-economic
background or geographic location (Sotiriou & Cherouvis, 2017). It transcends different educational phases, from primary schools to post-secondary educational provision.

Phillips (2006, p. 9) described the concept of open schooling as “the physical separation of the school-level learner from the teacher, and the use of unconventional teaching methodologies, and information and communications technologies (ICT) to bridge the separation and provide the education and training.” Rumble and Koul (2007, pp. 234–236) focused on the openness and convenience which facilitate learning that is complementary to the conventional system (i.e., that replicates the curriculum) and learning that is an alternative to the traditional method (for example, that addresses the context of an adult-relevant curriculum). Open schooling concepts, when used in post-secondary settings and lifelong learning contexts, are often referred to as open learning. The difference is that schooling is the term commonly used when we refer to primary and secondary education levels, while open learning mainly relates to adult learning contexts (Castaño Muñoz et al., 2013). This is the frame of reference we adopt in this chapter, as these terms often can be used interchangeably, while we might actually be talking about entirely different target audiences and educational settings.

In general, open schooling helps learners develop the autonomy to learn outside the bounds of schools or campuses. Open schooling is gaining in momentum and popularity in different countries and varying contexts (Kahle, 2010). For example, in some countries and regions, the open schooling model has spread quite rapidly, especially in rural and isolated areas. This is because many families stay in such areas, and the options of hiring a private tutor for their school-age children or enrolling them in boarding schools are not desirable or affordable solutions. In such contexts, technology-enabled distance education is often seen as a major driver for open schooling (CEDEFOP, 2004). While there are many possibilities, there are also key challenges to overcome, often related to instructional design, inclusive access to technology, recognition of qualifications and credentials, quality assurance and building the capacity of teachers.

An Introduction to Technology-Enabled Learning

We are living in a digital age where most of the things we do are linked in one way or another to some form of digital technology. Internet technologies are now so advanced that even familiar objects such as electric lights are connected to the Internet. We call this concept the Internet of Things (Zanella et al., 2014). In the recent past, Internet connectivity was mainly achieved through a desktop computer equipped with a web browser. Nowadays, the connectivity is seamless, wireless and occurs through phones, tablets, watches, televisions and other devices. The World Wide Web is rich in multimedia content, promotes real-time social interaction and enables live video streaming in an unprecedented manner. Learning opportunities are endless through this highly connected and ubiquitous environment (Groff, 2013). However, the digital divide that limits access to the Internet and digital technologies and services is still a concern in developing countries, particularly in remote and already underserved areas. It is precisely in these areas that open schooling is critical to ensure that out-of-school children, youths and adults have adequate access to learning opportunities that can provide
them with a sustainable livelihood. Therefore, improved access to technology in such contexts is a high priority, and the use of technology-enabled learning can strengthen current open schooling models to enhance learning opportunities and the quality of learning experiences. With the COVID-19 outbreak, millions of students around the world were out of school for months. Consequently, there was an uptake of eLearning and technology tools to support schooling from home. In most cases, however, in both developing and developed contexts, this situation was unplanned, and authorities and institutions faced numerous problems when trying to maintain a smooth provision of educational services.

**What is technology-enabled learning?**

The term technology-enabled learning has often been used interchangeably with the terms technology-enhanced learning, eLearning, online learning, digital learning and computer-based learning, amongst others. TEL, in its broader sense, means the application or use of any form of information and communication technology in teaching and learning (Kirkwood & Price, 2016). Technology can provide learners with more flexibility and autonomy. It also helps to improve the presentation of learning resources and to keep learners more engaged in the learning process through enhanced interaction. Technology can assist learners with understanding more complex concepts through new applications, such as virtual reality (VR) and augmented reality (AR). Therefore, in this chapter, we consider TEL as any form of educational activity that applies or relies to some extent — or even entirely — on information and communication technologies in its execution.

**Forms of technology-enabled learning**

In the section below, we look at the primary types of TEL in the form of a taxonomy, where we try to regroup related technologies under appropriate headings. One of the oldest forms of TEL is the use of audio-visual media via radio and television. TV is still a predominant form of technology, mostly targeting the entertainment sector. However, with the provision of interactive phone-in, on-demand and Internet-enabled services, it remains a promising education technology for reaching areas where there may be no or limited Internet access.

**Digital projection in classrooms**

One of the early integrations of technology in the classroom was the replacement of traditional overhead projectors with digital projectors, which enable teachers to connect their computer to the device and project the contents onto a screen. Digital projection allows the teacher to use multimedia presentations (including videos) to improve students’ understanding and their overall learning experiences. With improvements in projector technologies, such devices can now connect wirelessly to the Internet and tablets to make teaching interactive. Such devices include interactive whiteboards.

**Computer-based eLearning**

Computer-based eLearning can be traced back to as early as the mid-1960s in the developed world. At that point, it was mainly through stand-alone educational software that learning could take place. With the introduction of
computer networks and advances in computing technologies, especially from the multimedia perspective, computer-based eLearning has been widely adopted in educational settings. Nowadays, computer-based eLearning enables a convergence of learning possibilities, requiring a computer and an Internet connection. We refer to these as web-based learning, online learning or Internet-based learning.

**Web-based (online) learning**

Web-based learning is a form of computer-based eLearning, and it provides access to a range of eLearning platforms and tools, including instructional materials in the form of documents, videos and interactive resources. Web-based learning essentially needs a connection to the Internet. On the Web, interaction can be both synchronous (happening at the same time — for example, through a webinar) and asynchronous (happening at different times — for example, a discussion forum that runs over the period of a week). Students can have access to complete courses both free and for a fee, while institutions can deliver high-quality instruction via the Internet.

**Mobile learning applications**

Mobile learning (or m-Learning) has been the subject of many academic debates since companies such as Nokia began dominating the smartphone market with devices that could run Windows Mobile Education and Java applications. These devices were equipped with cameras, digital screens and Internet connectivity. However, m-Learning never really took off until the advent of tablets. Then contemporary operating systems such as iOS and Android enabled support for fully fledged mobile applications, a move that revolutionised the whole mobile industry. Mobile applications can run both as stand-alone offline apps and as Internet-enabled applications, and tablets such as the Apple iPad and Samsung Galaxy Tabs (including many others) can run web browsers.

**Social media platforms**

Social media is now widely used in all spheres for communication, marketing, and social interaction, particularly by younger generations. In light of this, educational institutions are increasingly adopting social media in teaching and learning. For example, teachers and students are using Facebook or WhatsApp groups to communicate and share learning resources outside the physical boundaries of the classroom.

**Virtual classrooms and live streaming**

With advancements in network and broadband technologies, the Internet has become the preferred platform for videoconferencing. Educational institutions can conduct virtual classrooms in real time using Internet-based video conferencing tools such as Skype or Zoom. Further developments of such technologies, and their convergence with the Internet, have enabled the emergence of new pedagogical concepts such as the flipped classroom.

**Trends in Technology-Enabled Learning**

Technology has enabled the emergence of a few new ways of teaching.
**Flipped classroom**

The flipped classroom technique dates to 2007, when two high school teachers in Colorado began to record their lectures so they could spend classroom time on increased interaction with students to deepen their understanding. A flipped classroom shifts the classwork (traditional teaching and lecturing) to the home (homework) and then brings the homework to the classroom. It means that teachers can prepare videos of their lectures and post them on a learning platform (or as a simple YouTube video), and then engage students in the class through discussion, group work and other applied learning activities to consolidate the development of skills and competencies.

**Open educational resources**

As discussed in Chapter 3, an open educational resource is any type of resource in any format that is freely available for circulation, use and reuse, and even for modification under specific conditions and subject to the appropriate licensing. OER can be combined to make a new set of OER to adapt to the context in which they will be used. When the OER movement started, the Massachusetts Institute of Technology (MIT) launched the Open Courseware Initiative, whereby MIT professors released hundreds of course materials online. Other initiatives subsequently came along, such as the Virtual University for Small States of the Commonwealth, and the OpenLearn initiative of The Open University, UK.

**Learning management systems (LMSs)**

We refer to these as eLearning platforms. LMSs have been around for more than two decades. There is consensus among practitioners that eLearning platforms have had a significant impact on the increased adoption of distance education and the provision of cross-border education. LMSs are integrated environments that allow teachers to design their courses and to manage the student learning cycle throughout. eLearning platforms can use open-source or proprietary technologies. A popular open-source eLearning platform is Moodle, which is widely used by schools, universities and individuals around the world.

**Massive open online courses (MOOCs)**

Massive open online courses evolved during the early 21st century, and they have now become an integral part of online education and development. MOOCs have radically changed some aspects of online education. They can provide access to a vast number of participants who are geographically distributed and yet can communicate and collaborate via an eLearning platform. MOOCs, by their very nature, support a pedagogical model that requires learners to engage with flexible and autonomous learning outside institutional boundaries, in less formal ways, solely with an Internet connection (Masters, 2011). We have witnessed many initiatives recently with well-known universities hosting MOOCs and offering them for free or for a fee, while in other situations, universities have come together under one umbrella to offer MOOCs on a common platform — EdX and Coursera are two examples.
Immersive learning environments

Immersive learning environments mainly refer to virtual 3D environments that rely on new technological developments such as virtual, augmented and mixed realities, including simulations, to give students the impressions and sensations of a real-world, authentic learning experience. The technology is continuously improving, and VR/AR devices are getting smaller and cheaper, thus making them more accessible for schools and the public. Virtual learning environments (VLEs) have existed for a long time (for instance, flight simulators). However, such technologies were very expensive and generally not accessible in traditional schooling systems. Today, with mobile applications, more powerful computing devices, affordable wearable devices and broadband Internet, such technologies are available to improve teaching and learning environments.

TEL Applications and Challenges in Open Schooling

Although teachers generally come to appreciate the benefits of educational technologies, they often find the initial integration of new technologies challenging (Crossley & McNamara, 2016). The pace of introduction, the user's familiarity with the technology and the accessibility of immediate support are significant contributors to the successful adoption of a new technology. In this section, we take technology to mean equipment and software specifically developed to support education inside and outside the classroom. Open schooling provision encounters several challenges, which can be addressed if TEL is effectively implemented.

The synthesis of ideas at an institutional level on how to educate successive cohorts in TEL environments often precipitates the adoption of practices and approaches that the institution is not yet ready to embrace. Gartner's Hype Cycle for Education 2019, illustrated in Figure 11, addresses this issue.

![Figure 11: Gartner’s Hype Cycle](Gartner, Inc.)

The cycle starts with the innovation trigger, which then mushrooms to the peak of inflated expectations. Disillusionment then follows, and this is where key drivers can determine the success or failure of the adoption. Adequate support and positive messaging are needed to retain stakeholders, who may feel the
prospective outcomes are not consistent with their peak expectations. When the goals of the project are further explained in the new context, sceptics may experience some enlightenment and work towards an agreed productivity level. This then paves the way to broader adoption as the original users become advocates.

The Technology Acceptance Model (Davis et al., 1989) highlights ease of use and perceived usefulness as the most important determinants for the adoption of technology systems. Ease of use can be distilled further into social factors and the levels of support offered to enable stakeholders to embrace technology successfully. Laptops are an example of an increasingly common tool used in education, allowing educators to browse and explore the Internet for fun as well as for professional undertakings. The addition by Moon and Kim (2001) of the playfulness variable to the technology acceptance model is significant. Those who are now more exposed to software through casual browsing usually feel more confident about challenging what is presented to them for use if their preference resides in other tools with which they have gained experience.

Issues of Access to Technology

State-sponsored initiatives that place technology directly in the hands of users are the quickest way to effect technological change within the education system. For example, the government of Jamaica recently pledged to provide 17,500 tablets to schools, with many islands in the Caribbean also adopting a similar approach of distributing devices en masse. However, while two-thirds of students (65%) do homework on a laptop, almost all students (98%) say they still use pen and paper frequently, according to the Global Education Census Report 2018 (UCLES, 2018), an online survey of nearly 20,000 teachers and students (ages 12–19) from 100 countries.

Internet challenges in the home partially explain the continued dominance of pen and paper. The student may receive the device but have insufficient data to enable unlimited browsing. If the system is locked down, with access to only a handful of websites, can the student experience the full benefits of the Internet if they seek to do broader research? The answer is not always to provide an open browsing system, because if there are no blocked sites and a set data allocation is provided, the openness might be exploited and the device used for non-educational purposes; if not misused by the student, it might be abused by older siblings and parents. These scenarios highlight that access may also be a challenge if it is a single-device household, where the student must compete with other family members for time on the device.

Addressing Challenges in Technology Adoption

The COVID-19 pandemic of 2020 has laid bare the challenges of TEL. Debate has oscillated around various claims of social injustice, focusing on access to devices, access to data, and family structures. Regarding open schooling during the COVID-19 pandemic, there was a need to engage younger minds and retain their interest, with and without supervision. Most parents are not trained educators, and most children are not used to doing formal educational activities at home (Dodd, 2020). However, the challenges of stakeholder engagement with "open
learning” can be lessened when participants willingly engage with the process to secure certifications or qualifications.

The forced adoption of technologies during the COVID-19 pandemic does have commonalities with an institution that is preparing its stakeholders to use new technologies. While the settings are different, the challenges — insufficient devices, lack of data, lack of time, lack of buy-in and lack of training — still apply. Tutors are often reluctant to adopt new technologies, many feeling a lack of confidence, digital literacy and technical support (Fosu, 2017; Mishra & Koehler, 2007). These scenarios often result in key stakeholders rejecting the technology and developing resistance against its adoption.

Frequently, the solution is to offer more accessible support. The rollout of any new technology should be accompanied by multiple support channels, catering to different needs and preferences: video tutorials, user guides, messaging on demand. The availability of mobile applications, such as WhatsApp, enables the provision of on-demand support. It allows for the development of support hubs where participants are guided by a technical expert but then quickly become able to support and answer each other. In such scenarios, persons in need of support can consult the group or pose the question in private to the facilitator, without fear of embarrassment. Support for some programmes needs to be on demand, enabling stakeholders to feel confident when using the new technologies in front of an audience, knowing that support is accessible to ensure the lesson or session progresses as intended.

This form of support works well for the end-user, whose queries may be more procedural and can be solved quickly by text, screen share or a short video. It is particularly appropriate when trying to deploy new technologies in rural areas, where participants are first trained in the city or town and then return to their rural areas, charged with imparting their newly gained knowledge. The training process must not be deemed complete after simply conducting a training and sensitisation workshop. Several days may elapse after the workshop before participants re-engage with the technology, so they often will need support to get started again. Rural areas may lack the collective expertise, so reliance on the trained individual is magnified. The support channel should extend beyond the workshop and utilise readily accessible media. This approach has had a significant impact on the Aptus programmes, which are joint initiatives between the Commonwealth of Learning and various ministries of education in different regions.

**Aptus case study**

The Aptus is a low-cost device developed by the Commonwealth of Learning to allow educators and learners to connect to digital learning platforms and content without the need for grid electricity or Internet access. This mini-PC requires only battery power, which can be recharged via grid power or solar charger, as needed (COL, 2018). The device has continually evolved since its launch in 2013 and is now on its sixth-generation model. In out-of-town areas and rural settings, where Internet penetration is limited, the Aptus makes a compelling case for the transformational benefits of technology. When used in a classroom setting, this device relies on an educator to operate it effectively with learners, who can
connect and access digital resources. This approach necessitates confidence in the support process so that guidance can be given, mid-lesson if required, and any issues with the device can be flagged quickly. The Aptus is one way of reaching persons offline with accessible content. Another example is Kiwix, which is free software that provides access to Wikipedia, Project Gutenberg, TED talks and much more without an Internet connection (kiwix.org). Compared with learning to operate new devices, offline access to websites may be easier to adopt, as it utilises existing skills.

The Ministry of General Education, Zambia, supported by COL and Notesmaster, developed content at the junior secondary level and the TVET level for use on the Aptus device. The programme trained 24 teachers and then provided them with continuous support during the 12-month authoring process. Phase 1 involved the development of 3,200 OER by 26 content writers from the Zambia College of Distance Education and schools in Ndola and Luanshya. The official launch of the OER was on 24 June 2018 and was presided over by the Permanent Secretary of the Ministry of General Education. Phase 2 saw the launch of 20 pilot schools/learning centres in Zambia, with an initial workshop attended by 23 centre managers and 21 ICT teachers. Following the launch of the OER, the programme transitioned to the implementation phase. The Aptus device was unknown to the participants at the start of the programme, so due consideration needed to be paid to Gartner's Hype Cycle. Following the Phase 1 launch and the five-day workshop introducing the Phase 2 pilot, the workshop facilitator presented a questionnaire, the focus of which was attendees' overall experiences with the Aptus device and the perceived benefits for them. Participants’ responses to the Aptus devices proved very positive. Phase 2 of the pilot rollout was expected to conclude in July 2020, after which a report on stakeholder engagement with the equipment and the OER was to be produced. The impact of COVID-19 and the resultant closure of the education centres will have a considerable effect on the utility of the Aptus in this context, given that it is a proximity device.

MOOCs in open schooling contexts

The growing popularity of MOOCs can be seen through the high number of enrolments in the MOOCs offered by EdX and Coursera — the most popular MOOC platforms in the world. As an example, an introductory-level course on computer science offered by Harvard University attracted 2.2 million enrolments. Like every digital platform, MOOCs also have some limitations. The mode of transaction in MOOCs is online. Therefore, MOOCs cannot be accessed without a device and Internet connection, which is a prime concern for remote locations and many developing countries. Data show that most of the offline population lives in the least developed countries (LDCs). Around 53.6% of the world’s population are Internet users, but most of them live in developed countries, where close to 87% of individuals use the Internet. In the LDCs in Africa, Asia and the Pacific, on the other hand, only 19% of individuals were online in 2019. Internet connectivity is still in its infancy in remote areas, so learners in these locations face difficulties with accessing e-content online, such as MOOCs. Some other limitations of MOOCs are:

21 See https://www.kiwix.org/.
• **The infrastructure required:** A well-equipped infrastructure along with a trained technical team is required for the design, development and delivery of MOOCs.

• **Financial implications:** Some of the activities involved in the development of a MOOC have financial implications. A few of them are:
  - Cost of preparing teaching and learning materials, assessments, multimedia resources, etc., as well as on-camera presentations by subject experts.
  - Cost of technical and academic review.
  - Production costs, including the price of a studio, set, crew and outdoor shooting, among others.
  - Post-production costs — e.g., for editing.

• **Language barriers:** Generally, MOOCs are developed in the English language, which is a big challenge for learners in multilingual nations such as India and many African countries. As noted by UNESCO, MOOCs have overcome geographical barriers, but language barriers remain. Almost all existing MOOCs are available only in international languages, frequently English.23

The following case study indicates some of the possibilities and challenges for offering MOOCs.

**Case study: The NIOS Diploma in Elementary Education programme**

The National Institute of Open Schooling (NIOS) is the most extensive open schooling system in the world. NIOS is an autonomous body functioning under the Government of India, Ministry of Human Resource Development. Being a national resource organisation for open schooling in India, NIOS frames and formulates self-learning materials (SLMs) and prepares supportive audio/video materials to enhance learning. At present, NIOS is offering 44 MOOCs related to secondary, senior secondary, vocational and teacher training on the SWAYAM portal (a MOOC platform of the Government of India). Quality videos based on school subjects are also delivered through satellite direct-to-home channels. NIOS conducts personal contact programmes at study centres to support learners face to face but also offers a variety of other support options.

The NIOS Diploma is the largest teachers’ training course in India, and perhaps in the world, offered through the online mode. It has set a record of training 1.4 million untrained in-service elementary teachers in one cohort. The Elementary Teacher Education Programme through an ODL system was planned primarily to upgrade the professional competence of in-service teachers in elementary schools. It was designed for teachers who had entered the teaching profession without formal teacher training. The programme through the ODL mode was designed and developed by NIOS with the following objectives:
  - Enable teachers to understand and address diversity in their context.
  - Empower them to improve the quality of classroom processes/transactions.

• Develop their capacity to promote child-friendly, child-centred processes in school.
• Familiarise them with appropriate teaching and learning processes.
• Sensitise them about contributing to the safeguarding of children’s rights.
• Help teachers develop leadership and problem-solving skills among students.

About 1.4 million in-service untrained elementary teachers from 366,894 government, government-aided and private schools across the country registered online for the course, including 770,000 female teachers and about 2,500 physically disabled teachers. The duration of the course was 18 months, starting on 3 October 2017. For the first time in India, a multi-channel digital platform using technopedagogy was used for training a large number of teachers. The NIOS conducted numerous training programmes for 12,000 study centre co-ordinators (heads of nearby schools where untrained teachers were teaching). About 52,000 other stakeholders (state government officials) across the country were also trained through videoconferencing to ensure the effective use of all the multi-channel platforms by the teachers and to assist the teachers at the ground level.

The SWAYAM MOOC delivery portal

All of the teaching–learning materials for the NIOS Diploma in Elementary Education programme were developed and offered through SWAYAM (Study Webs of Active Learning for Young Aspiring Minds), a MOOC platform initiated by the Government of India and designed to follow the three cardinal principles of education policy: access, equity and quality. The entire teaching–learning experience was conducted online using SWAYAM’s four-quadrant approach, as shown in Figure 12.

Figure 12: The four-quadrant model

The learning materials were prepared by a team of experts from different universities and organisations across the country, including internal NIOS faculty, with funds allocated by the Government of India for the development of MOOCs. The course’s e-content and ICT pedagogical approach had been scrutinised by content experts, supervised by the course coordinators and edited by language experts at NIOS before being uploaded to the SWAYAM portal. The courses were accessible free of cost for everyone.
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SWAYAM Prabha – direct-to-home (DTH) channels

There was a need to support and reach out to those who lack access to the Internet. To address this, the decision was made to deliver video content through SWAYAM Prabha DTH channels, which is a group of 32 DTH channels of the Government of India. The DTH channels were devoted to the telecast of high-quality educational programmes, including live interactive sessions on a 24/7 basis using the GSAT-15 satellite. Viewers were able to receive these 32 channels using a standard free-to-air DTH setup box. The broadcasting of educational content is a free-to-air service. NIOS was allocated two SWAYAM Prabha DTH channels to telecast the teacher education programme. NIOS telecast approximately 1,500 video lectures through the SWAYAM Prabha DTH channels, along with about 260 live interactive TV programmes, which were also uploaded to the MOOC platform as well as a YouTube channel.

Flexible delivery channels

To ensure easy learning access, NIOS developed a mobile app using MIT’s App Inventor. This is a free cloud-based service that allows the development of mobile applications using an Android-compatible blocks-based programming language. The mobile app was available on the Play Store free of cost. Through this app, learners were able to access the web portal as well as all the essential information, study materials and audiovisual programmes. To further support learners, a radio programme was conducted by NIOS, with the help of experts, on its radio platform Mukt Vidya Vani; this is a unique educational web radio platform in India and a pioneering initiative of NIOS to use streaming audio for educational purposes.

Concluding Remarks: The Future of Open Schooling in a Technology-Driven World

We identify four key areas that need further research and development.

Access to technology and digital inclusion

Technology can be a game-changer in providing access to educational resources for people living in remote areas (with little or no access to technology or in vulnerable conditions). For instance, satellite communication and digital technologies can improve access to the Internet and digital learning resources in remote regions. In some areas of the developing world, television and radio are still considered vital enablers for open schooling. One example is the Pan African e-Network project, a joint initiative of India and the African Union. It aims to connect member states of the union through a satellite and fibre-optic network between India and member states. As a result, the initiative will enable access to knowledge, education and training in different areas, including the provision of e-education. The project is often described as Africa’s most significant initiative in the ICT sector to date, and it is expected to extend ICT infrastructure to rural and previously underserved areas.
Professional development of teachers for open schooling and through open schooling

In a 2010 article titled “Time for Radical Change in Teacher Education,” Moon argued that it was time to implement new technologies in teacher training courses to focus on the continuous professional development of educators. Moon adopted a very critical view of so-called brick-and-mortar institutions for teacher training, asserting “there is absolutely no way the ‘bricks and mortar’ institutions of teacher training created in the last century will be adequate for 21st-century needs” (2010, p. 10). A decade later, this observation is still entirely relevant, and the COVID-19 pandemic exposed several shortcomings in teacher education systems when a significant majority of teachers could not adequately respond to “emergency remote teaching” needs. Teachers in many developed and developing countries alike were not really prepared and not adequately trained to respond to such situations and modes of teaching. There is a need to reinforce the continuous professional development of teachers to address such gaps as well as open schooling, ODL and technology-enhanced learning design. Digital literacies are also often overlooked during the design of higher-level capacity building. Many teachers still lack the necessary skills to succeed in 21st-century technology-enabled teaching and learning environments.

Resilient quality assurance frameworks

One of the key concerns expressed about open learning and schooling is the need for quality assurance mechanisms that lead to measurable learning outcomes through valid and reliable assessment and evaluation. Allaying these concerns will help improve overall trust in open schooling systems, which will then lead to improved recognition and valuing of qualifications obtained through this mode. Quality assurance frameworks must be familiar and transferable to different schooling systems to ensure the acceptance of qualifications. One such example is the Transnational Qualifications Framework put in place by the Commonwealth of Learning under its Virtual University for Small States of the Commonwealth initiative. COL has further developed the COL-RIM instrument, which is a quality assurance toolkit to improve open learning and schooling practices through ODL. Perhaps initiatives like this could be extended to open schooling provision.

Digital credentials using blockchain technologies

Micro-credentials — also referred to as micro-certification, digital badges or open badges — are indicators of achievement representing the competencies and skills an individual can gain in digital learning environments, whether formally or informally. They are generally used for educational purposes and are in the form of visual representations used to acknowledge and reward an individual’s accomplishment (Garnett & Button, 2018). In education, as well as in professional learning environments, micro-credentials allow educators and employers to recognise the effort of their students/staff by awarding digital badges. As Grant (2014) pointed out, an open digital badge is a simple credentialing tool that creates ways and opportunities for learners to explore different learning experiences while recognising and rewarding them using a digital badge system. When a learner demonstrates their competency in something, they receive a
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digital file with a badge representing a micro-credential. So learners working independently can receive recognition for their learning without requiring in-person access to a teacher. The micro-credential certifies that certain competencies or knowledge have been mastered. With the emergence of digital badges, learners can demonstrate they have mastered specific skills. With the emergence of technologies such as blockchain, the integrity of micro-credentials can be preserved, increasing individual and institutional trust in this form of recognition. Such micro-credits can be used to certify that learners have achieved specific outcomes and acquired essential competencies. Within a lifelong learning context, learners can gradually accumulate micro-credentials or badges that convert into university credits applicable towards the earning of formal degrees.

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Abstract: Monitoring and evaluation (M&E) is essential to all forms of educational interventions to ensure efficient delivery, effective outcomes and long-term impact. The intention of open schooling is to increase access to quality education, and M&E is vital to ensure this goal is met. Open education interventions for youths and out-of-school children provide additional challenges for the M&E practitioner, programme implementer and related stakeholders. Contact with stakeholders and beneficiaries for regular M&E exercises, consistent communication with implementers and stakeholders, and rigorous data collection need to be planned and executed, knowing that stakeholders may be diverse and dispersed, that traditional methods of M&E may be too costly or impractical, and that feedback to project implementers needs to be relevant and practical. This chapter discusses the intent of M&E, the importance of integrating M&E into a programme’s planning stages, and the significance of designing M&E activities to suit the programme.

Introduction

Many years ago, researchers pointed to the increase in open and distance learning (ODL) due to the growth in technology-enabled and assisted learning (Bishop & Spake, 2003). Moore and Tait (2002) argued that it had become more accepted alongside mainstream educational programmes, and the Commonwealth of Learning (COL, 2010) emphasised meeting the needs of people no longer in schooling or with no access to schools. Recently, the World Bank estimated that 260 million children are out of school (World Bank, 2018). Open schooling has been positioned to meet the diverse needs of countries, children and youths facing barriers to education (as well as illiterate and undereducated adults).
“These forms of educational delivery have come to stay, and many countries are looking at open and distance learning as a major strategy for expanding access, raising quality and ensuring cost-effectiveness” (Moore & Tait, 2003, p. 10). Qayyum and Zawacki-Richter (2019) present multi-country data demonstrating this remains the case — that open and distance learning (ODL) providers are seeing growing enrolments as the demand for education grows globally, but also as ODL becomes mainstream and digital platforms become more pervasive.

Monitoring and evaluation (M&E) is an essential component of any programme design process, whether it is a short-term project or long-term policy implementation (Li & Chen, 2019; Lim et al., 2019). Constant review of programme content and methodology must take place to improve or institutionalise and replicate the programme. If something works, it needs to be shared; and if something is uncertain or ineffective, changes must be made as soon as possible. As Panda and Garg (2019) note in India, with a growing demand for education but little increase in public expenditure, stringent quality monitoring is vital. This is necessary for cost efficiency but also has socio-economic and development implications for the beneficiaries of the programme — the students and the country. There is little to be gained from implementing a well-intentioned programme that is not tested and evaluated. The lack of some form of evaluation of an educational programme or method intended to positively impact national developmental imperatives may undermine the (often extensive) costs and resources invested.

**Monitoring and Evaluation of Open Schooling**

Large donor and support organisations often insist that monitoring and evaluation (M&E) activities be incorporated into funded programmes, frequently with a requirement to dedicate a percentage of the budget to M&E activities. There are also increasing requirements from governments that education institutions account for amounts spent on education programmes and measure the costs against the social, economic and development impacts promised. This may be in the form of audited budgets from a finance office to dedicated planning, monitoring and evaluation offices in governments. While the institutional requirement for M&E is clear and often accepted, its practical implementation may pose challenges.

Open schooling is often implemented due to a government-identified priority and policy requirement and/or private sector developments. In either case, funding is central to setting up the programme. Roser and Ortiz-Ospina (2020) point out that while many developing countries’ expenditure on education was like that of developed countries by 1990, overall development assistance for education has slowed. Specifically, Steer and Smith (2015) illustrated declining funding assistance between 2010 and 2013, whereas before 2010, the rate was increasing. The share of development aid directed to primary education declined from 52% in 2002 to 30% in 2013. At the same time, the total out-of-school children proportion in the region increased from 46% to 57%. The change is mainly due to donors shifting their assistance to higher levels of education, as well as a general decline in aid for education.
The high cost of programme design and development (with the payoff only coming in the longer term), together with the reduced funding for education initiatives globally, make it essential that costs be efficiently and effectively utilised. Regardless of level, the sources of funding are different and have different conditions attached. These may include country-level impact assessments or effectiveness evaluations, or donor-level requirements.

Cost-benefit conclusions from programmes are not the only reason M&E is essential to projects. The other driving forces include being able to demonstrate accountability to stakeholders, which include donors/funders and, very importantly, the beneficiaries of the project. M&E is also necessary to ensure the constant and timely improvement of a programme. If time and resources are valuable, they need to be used where most effective. Formative evaluations as the programme is being implemented are essential for making changes as the programme rolls out (Dixon & Cusack, 2016). The lessons learned from the programme can be documented and shared widely with M&E activities. This ensures additional stakeholders in other educational programmes or countries — arguably the extended beneficiaries of all education programmes — will be able to learn from these past experiences.

As Kusek and Rist (2004, p. 117) summarise, evaluation enables decisions to be made on strategy, operations and learning:

- Strategy: Are the right things being done? Is the rationale or justification correct, and is there a clear theory of change?
- Operations: Are things being done right? Is there effectiveness in achieving the expected outcomes? Is there efficiency in optimising resources? Is there client satisfaction?
- Learning: Are there better ways? What are the alternatives? What best practices and lessons have been learned?

It is clear that information and data are necessary for monitoring, evaluating and improving education systems and programmes. This information is not always available, however. As the World Bank (2018) found, of 121 countries assessed on their ability to monitor progress toward the Sustainable Development Goals, one-third did not have information on the last year of primary school performance. Even fewer had the information to track performance over time. Yet this information is essential for making public policy, so the challenges of data collection must be overcome.

**M&E for continuous improvement: the challenges of M&E for open schooling**

Access to education is not the only goal open schooling aims to achieve — access to quality education is important. There is a greater pressure to hold education providers accountable (Mahlangu, 2018). Children may have access to education but not be learning (UNICEF, 2019; World Bank 2018). UNICEF’s equitable access to education goal specifically aims to assist governments to “improve the quality of public expenditure [on education] — more equitable, more efficient, more effective.”
Similarly, COL’s Open/Innovative Schooling Strategy 2015–2021 (COL, 2015) consistently focuses on quality of education, content and technologies. Systematic M&E is required to assess whether these goals are met and to what degree, as well as what is working. It is essential that the measurements suit the situation and be taken at the right time, and that feedback be provided in time for change and decisions to take place. Practically, this means that access to education needs to be tracked through measures such as enrolments and throughput rates, but so does the quality of the education through pass rates, standardised measures against national and global peers, the relevance of the learning to the needs of the country, and learners’ ability to continue learning.

Measuring success is not straightforward, however. Global measures such as the OECD’s Programme for International Student Achievement (PISA) measures 15-year-olds’ ability in mathematics, reading and science every three years. The intention is to assist policy makers with a set of data on students’ performance to check against policy decisions and thereby allow changes to be made (Schleicher, 2018). A 2018 report on PISA results found that over ten million students in high- and middle-income countries did not reach the levels of basic reading, which was then explained by the students’ socio-economic circumstances. With respect to country-level performance, the lowest-performing countries’ levels were found to be three years lower than the best-performing countries, despite increased expenditures on education. But these large findings obscure the details in the reports that may prove useful. Each country should disaggregate student performance data according to socio-economic circumstances in order to learn how well it is educating its children who live in straitened circumstances — both in comparison with previous years’ performance in that country and with other countries’ performance. The data that countries can, and should, collect on performance are important indicators of progress (Schleicher, 2018). Of course, global measures such as PISA need to be balanced against existing data.

In a letter published in The Guardian (a leading UK newspaper) on 6 May 2014, over 80 academic experts raised concerns about the impact of PISA reports on governments’ policy making. The authors argued that an over-reliance on PISA data was the primary reason for educational policy results in countries working only to achieve better PISA results. This approach illustrates excessive dependence on quantitative data, an unquestioning following of standardised tests that may not always be valid, and a restrictive focus on what education should contain (The Guardian, 2014). So while it may be reassuring and convenient to be able to utilise global measures, these need to be balanced against data that can be used in-country to determine outcomes.

In addition to checking the validity of data collected to measure performance, the data’s reliability must also be assessed. Open and distance learning is mostly focused on cohorts of students who cannot access formal schooling — out-of-school, vulnerable, distant students. The use of distance and open schooling is not the only factor that makes these students different to those in formal schools (which are often able to track and monitor students far more easily). The reasons behind needing open and distance schooling are often circumstances that also make commitment to and continuance in education problematic. It is exceptionally difficult to follow cohorts of distance and open schooling students, as many students drop out, stop out, change service providers and/or do not
take full curricula (T. Mays, personal communication, 2020). They may drop out, not complete levels, or require additional support that is not available. It is therefore difficult to monitor performance and socio-economic issues that link to educational performance. This also makes it difficult to compare these students to those in formal schooling.

The above challenges are even more significant for female students. Women have frequently been barred from education due to poverty, economic exclusion and cultural practices (Rahman & Yeasmin, 2013). Female learners often drop out, thereby increasing the cost per capita of providing OS programmes. With many emerging economies focused on increasing girls’ and women’s access to education, programmes must be developed to meet this need, and monitoring and evaluating their efficacy is essential.

An additional area to note is the lack of M&E skills and capacity in institutions. As Chaudhary et al. (2020) found in an investigation of challenges faced during internal evaluations in nonformal education contexts, the main difficulties are: limited time and resources, inconsistent or limited appreciation of the value of evaluations (see a later section on the challenge of collecting data that are not used), evaluations being “added on” to a programme rather than conceptualised as part of the whole programme, and limited buy-in from superiors or project management teams, which is likely to lead to a lack of time and resources.

Despite the challenges of data collection and analysis, it is essential to measure progress to determine the success or deviation of programmes. The data to be collected need to suit the needs and outcomes the country is trying to achieve, should be collected frequently enough to enable meaningful changes, and must be reliable enough for comparing various means of education.

Open schooling, with open educational resources, open methodology and open practices, is part of a broader open movement started many years ago. The philosophy of openness should inform the objectives and approach of M&E activities — openly sharing knowledge, lessons learned and methods used (Atkins et al., 2007). In this way, the data measured in each setting can be used to improve programmes as they are rolled out and be factored into programmes before they are implemented.

**A results-based framework**

In 2004, Kusek and Rist of the World Bank published *Ten Steps to a Results-Based Monitoring and Evaluation System*, an influential resource for governments and organisations wishing to implement an M&E system to ensure improvement in their projects. As the demand for accountability and success increases, so does the need for a systematic and rigorous way of monitoring and evaluating projects. The results-based approach is powerful because it focuses on looking for results that indicate whether the outcomes and impact of the project have been reached.

Moore and Tait (2003) define open and distance learning as a focus on open access to education and training, at any time or place, with flexible opportunities for learners. Importantly, they refer to OS as a “focus,” indicating it to be an intention and philosophy rather than one singular or formulaic action. The features of OS make it well suited to include M&E in its activities. Kirilova (2019), in a discussion of OS in Russia, describes “openness” as a learning opportunity being
accessible to all learners, with materials open to all to use (and often to modify), and the educational space being available for scrutiny and change. Inherent in the definition of OS, then, is the philosophy of improvement, development and sharing. In many ways, this mirrors the intention of M&E — a process always being adapted or modified, using constant monitoring of a variety of stakeholders (or data points), with the intention of consistently improving to ensure a better outcome.

Similarly, the openness features of OS as well as its intention to reach as many people as possible, using a variety of platforms, with constant improvements also pose a challenge to designing M&E activities. For instance, an OS system that is provided using an online platform may make it difficult to track users and their performance and to communicate with them to learn the areas of the project that make it successful. It is easier to reach learners in a face-to-face classroom, but OS is, of necessity, flexible, adaptive and malleable. M&E systems need to be developed to suit this philosophy.

**M&E must suit the context**

In formalised educational settings, there are various points in time when information and performance are measured — quality assurance of materials, teacher training statistics, learner performance. Ministries of education are best placed and designed to collect and analyse these data, and the greatest improvement and development comes when the data are used to determine the efficacy and efficiency of the whole system working as an ecosystem. Hence, ministries and institutions implementing any educational programme must ensure their data are valid, reliable and relevant. Poor data are worse than meaningless; they are a wasted opportunity to ensure improvement.

As outlined in other chapters in this book, OS is diverse in its format, implementation and application of educational frameworks. The scale and nature of OS will impact the M&E strategy that is designed to accompany it. Regardless of the education method, it is essential to ensure the M&E practices meet quality criteria. An important first step is that the M&E strategy begins as the programme is being conceptualised (or as soon as possible thereafter). This ensures it is matched to the programme from the start, that resources are appropriately allocated and that a feedback mechanism is included.

M&E strategies can be diverse and must suit the context and features of the programme. As McCall and Green (2004) point out, the “gold standards” of experimental and double-blind techniques are not always practical or feasible in all developmental contexts, nor do they provide the most useful evidence. The results-based approach moves away from strict scientific research to enable methods that focus on the context of the programme, and the intended results, outcomes and impacts of the programme. Kusek and Rist (2004), as well as Farrell, (2009) and UN (2018), argue for a results-based framework which can be adapted to suit most programmes. The process is systematic, rigorous and integrated into the programme plan. In this way, the M&E strategy is a balance of methods suited to the context — not so scientifically experimental as to be inaccessible but not as simple as a compliance-type tick-the-box exercise of whether activities have taken place.
Lim et al. (2019, p. 98) give the example of the guidelines for evaluation that were implemented at a university in China. They recommend evaluating the following aspects of a programme: vision, mission, values and goals; assessment and evaluation; educational resources; leadership, governance and administration; IT infrastructure; financial resources; teaching and learning; curriculum and course development; student support; faculty and staff; and research.

**Developing an M&E Strategy**

Open schooling is not a homogenous concept. It can be variously applied, depending on the setting and need it is trying to address. Therefore, there is no one-size-fits-all programme design for open schooling M&E. There are, however, some foundational concepts that are useful across all projects.

**Theory of change**

The intended purpose and goal of a programme will direct all other activities. The programme design must fit this goal. Each step towards this goal can be tracked and measured, but so can the process being followed to get to the goal. Each programme has a theory of change, whether explicit or implicit. An explicit theory of change is the “formula” or theory that is followed to get to the goal. What needs to be in place for OS success? What assumptions are made? What research are these based on? Why is the programme necessary? What problem is being solved? Is this a relevant problem that needs solving?

M&E assists in the design of this theory, or at least evaluates the programme against the theory to test its effectiveness. Does the theory of change work? If, for instance, programme designers cannot outline what success looks like, then this indicates that the manner and design of the programme is not clear.

A theory of change is necessary to show the logic of the programme, the assumptions the programme is based on, and the link between the impact the programme wants to achieve and the inputs, activities and outputs required for success (UN, 2018).

The long-term goal needs to be clearly stated. This may be sustainable education through access to quality open schooling for girls and women. If this is the ultimate outcome, a stakeholder analysis and situational analysis of the factors and characteristics of the environment would identify the barriers and constraints to such a goal (UN, 2018). For instance:

- What are the economic barriers to education? Are they different for women and girls?
- What are the social barriers?
- Is there a clear policy framework in place?
- Are there resources to implement the programme? Financial, human resources in institutions, and skills? Operational and technical resources?

The above is a theory — to be proved or disproved through implementing the programme. The theory would then become good practice or need to be modified. All through the programme cycle, the theory needs to be assessed for what is working and what is not.
The UN’s handbook on results-based management (2018, p. 19) lists seven steps in developing a theory of change:

1. Identify long-term goals and the assumptions behind them.
2. Conduct backward mapping, connect the preconditions or requirements necessary to achieve the goal, and explain why these preconditions are necessary and sufficient.
3. Identify your basic assumptions about the context.
4. Identify the interventions that the initiative will perform to create the desired change.
5. Develop indicators to measure the outcomes and assess the performance of the initiative.
6. Conduct a quality review: Is your theory (a) plausible, (b) doable (or feasible) and (c) testable?
7. Write a narrative to explain the logic of your initiative.

Results framework

Once a theory of change has been set out, the programme plans and actions can be set out. At each one of the stages — planning, implementation, results and outcomes — monitoring and evaluation activities will demonstrate whether the programme is on course or needs modification. And because it is a theory of change and not a set formula of change, the theory can be adapted.

In 2009, COL published a handbook titled *Results-Based Monitoring and Evaluation at the Commonwealth of Learning*, outlining the rationale, processes and steps COL follows to use this approach in all programmes (Farrell, 2009). The programme development cycle follows a course of learning and improvement, as illustrated in Figure 13.

![Figure 13: Developing a programme](image)

Farrell (2009) describes the steps of programme planning as follows:

**Step 1 – Needs and readiness assessment**

Before developing a comprehensive theory of change, the needs and characteristics of the context must be investigated. What is the problem that is
being solved? What are the barriers and obstacles that need to be addressed? What resources are in place to enable this to happen? And what must be provided?

There are various ways of undertaking a needs analysis, including policy document review, academic research, stakeholder interviews, a review of educational performance, a SWOT analysis (strengths, weaknesses, opportunities, threats) and a PESTLE or PESTEL analysis (looking at barriers and challenges — political, economic, social, technological, legal and environmental) (see, for instance, UNICEF’s outline and toolkit for SWOT and PESTEL [UNICEF, 2015]). Regardless of method, the intention is to gather information to inform the programme development.

A useful diagram to start determining the needs and barriers of a particular context is provided by the World Bank (2018, p. 191) in their discussion on policy evaluation (see Figure 14). The diagram places learning at the centre and then considers all the competing factors that may inhibit or be necessary for the programme (all blocks are likely to have both inhibiting and supportive features).

![Figure 14: Different interest groups in learning](World Bank, 2018)

**Step 2 – Programme design and planning**

Once the goals and impact of the programme have been set down, the inputs, activities and outputs can be listed and set out. These will form part of the programme plan, often called a workplan. As the activities are explained, each one can also be monitored and evaluated to check whether their implementation is occurring as planned and is effective. It is efficient to design the M&E activities
alongside the implementation activities. In this way, they can be planned for and costed, resources can be allocated, and their results can be fed back into the programme plan.

**Step 3 – Programme implementation**

The workplan can now be carried out, including all M&E activities. It is important to note that these activities need not be extensive or expensive. Monitoring measures may include data such as photographs, attendance sheets, delivery notes and so forth. Evaluation measures may include feedback calls, beneficiary rating scales or similar “dipstick” measures for quickly ascertaining effectiveness. The M&E activities can be carried out by the implementers or beneficiaries. If they have been planned for in the programme design phase, they can be implemented with little cost and time.

**Step 4 – Programme evaluation and reporting**

As the programme is implemented, an in-depth assessment or evaluation of the programme must be carried out. This enables decisions about the continuation or modification of the programme to be made. Progress reports can be provided to appropriate stakeholders. This does not mean that reports should not be made as the programme is implemented. These are necessary to demonstrate accountability for policy makers, programme team leads and funders. However, the larger, more in-depth reports should also include recommendations on changes to be made.

**Defining Monitoring and Evaluation**

**Choosing data and the indicators of success**

Before discussing the significance of M&E in OS, a point needs to be made about indicators and data. A well-designed M&E framework or strategy will include tools for data collection, with specified dates, data sources and analysis techniques. However, the practical realities of implementation “in the field” often create challenges for project teams. In the two sections below, specific indicators are mentioned. Indicators are set as the project starts: What needs to be measured? How does this link to the theory of change? For instance, if an OS programme is being piloted, then the following are examples of some indicators that may be useful:

- Indicators of count, such as number of female students enrolled, number of female students passing the course, number of students progressing to the next level.
- Indicators of activities, such as number of teachers trained, number of coaching sessions held.
- Indicators of quality, such as number of quality courses approved by the authority, number of distance policies accepted.
- Indicators of outcome, such as number of teachers’ union-approved HR policies implemented.
Indicators are important, as they provide a clear guide for what will be measured. Often, they are associated with monitoring whether something has taken place. But the inclusion of quality elements in the statements allows for the quality of what has been provided to be measured. It moves M&E away from being merely a compliance requirement, a box-checking exercise, into an evaluative component to answer the questions “Does it work?” and “Why or why not?”

There are, however, challenges and pitfalls to watch out for in data identification and collection, which may be exacerbated in an OS situation. The World Bank (2018) lists the following areas where data may be problematic — illustrating that it is as important to be aware of both the validity of the data (is it measuring the right thing?) and the reliability of the data (is it measuring what I want in a consistent way?):

- **Poor measures are chosen.** There is a risk that data, indicators and tools for M&E are chosen at the start of the project to illustrate its success. This may lead to some project participants/contributors being “let off the hook.” For instance, an attendance register that is signed at the start of a session does not indicate levels of understanding and participation, thorough attendance or the ability to apply what was said in the workshop. Similarly, a programme evaluation that does not consider the usefulness of programme monitoring reports in terms of their quality and ability to lead to programme changes will result in much report writing and little action or accountability for the project management team.

- **Too much data.** Linked to the above, it is often the case that a lot of data are collected from projects but not presented in an organised format or with sufficient insight to ensure the data can be utilised. For instance, it is often better to have one in-depth, critical and objective evaluation of a project than reams of attendance registers of training sessions.

- **Distance creates data challenges.** OS often has a distance element to it, requiring that information transmission and engagement occur online or via other forms of technology. Without a face-to-face setting, there is the difficulty of reaching data sources, and some ingenuity is required. It may be hard to ensure the validity of data sources — for instance, interviews and assessments done online — as there is no way to ensure the person responding is the appropriate one. This then points to the need to have multiple sources of data to check for accuracy. Distance creates a financial challenge, as it would be expensive to track down members of distance or online communities in person. Online surveys, Skype calls or similar arrangements can be used.

To ensure the most reliable and valid indicators and data are chosen, it is necessary to design a strong M&E framework. This means that the framework should be developed alongside the programme plan, that indicators should be debated and discussed by all participants (including beneficiaries), and that data sources, tools and collectors should be established at the project’s inception. In addition, as per the philosophy of OS and quality assurance, data feedback and decision making need to be included in the plan. How will the data be used? Who will review it? How will decisions be included in revisions?
Quality monitoring

Monitoring within an M&E framework is often the most used portion of the framework but does not necessarily generate the most useful data. Monitoring exercises may indicate that a programme is being rolled out, but they do not indicate the quality of the programme or whether changes could be made to make it more efficient. Therefore, while we assume that OS aims to achieve quality education, we must similarly ensure that the monitoring will be of a quality that can assist with informed decision making.

The features of good monitoring include the following principles:

- **It is planned** for at the start of the programme. It is important to document who will undertake the monitoring, when, and what tools will be used.
- **It is continuous.** One-off monitoring may be too late. Monitoring the number of learners who pass a grade level does not indicate the number who enrolled, who dropped out, their engagement with the OS materials and so forth. Quality monitoring tracks the roll-out of planned actions from the start (Farrell, 2009; WHO, 2019).
- **It is relevant.** The tools and the data being measured must be relevant to the goals of the programme — for instance, measuring pass rates for a course against other education forms to compare effectiveness.
- **It is systematic.** Tools are used to collect data at set points, at certain points in the programme’s roll out, and against set indicators (Farrell, 2009).
- **It is easy to administer.** Tools and monitoring can be administered and carried out by a variety of stakeholders, so they must be simple and easy to use. For instance, the community is often a valuable and credible source of monitoring data (UNICEF, 2019) but would need to be able to assist easily.

Farrell (2009) points out that monitoring tools needs to answer the following questions:

- Based on evidence, should the programme proceed or be adapted?
- Are the results in line with what was expected at that point in the programme?
- What revisions need to be made to get the programme back on track or improved?

In short, then, monitoring is the collection and analysis of information about a project or programme, undertaken while the project/programme is ongoing. It focuses on tracking whether inputs and activities are proceeding as planned and whether the planned outputs are being realised.

Quality evaluation

The dictionary definition of evaluation includes the elements of judgements, opinions and weighing up of value after due consideration (Cambridge Dictionary, n.d.). The W.K. Kellogg Foundation (2017) defines evaluation as what it aims to achieve, in effect, an improvement in a programme due to a review of the evidence. The foundation emphasises the intention of evaluation to be improvement, learning what works and what does not work, being able to make informed
decisions, and having evidence of change. This is counter to the dictionary definition of merely making a value judgement. To be useful, credible and powerful, evaluation must be systematic — which means it must happen at regular intervals (not be a one-off exercise) and be orderly, valid and reliable (WHO, 2019).

The foundation provides a useful table (see Table 6) for distinguishing between the types of evaluation that can happen in a programme: performance, formative or summative.

Table 6: Types of evaluation (W. K. Kellogg Foundation, 2017, p. 27)

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Performance monitoring</th>
<th>Formative (process) evaluation</th>
<th>Summative (outcome) evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>Monitors and reports on progress towards the goals. Is an early warning if the programme is going off track.</td>
<td>Checks to see whether the programme is running as planned and whether the outputs are being produced, and identifies strengths and weaknesses of the rollout.</td>
<td>Evaluates whether the programme has resulted in the desired outcome and what make it effective or ineffective. Assesses whether the programme is sustainable.</td>
</tr>
<tr>
<td>Examples of Questions</td>
<td>Have activities taken place as planned? Have the products or services been generated?</td>
<td>Has the strategy and programme been implemented as planned? What has worked or not worked? Why? What needs to be improved? How?</td>
<td>What changes did the programme lead to? How did the programme contribute to the changes? Are the changes likely to last/be sustainable?</td>
</tr>
<tr>
<td>Timing – when should it be done?</td>
<td>Throughout the programme.</td>
<td>At the start of implementing the programme, with enough time for adaptations to be made if necessary.</td>
<td>When immediate outcomes are expected, as the programme becomes stable or more long-term.</td>
</tr>
</tbody>
</table>

The OECD recently adapted their evaluation criteria (2019). These criteria provide a framework for the principles or standards to measure a programme. Table 7 below summarises these new, refined criteria. If the main question that we ask of a programme is “does it work?” then the evaluation criteria break down what we really mean by this: is it efficient, effective, relevant, coherent and sustainable, and does it have impact?

Table 7: The OECD evaluation criteria (OECD, 2019, pp. 7–12)

<table>
<thead>
<tr>
<th>Evaluation criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency: How well are resources being used?</td>
<td>The extent to which the intervention delivers, or is likely to deliver, results in an economical and timely way.</td>
</tr>
<tr>
<td>Effectiveness: Is the intervention achieving its objectives?</td>
<td>The extent to which the intervention achieved, or is expected to achieve, its objectives and its results, including any differential results across groups.</td>
</tr>
<tr>
<td>Relevance: Is the intervention doing the right things?</td>
<td>The extent to which the intervention objectives and design respond to beneficiaries’, global, country and partner/institution needs, policies and priorities, and will continue to do so if circumstances change.</td>
</tr>
<tr>
<td>Coherence: How well does the intervention fit?</td>
<td>The compatibility of the intervention with other interventions in a country, sector or institution.</td>
</tr>
<tr>
<td>Sustainability: Will the benefits last?</td>
<td>The extent to which the net benefits of the intervention continue or are likely to continue.</td>
</tr>
</tbody>
</table>
In short, then, evaluation is the systematic and objective assessment of an organisation, project, policy, or programme that might be conducted internally or by external independent evaluators. It focuses on the outputs outcomes and impact achieved to help judge whether the initiative is yielding the described effects. It informs judgements about whether the theory of change is valid or needs to be amended or recast.

**Who collects the data?**

Evaluation methods must suit the context and goals of the programme. The development of the tools will then proceed from there. A variety of stakeholders can implement or administer the tools. For instance, in OS, a school inspector or official may undertake structured telephone or electronic interviews with beneficiaries (students, parents, facilitators, developers, etc.).

Mohanachandran and Ramalu (2013) point out that the use of more technology in open and distance learning means that we need to be more vigilant, ramp up, and ensure our M&E is rigorously undertaken. If open schooling is done remotely, there is the additional challenge of reaching beneficiaries. Technology adds a further barrier that needs to be overcome for M&E activities. But as Mhlangu (2018) points out, this too may be leveraged for feedback. Usage data, feedback mechanisms, comment boxes and text responses can all yield feedback on the content and the quality of learning, and provide a contact person for following up in the longer term.

The essential point is that it must be **triangulated** — the data need to be validated. If a finding comes from one set of beneficiaries, it needs to be tested against other sources of data.

**Quality assurance as part of M&E: a specific and necessary inclusion in all programme design**

Open schooling is multifaceted, and all aspects of it require M&E. One of the most institutional or accepted forms of evaluation is the quality assurance process for the content and materials of most educational programmes. Once a theory of change has been developed, the “inputs” and “activities” of the programme need to be of high quality to ensure student and programme success (Cameron, 2015).

Arguably, this is the easiest and most familiar form of evaluation in OS. Traditional or mainstream education overall has quality assurance built into its process through a formal procedure of accreditation by a service provider or quality assurance entity (whether government based or run by another form of authority). COL has created a resource book of quality assurance policies from ten institutions — *Setting Standards, Maintaining Quality: Quality Assurance Policies for Open Schooling* — that can inform such practices.

**Conclusion**

M&E is essential for improving OS programmes and determining their impact, as the strategic imperatives of such programmes are socio-developmentally significant. The impact of OS should be illustrated and seen in indicators such as enrolment, educational attainment, greater access to learning as and when
needed, and in the longer term, socio-economic development of the community and country in which it is located. The pedagogic and socio-developmental imperatives of open schooling are discussed elsewhere in this book. This chapter focused on the necessity of having a systematic and rigorous M&E strategy in place to ensure programmes meet their objectives or adapt fast enough so as not to waste valuable resources in the process.

With the greater attention on and pressure for accountability in OS activities, there is a need to build internal/implementer M&E capability. Porter and Goldman (2013) acknowledge the need for this quality M&E evidence but note that there is a greater ability to supply monitoring information than to collect evaluation data. In addition, there is little capacity to demand quality M&E evidence from internal stakeholders and external suppliers. The authors conclude that there are more incentives in place to provide basic monitoring data than to interrogate and apply evaluation findings to projects. The challenge is to move from basic compliance monitoring to evaluations, using existing and new data to create implementable improvements in programmes.

References


**Abstract:** Open schooling (OS) plays a significant role in the development agenda of many developing nations because it bridges a gap that cannot be addressed through the conventional system. OS serves as an agent of change in transforming the lives of millions of young people who are out of school. The primary purpose of this chapter is to present financial models that are appropriate to enable OS to be more accessible and sustainable without compromising on service delivery. There is a growing demand to establish new open schools as well as strengthen the existing ones, and some practitioners may have little knowledge of and background on the various models for financing. There is no doubt that the success of OS in many countries is dictated by the amount of resources devoted to this sector to achieve its mandate. It is increasingly important for policy makers, political leaders, government ministry officials, and open distance and eLearning and OS researchers and practitioners to have a better understanding of how OS contributes to the development agendas of many nations and why appropriate funding is paramount to achieve that agenda. The chapter presents the importance of funding OS because of its potential to provide equitable learning opportunities to young people who otherwise would not be reached. In addition, the chapter discusses various funding models and diverse revenue sources.

**Funding for Open Distance and eLearning (ODeL)**

There is a general perception that the provision of education through ODeL has some economic benefits. The common assumption is that providing this form of education is necessarily cheaper than offering similar services through the conventional education system (Ally & Samaka, 2013; Du Plessis, n.d.; Pakdaman et al., 2019). For example, through this mode of education delivery, learners will not incur the high cost of acquiring textbooks or the daily costs of travelling to tutorial centres. From the institution's side, no permanently appointed teachers
or physical facilities are required, so this approach could be beneficial for the allocation of government resources. Fixed-term contracts based on hourly rates for tutors, content developers, content and language editors, graphic designers and others can result in open distance eLearning institutions having a small cohort of full-time academic staff and thereby saving on costs relating to fringe benefits (Griesel, 2016). Young et al. (2010) state that for teacher training offered through distance learning that attracts a reasonable number of students and has a high success rate, the cost per student is lower than for conventional teacher education. As noted in Chapter 3, the sharing of costs in the design and development of open educational resources (OER) can also reduce the unit cost and significantly improve and enrich the resulting learning materials.

Recently, there has been a paradigm shift from the traditional distance education approach of increasing access, to a more balanced approach of widening access and at the same time striving to achieve the best possible quality so that access leads to success (Pakdaman et al., 2019). However, the argument that distance education is necessarily less expensive may be based on looking at the operational costs that are mostly financed by governments, but neglecting capital costs that relate to infrastructure, the development of course materials and, increasingly importantly, the acquisition of equipment for implementing technologies (Hülsmann & Shabalala, 2016). Nonetheless, the provision of education through ODeL might be cheaper than through the conventional system if a reasonable number of students are enrolled to benefit from economies of scale (Griesel, 2016).

Enrolling large numbers is not always possible and practical because this form of education provision has a unique mandate to open up opportunities for those who are left behind, so there is often the need to cross-subsidise important small courses from surpluses generated by scaled courses (Belfield et al., 2019; Du Vivier, 2008). The perception that ODeL is necessarily more cost-effective than traditional face-to-face education has led to ODeL receiving less government funding. Governments are more interested in institutions widening access, improving quality and at the same time reducing cost (Daniel & Uvalic-Trumbić, 2011). This kind of situation is putting immense pressure on ODeL institutions to increase enrolment and in the process, compromise on service delivery and throughput rates (Abrioux, 2009; Murangi, 2009).

Several countries have implemented open schooling, or are taking the initiative to do so as a means of addressing the challenge of increasing access to secondary education. Open schools employ ODeL as their primary method of provision. However, an open school requires a substantial amount of government subsidies for its programmes to remain accessible and inclusive to all those in need of such programmes. A significant number of learners are progressing through the conventional primary school system, but the limited number of spaces at the secondary school level makes the creation and expansion of open schooling at this level critical if countries are to make any significant progress towards achieving Sustainable Development Goal 4. In developing contexts, the national budget is often too constrained to support significant further expansion of traditional schooling. Therefore, in many countries, open schools have been established to cater for the junior and senior secondary levels for out-of-school youths as well as adults who cannot be served by the conventional school system (Abrioux, 2009; Murangi, 2009).
Funding Models for Open Schools

Though most open schools are funded by governments, each country may employ a different approach to funding. In fact, open schools are varied, with some offering alternative programmes, some being complementary to the conventional system, and others offering a mix of programmes across disciplines (Abrioux, 2009). Therefore, a one-size-fits-all approach to funding is not possible, so it is important that open schooling systems in different countries decide which method of funding will be feasible for their sustainability. However, it is paramount that each funding model improve efficiency, enhance quality and ensure ultimately positive student learning outcomes (Hearn, 2015). Du Vivier (2008) explains the following four broad approaches to the subsidisation of ODeL institutions or open schools that may be considered:

- normal budget negotiations
- budgetary framework document
- funding formula
- service-level agreement

Normal budgeting negotiation is an intense process dealing with competing demands, and some areas may suffer due to budget cuts while others receive substantial amounts from the ministerial allocation. Ministries responsible for education and training are mandated to ensure lifelong learning opportunities for all. However, those in positions of power, whose education was probably received through traditional campus-based provision, may tend to lean more towards prioritising funding for the conventional forms of education as their core business, while disciplines such as ODeL, adult education and library services may be placed at the periphery when it comes to funding. This approach to funding has the advantage of greater security for funding, though the allocation might not be in line with budget estimates (Du Vivier, 2008). Through this approach, institutions may also experience substantial budget cuts due to economic hardships or competing demands, which can easily jeopardise institutional stability.

Du Vivier (2008) explains that a budgetary framework document outlines activities or plans for what institutions will do for a particular year, with cost estimates for those activities. This form of funding can also be linked to an institution’s strategic plans. This funding model requires ODeL institutions to make a compelling case to the ministry or funding agency that the proposed activities with cost estimates are in line with the institution’s mandate and add value to justify funding. This approach has the advantage that the institution may give precedence to some activities in the event of a funding shortage, or expand on key activities in the case of additional funding. Normal budget negotiations and budgetary framework document funding approaches do not necessarily require that the funded institution provide evidence of improved student learning outcomes as a prerequisite for future funding. Albright (1998) refers to these kinds of funding models as fee-for-service approaches, because funding may not be linked to clearly specified results.

The funding formula approach is based on mutually agreed principles between the funding agencies and the recipient institutions. This approach is commonly
used to fund institutions established through government legislation. Once a consensus has been reached on the key principles and the formula for calculating costs, both parties may enter into a funding agreement for a certain period. The approach has the advantage that the funding to institutions may be more equitable; it also brings stability and transparency to the budgeting process. Since the formula is based on the preceding year’s enrolment data, it gives the funding agency sufficient time to budget for the following year.

The funding formula can be input based, output based or a combination of both. An advantage of any formula-based funding approach is that it grants the autonomous institution the financial autonomy to decide how funds will be used, though it has the drawback that funding will not support enrolment that exceeds the rate established in the original formula. This poses a challenge for maintaining the quality of teaching and learning. There is therefore the need for a process of negotiating enrolment planning over the period for which the funding formula will apply. However, this would entail an agreement to cap enrolment for some courses, which may be at odds with an open school mission of being open to all at any time. There is also the possibility of having differentiated funding formulas for different kinds of programmes — for example, programmes requiring high levels of practical, workshop, workplace or laboratory sessions will presumably be more expensive to offer per capita than programmes without these requirements.

Through input-based funding, institutions are funded based on the number of registered students, and less attention is given to student performance. This may be the most preferred funding model for ODeL institutions incurring heavy costs associated with study materials, tutorials, formative assessment and any other form of support given to students after they have registered for the course. However, governments may view such an approach to funding as unresponsive to national priorities and inappropriately separated from the question of value (Albright, 1998). The funding formula for this model is based on previous enrolment data, so in the event of increased enrolment, the institution may experience a funding gap. To circumvent this challenge, institutions may consider putting a cap on learner subject enrolments. However, this decision may be viewed by the funding agencies and governments as denying students their right to education. Except for the research agenda, the UK’s university funding formula is not performance based: universities are funded based on student numbers, which is an input-based approach (De Boer et al., 2015). Another drawback of this approach is that it encourages student enrolment without putting much emphasis on academic achievement. This promotes access at the expense of student outputs. Because many young people are excluded from schooling in developing countries, an enrolment-driven formula for funding could be considered for open schooling systems. Once that goal has been achieved, the funding for open schooling could consider other elements, such as student success, completion or graduation rates. In Namibia, for example, the initial agreed formula for subsidising the Namibian College of Open Learning (NAMCOL) to cover normal recurrent expenditures is a classic example of input-based funding. The agreed funding formula was captured in a memorandum of agreement after a series of discussions and negotiations between NAMCOL and the Ministry of Education. The agreed formula is as follows:
Subsidy for the secondary phase $= A \times B \times C \times D$

where:

- $A =$ number of subject enrolments (learners $\times$ subjects enrolled for);
- $B =$ is the full recurrent cost to the government of formal secondary education per learner per subject for the current financial year;
- $C =$ is the percentage of the full recurrent cost to government that has been mutually agreed between the Ministry of Education, Ministry of Finance and NAMCOL as a subsidy; and
- $D =$ the projected rate of inflation for the coming 12-month period as provided by the Ministry of Finance.

This initial funding formula was difficult to enforce because of a *force majeure* clause that enabled the government not to advance funds in line with the agreed formula in the event of inability due to economic downturn or other demanding/competing responsibilities. For the past five years, a base-plus funding approach has been adopted by the Ministry of Education for funding NAMCOL. On an annual basis, the Ministry of Education will either increase or decrease funding against the base they have determined. One drawback of such a funding approach is uncertainty about funding, which could negatively affect planning at the institutional level.

The learners registering with NAMCOL are not taking the full scope of the curriculum but focus only on certain subjects in which they want to improve their grades, so subject enrolments are used as a measure to establish the full-time equivalency (FTE) of the courses provided. The ministry therefore advances a subsidy to NAMCOL as a percentage of the cost of providing a similar service to the FTE number of learners in government secondary schools (Du Vivier, 2007). For example, a learner may register for six courses weighted at ten credits (or 100 notional learning hours) each. This is equivalent to half the annual load of a full-time day scholar. So the distance learner registered for six ten-credit modules represents a subsidy of 0.5 FTE.

Output-based funding represents a paradigm shift from the other approaches, as it is based on the premise of meeting the funding agency’s or government’s needs. This is also referred to as an outcomes-based funding approach (Jones, 2013), and it is linked to clearly defined results. Funding agencies and governments are more in favour of output-based funding because it is linked to student educational outputs rather than inputs, ensures the effective utilisation of resources, promotes improvement, enhances the quality of programme delivery and promotes institutional change. Through this model, institutions are not funded for dropouts or for those who were unsuccessful in final examinations. Forcing this model on open schooling could be considered unfair and discriminatory, however, as most open schools are complementary to the conventional system, and funding for the latter is always based on the number of learners enrolled for the academic year. One drawback of such a funding model is that it may push open schooling to become more selective by enrolling only those students who are likely to progress and ignoring those who are more vulnerable for a variety of reasons. In the view of Jones (2013), by applying this funding approach, institutions will enrol only those students who are likely to succeed and ignore
those who are at risk, be it academically, economically or otherwise. Rumble and Koul (2007) argue that in determining the gains and benefits of open schooling, many studies tend to focus on the quality of outputs as measured by the proportion of learners successfully attaining a school-leaving certificate but tend to ignore “the difference in the level of knowledge and skills a learner had on entry, against the level they have achieved when they leave the programme.” In their view, the benefits derived from any form of learning are gained in the cognitive (knowledge-based), psychomotor (skills-based) and affective (behavioural) domains, and the way such gains contribute to labour productivity and economic growth (Rumble & Koul, 2007). The benefit, therefore, should not be measured against individual performance only but rather should be measured in terms of how it contributes to the labour market and to society.

To address the shortcomings of both input-based and output-based funding models, a combination of the two funding models has been proposed. Du Vivier (2008) posits that the implementation of such a model is complex, though, because of the challenge of establishing an equivalency between the open schooling system and the conventional education system, and that a portion of the payment has to be retained until the release of national results. The funding approach for higher education institutions in the Netherlands follows such a mix of input-based and performance-based funding (De Boer et al., 2015).

Another way to manage the funding model is through a service-level agreement (SLA). This is a formal contractual document entered into between the provider of a service and the funding agency. Communication, agreement, negotiation and quantification of outcomes are key attributes of a service-level agreement (Blackwell & Dixon, 2003). The service provider is legally entitled to be paid a certain fee for providing a specified service. Open schooling systems can be engaged by the funding agency or the ministry responsible for education, to offer alternative training programmes on the terms and conditions both parties have agreed upon (Du Vivier, 2008). The disadvantage of this form of funding arrangement is continuity, as most of these agreements are short-term in nature. The agreement is beneficial for specific projects, since funds will be secured, but not for the sustainability of open schooling systems. According to Blackwell and Dixon (2003), some benefits of SLAs are:

- increased service delivery efficiencies
- improved resource utilisation
- clear performance expectations for both the customer and service provider
- greater clarity regarding roles, responsibilities and priorities
- continuous improvement of service delivery
- better service provision to the student community, staff and other stakeholders

Of course, there may be other ways to generate revenue apart from government subsidies.
Diversification of Revenue Sources

Governments have high expectations for OS to diversify its sources of funding and reduce its over-dependence on government. The scarcity of state revenue due to competing responsibilities to many other sectors makes funding for the education and training sector challenging. Sources of OS financing include government subvention, tuition fees, sales of learning resources, and consultancies. Rumble in his report on the costs and funding of NAMCOL spells out the following means of funding ODeL programmes: government grants and subsidies; student fees and other charges; contributions from community; sales of materials and other services; donations from the private sector; grants from non-governmental organisations; and grants from international funding agencies (Rumble & Koul, 2007). However, state subsidies and income from tuition fees remain the principal sources of funding. Governments are putting pressure on ODeL providers to explore alternative means of increasing their income levels, while at the same time, governments expect the institutions to enhance the quality of their service delivery. This is referred to as a cost-sharing approach, whereby governments gradually shift a greater part of funding for higher education onto students and parents (Vossensteyn et al., 2013). Following the introduction of this strategy in the United Kingdom, enrolment in higher education plummeted. Conceivably, a short-term fiscal relief for the government may have adverse long-term consequences if there is a future shortage of skilled workers.

Government subventions

A number of open schools are established and regulated by governments, and they remain the most significant source of OS funding in any given country. OS receives most of its funding from governments, although in some instances, it comes with a certain degree of independence and autonomy. The governments guarantee funding through the ministries responsible for education and training. Without government funding, many open schools would fail to fulfil their mandate, and most of the disadvantaged members of the society would still be denied the opportunity for learning. Although government funding has been declining over the years for ODeL institutions in general, and open schooling in particular, it still remains the main source of revenue. When governments experience financial limitations, especially during challenging times such as economic recessions, funding for ODeL becomes vulnerable, as government also has to fund other social programmes.

The conventional forms of learning through schools and universities are still prioritised for funding. Du Plessis (n.d.) attests that distance education institutions in South Africa are funded less favourably than conventional face-to-face institutions, on the premise that distance education is more cost effective than face-to-face education. Most governments are committed to increasing access and improving the quality of education while at the same time working hard to reduce costs (Daniel & Uvalić-Trumbić, 2011). Rumble and Koul (2007) state that the approach for funding OS by governments is based on the premise that the operational costs per learners should be lower than in the conventional school environment. Government sees OS as a model providing affordable and less expensive forms of education. One key determining principle for funding
open schooling in Namibia is that the provision of education through NAMCOL should not be more expensive than providing secondary education through the conventional school system (Murangi, 2009). However, Hülsmann and Shabalala (2016) have noted the apparent contradiction between traditional distance education concerns with high enrolment programmes that lead to economies of scale, and the ways in which digital technology and online learning support co-operation and collaboration for relatively small group sizes, which has become a critical issue to address in the digital era.

The legal basis for funding OS is articulated in the institution’s founding legislation. In the context of OS in Namibia, NAMCOL’s funds are derived largely from monies appropriated by parliament and subsidies granted for capital and normal recurrent expenditures, on the principles mutually agreed upon by the Minister of Education and the institution (Government of the Republic of Namibia, 1997). NAMCOL’s subsidy from the government constitutes almost 65% of its total budget. In contrast, the National Institute of Open Schooling, in India, receives minimal funding from the government, comprising 8–15% of the total expenditure (Pant, 2009). The shortfall therefore needs to be made up from other sources of revenue.

**Tuition fees**

Shrinking per capita financial resources from the state are encouraging distance learning institutions to explore ways of increasing their revenue base via non-public sources, such as through tuition fees. The continuing decline in state resources is compelling ODeL institutions to diversify their revenue bases so they can remain competitive and relevant, maintain stability and be able to execute their mandate. The increased demand for open schooling opportunities should be supported by growth in resources so that quality will not be compromised. Wangenge-Ouma and Cloete (2008) argue that for institutions to survive in the face of declining government funding, universities have adopted economic exchange relationships to improve their resource base, and tuition fees remain an important source. Tuition fees are then adjusted to ensure both cost recovery and optimal revenue generation.

In most OS instances, tuition fees remain the second-highest revenue base after government funding. The introduction of tuition fees in open schools is a mechanism to supplement revenue from the government and other resources but should not be based on the principle of full cost recovery, given that insufficient money is one of the key reasons children drop out of school or do not access schooling. Individual open schools can set their own fees, and in some instances, any adjustment in fees occurs in consultation with the relevant government ministry. In determining fees for NAMCOL courses, for example, the institution’s founding act stipulates that the board shall set the level of fees in consultation with the Minister of Education (Government of the Republic of Namibia, 1997). The increase in fees is mostly necessitated by rising expenditures, especially related to ICT, and the need to bridge the often growing gap between the operating budget and the funding received from government. However, raising tuition fees to unaffordably high levels will also result in decline in learner enrolment, ultimately affecting the overall income from student fees. Affordable fees may also contribute to greater equality and increased access.
(Wangenge-Ouma & Cloete, 2008); conversely, some studies have indicated that tuition fees and other forms of cost-sharing with students limit accessibility for lower socio-economic groups (Vossensteyn et al., 2013). Hence, there may need to be some form of bursary option availed for such learners. When determining new fees or implementing fee increases, OS should be cognisant of the fact that learners already incur high costs related to travelling and accommodation to attend tutorials. In some instances, students are also required to pay separately for examinations. The introduction of eLearning initiatives is also putting pressure on learners to acquire digital devices that are compatible, and to purchase data. The implementation of tuition fees should consider the disposable income of learners and their parents or guardians, as this may have an impact on their ability to pay.

For open schooling to live up to its mandate of broadening access and ensuring social equity, provision should be made through scholarship schemes to cater for some of those learners who might find it difficult to pay any fees. In determining tuition fees, it is important for open schools to consider certain principles to ensure that the fees set are acceptable to learners and the general public. Du Vivier (1998) outlines the following fundamental principles in his report in determining the fee structure for NAMCOL:

- Fees should reflect the cost of providing a service.
- Fees should be set at a level that ensures the long-term sustainability of NAMCOL.
- Fees should be based on clearly defined principles that are acceptable and fair to learners.
- Institutions should make provisions to ensure that needy learners continue to have access to the educational opportunities being offered.

Rumble (2006) in his report suggests principles to consider when determining fee increases:

- Fees adjustments should be in line with inflation.
- Fees should recover certain cost elements.
- There should be itemised charges for particular services.
- There should be different fees for different courses, reflecting the different costs of courses.
- Fees should recover a certain proportion of costs.
- Fees should be differentiated by programme.

These views expressed by Du Vivier (1998) and Rumble (2006) are supported by Griesel (2016), who identifies three factors driving tuition fee increases at South African universities: cost of provision, inflation, and income generation as a cost in its own right (Wangenge-Ouma & Cloete, 2008).

Aligning fees to inflation is always the simple way to explain increases to learners and the general public because the annual operating costs for the provision of services at institutions are mostly aligned to the rate of inflation. This will be more of an acceptable approach for determining fee adjustments, as increases in the salaries of employees, including those studying through the open schooling
system, are mostly aligned to the rate of inflation. This approach may address the general concern that fees will become unaffordable and constitute a barrier to learning.

A one-size-fits-all approach for determining the fee structure for different programmes and courses might not be viewed as fair. The costs of developing and delivering programmes, courses and subjects differ, so a differential pricing structure for programmes will be perceived as more acceptable. Study programmes that are more expensive to develop and offer, and those in high demand, tend to attract higher tuition fees (Wangenge-Ouma & Cloete, 2008). Du Vivier (2008) argues that such an approach may, though, discourage learners from taking socially and economically important subjects, as they may select subjects based on price rather than on their interest or academic abilities.

Despite all these approaches, it is imperative to conduct regular market surveys of student fees to gain a clear understanding on fees charged by other institutions. Most open schools are non-profit-making institutions, as they are established through government legislation and receive government subventions, so market surveys should not be the only factor when determining tuition fees. Putting fees at a level comparable to or higher than those charged by private entities may lead to a decrease in learner intake and subsequently to a loss of revenue, which could compromise the service delivery and sustainability of open schools. Indeed, public open schools should be servicing the needs of those unable to access private schooling options.

**Other revenue streams**

The diversification of revenue streams to supplement government subventions and tuition fees contributes to the sustainability of open schools and at the same time ensures adherence to the key mandate of maintaining equitable accessibility. The use of philanthropy to finance operations and provide scholarship schemes for students is one of the vehicles to supplement government subsidies and student tuition fees. However, managing such schemes requires that OS providers invest in human resources for this purpose, so there is a need to cover both the costs of the grants and the means of managing them.

**Study grants and loans**

Financial support for students through loans and scholarships is another set of measures to supplement revenue at any educational institution. Scholarships and loans ensure accessibility and equity in the face of increasing costs borne by students. Generally, study loans are repayable to the funding agency once students are employed upon completion of studies. Study loans are implemented by governments to help needy learners pursue their education. This is commonly used for higher education students, as the likelihood of them later securing employment to repay the loans is high. This scheme might not be feasible for learners in a complementary open schooling system, though, as the secondary education qualifications they pursue might not lead to immediate employment. However, a loan scheme may be workable for an alternative open schooling system, which is often more vocationally oriented, as it may lead to graduates being absorbed into the labour market. On the other hand, open schools should
introduce a scholarship scheme to assist needy learners. The emphasis through this scheme should be to support disadvantaged members of the community rather than to focus on recipients’ academic achievements, which is the common criterion applied in such a scheme.

**Use of philanthropy**

The use of philanthropy in developing countries where resources are limited is one way to supplement government and non-governmental revenue streams. Each year, philanthropists set aside funds for their corporate social responsibility agendas. Kornhaber, Barkauskas and Griffith (2016) view philanthropy as the practice of giving money to any entity — private, public, for-profit or non-profit — by private charitable organisations to foster change in public education. These organisations are called philanthropic or private foundations. Teaching and learning initiatives aimed at supporting vulnerable members of society, such as women, marginalised communities, people with disabilities and unemployed out-of-school youths, may attract some funding. The unique mandate of open schooling to cater for this segment of the community can be beneficial in this regard. Philanthropists benefit from making generous charitable contributions to open schooling by receiving tax breaks from governments. Benefiting from philanthropy requires that an OS programme have a strong business case, clearly articulating how a particular project that requires funding will improve the beneficiaries' livelihoods.

**Sales of learning materials**

The provision of learning resources is a key component of enhancing the quality of education. Print remains the primary teaching medium of education provision in open schooling and conventional schools in developing countries. Developing nations are experiencing inadequate supplies and a lack of appropriate textbooks. Open schooling can capitalise on this shortcoming and develop quality self-instructional study materials to supply to conventional schools, thereby supplementing the OS revenue base. The United Nations, Scientific, Educational and Cultural Organization (2016) reports that developing countries lack enough school textbooks at all levels; this is attributable to the high cost of textbooks. Open schools that are complementary and following the same curriculum as learners in the conventional system can take the same study materials developed for their own learners by conforming to the ministry’s specifications, and sell these materials to public libraries and other schools. Open schools can also develop learning resources for other sectors, such as TVET, because of their expertise in developing materials for their distance learning students. In the case of Namibia, the instructional materials developed by NAMCOL for its distance education learners have been recognised as relevant and high quality, and have been approved by the Ministry of Education for use in conventional schools (Murangi, 2009). Through such arrangements, open schools can generate additional revenue and also create opportunities for OS content developers and conventional school teachers to collaborate in materials development (Rumble & Koul, 2007).
Use of Technology for the Sustainability of Open Schooling

The use of appropriate technologies is one of the most appropriate solutions to address educational challenges, improve the effectiveness of teaching and learning, and provide opportunities for OS to reduce costs and thereby achieve sustainability. Rumble and Koul (2007) point out that information and communications technologies (ICT) are important for open schools to reach more students, strengthen operational systems and enhance teaching and learning. Ally and Samaka (2013) posit that education should be designed in such a way as to meet the needs of students irrespective of location, economic status, social status or gender and should not deny learners opportunities because of shortages in physical, human or financial resources. There is a need for OS to make learning resources available to learners in digital formats using ICT. These resources can be made available to learners at no cost as open educational resources (OER) under open copyright licences to ensure equity in the provision of education (Wiley et al., 2012). This approach minimises the costs for learners, who no longer need to travel long distances to physical facilities such as libraries and resource centres to access learning resources; at the same time, it benefits institutions by avoiding the high cost of printing or purchasing learning resources for learners. Textbooks are valuable learning resources; however, drastic increases in their prices have made them cost-prohibitive for many students (Croteau, 2017). Some learners, particularly those from poor economic backgrounds, cannot afford to acquire them, which in turn affects their chances of success.

OS should circumvent this problem by developing and making OER available to students. OER and the use of mobile technology will narrow the learning gap by making learning resources readily available and affordable (Ally & Samaka, 2013). It is sometimes possible for OS providers to support the development or updating of curriculum resources, provided these are subsequently shared openly as OER. For example, The Open University, in the UK, makes use of a freemium model whereby 10% of each new course is shared as OER, and interested learners can then click through for full enrolment. Institutions face the challenge of sustaining OER following initial funding from government or funding agencies for a particular project. Hence, OS needs to come up with an appropriate business model for sustaining OER. Geser, Schön and Ebner (2019) suggest various business models for sustaining OER: community based, philanthropy based and revenue based.

Despite the advantages of technology-enabled learning, there are limitations related to the high initial costs of introducing technology, limited access to computers and their accessories, limited management and monitoring of computer resources, and low bandwidth, all of which can deprive students of the benefits of ethical and educational relationships with teachers (Pakdaman et al., 2019).

Collaboration and Partnerships

Organisations and institutions collaborate and form partnerships to gain valuable results and benefits that they cannot achieve by operating independently. Partnership involves two or more organisations working together to obtain agreed
upon objectives, whereas collaboration refers to instances of departments or faculties within the same institution working together (Eddy, 2010). Collaboration entails institutional development and changes with multiple benefits, categorised as effectiveness gains, efficiency gains, resource gains, capacity gains, legitimacy gains, and social development benefits (Lawson, 2004). In the opinion of Eddy (2010), partnerships in education are formed for a variety of reasons, such as to effect educational reform, provide regional economic development, allow dual enrolment for students, encourage student transfer between colleges and universities, improve student learning, save on resources, obtain a shared goal or vision, and create international partnerships. Skipp and Hopwood (2017, p. 11) outline some key features of good partnership agreements with educational institutions:

- timeliness and responsiveness
- stability
- aligned strategies with a similar focus
- a commitment to jointly providing comprehensive offers
- equitable partnerships with mutual respect
- staff/institutional benefits
- minimum termination periods and teach-out commitments
- a focus on student experience
- the development of trust and flexibility over time

Open schools can derive a substantial amount of benefit by collaborating with each other and with other institutions in different spheres to ensure and maintain sustainability. Possible areas for strategic partnerships include but are not limited to course development, administration of enrolment and examinations, collaborative research, sharing of resources, and the development of expertise in areas where this is lacking. The development and production of materials remains one critical area that requires strategic partnerships. The processes of course design and materials development are very costly and exhausting, so partnerships with other institutions and publishers are paramount to minimise the costs and the development period. Through such agreements, the cost can be shared between the institutions, which can be a cost-effective way to introduce new programmes. These partnerships between institutions must be based on terms and conditions negotiated and mutually agreed upon that are articulated in an agreement between the parties. It is important for open schooling to engage in due diligence regarding the partner institution before entering into any strategic partnership agreement.

Entering into a franchise agreement is another possibility that open schools should explore to remain relevant, competitive and sustainable. This sort of agreement involves the purchase of rights to sell education and training services developed by another institution under its brand (Du Vivier, 1998). The franchising institution is required to make an upfront payment for the rights or licence. An open school can franchise a course from another institution and deliver it to its learners. Through this arrangement, the franchising institution has control over the content, delivery, assessment and quality assurance mechanisms.
The concept of accountability is defined differently, depending on the context in which it is applied. Anderson (2005) refers to the following three forms of accountability systems in the education sector: compliance to regulations, adherence to standards, and accountability in terms of student learning outcomes. These systems are interconnected and show that institutions are accountable to learners, to regulatory, professional and funding bodies, and to the general public. In the view of Cueto, Dammert and Miranda (2017), accountability is taking responsibility and being answerable for public resources, and sharing information about how the resources were utilised and what was achieved. Accountability is about being transparent to guarantee ethical behaviour and values, avoiding corruption or any unethical behaviours, and maximising benefits for the population.

Accountability in open schools requires the establishment and maintenance of credible and reliable databases that can provide meaningful information to stakeholders and inform decision making. The information provided through an institution’s student records management systems should be of such a nature as to engage stakeholders, enhance community support, and inform public policy and resource allocation. The involvement of stakeholders in OS initiatives has the potential to improve accountability.

Institutions tend to engage in activities that are viewed as serving the interests of a few individuals and not living up to the expectations and mandate for which they have been established. The element of accountability is crucial in any business sector. An open school therefore should be accountable to all its stakeholders, as the funding to sustain its operations is derived from government, learners, parents, funding agencies and the general public through the payment of taxes. Being accountable may be a complex matter for some institutions, but it is imperative to develop clear and transparent guidelines with well-defined performance indicators.

Rumble and Koul (2007) studied the costs and effectiveness of open schools in Namibia and India, using NAMCOL and NIOS as case studies. They highlight the following factors as paramount for the sustainability of open schools:

- government support through policy
- a clearly defined role for the open school as being an alternative to the conventional system or a complementary element
- effective management structure to provide good governance at low cost
- support for staff development
- cost-efficiency through financial management
- embracing a culture of quality in all business operations through the development of a quality assurance framework to ensure accountability, transparency and good governance

As noted, the costs of provision using ICT for institutions, parents/caregivers and learners need to be analysed very carefully (Hülsmann, 2016; Hülsmann & Shabalala, 2016).
Adopting Business Models for Education Delivery

A business model comprises the policies, systems, resources and procedures an organisation consciously puts in place to realise its vision and deliver on its mission (Osterwalder et al., 2005). There is little in the literature to guide practices for open schooling, but we can learn from the challenges faced by higher education institutions as they seek to migrate more online.

While emerging technologies have the power to disrupt normal practices and ultimately affect business models, organisational inertia and uncertainty about outcomes typically mean that organisations will not easily change their business model unless they have strong incentives to do so (Vorbach et al., 2017). For example, Marty (2014) notes the tensions between demands to open access, on the one hand, and the need for institutions to account for what they spend, on the other hand, as well as the ways in which institutional culture and values have changed in a particular distance education institution as provision has moved from a civil-servant-based and education-as-a-public-good frame of reference to a more business or “monetised” approach. In a similar vein, discussions and practices around business models for massive online open courses (MOOCs) have resulted in two distinct approaches to operationalising rollout: non-profit, such as EdX, and for-profit, such as Coursera. About the latter option, Burd, Smith and Reisman (2015) observe that fees may be charged for certification, for links to possible employers or for supplementary support services. Institutions will presumably make decisions about what business model to employ based on their vision, mission and/or goals. However, Hoveskog et al. (2018) point to a growing expectation that enterprises should balance various financial, social and environmental goals, and they identify four levels of development: profit normative, “do well”; responsible business, “do well while doing less harm”; sustainable development, “do well and do (some) good”; and flourishing, “do good to do well.” This requires making decisions about inputs, processes, values and people through economic, social and environmental lenses.

It is important to understand that in a changing environment, the development of institutional business models is a continuous process, and Kolb’s learning cycle or methods-based approaches may be useful to help providers work collaboratively to address core business model issues related to key partners, key activities, key resources, value propositions, customer relationships, channels, customer segments, cost structures and revenue streams (Hoveskog et al., 2015; Jackson et al., 2015). These categories are the most pervasive in the literature (Dijkman et al., 2015) and can be traced back to the earlier work of Osterwalder et al. (2005). Figure 15 shows the key elements of a business model.
Addressing the Learning Needs of Out-of-School Children and Youths through the Expansion of Open Schooling

![Business Model Canvas](https://diytoolkit.org/tools/business-model-canvas/)

**Who will help you?**

**Key Partners**
Who are your key partners/suppliers?
What are the most important motivations for the partnerships?

**How do you do it?**

**Key Activities**
What key activities does your value proposition require?
What activities are most important for your distribution channels, customer relationships, revenue streams, etc.?

**What do you do?**

**Value Proposition**
What core values do you deliver to your audience?
Which needs are you satisfying?

**How do you interact?**

**Audience Relationships**
What relationship does the target audience expect you to establish?
How can you integrate that into your work in terms of cost and format?

**Who do you help?**

**Audience Segments**
Which groups are you creating value for?
Who is your most important audience?

**What do you need?**

**Key Resources**
What key resources do your value proposition require?

**What will it cost?**

**Cost Structure**
What are the most important costs in your work?
Which key resources/activities are most expensive?

**How much will you make?**

**Revenue Stream**
For what value are your audiences willing to pay?
What and how do they recently pay? How would you prefer them to pay?
How much does every revenue stream contribute to the overall revenue?
The model in Figure 15 suggests companies or institutions should collaborate across different sectors or industries, which is different from the traditional, more institution-centric business model. This is a collaborative approach that can bring massive benefits to consumers and improve the quality of their lives. The model considers the following essential elements: infrastructure (which refers to different partners or other institutions, as well as activities and resources), value proposition (the reasons students are opting for a particular institution, or what benefits they will derive), customer (the student’s relationship with the institution, teachers and fellow students), channels (the ways in which the institution deliver its services), customer segments (the different stakeholders that institutions serve, such as students, parents and government), and financial perspectives, which relate to cost structure and revenue streams. Cost structure refers to the fixed and variable costs that institutions incur to ensure business operations, while revenue streams are sources of income, such as government subvention, student fees, sponsorships, research grants and other sources that ensure the long-term sustainability of the institution. All these components are interrelated and influence each other. This model can be of great value to the education sector because the primary purpose of educational institutions is to address or meet the needs of the student through collaborative initiatives; the model helps determine how services will be delivered to satisfy student needs, and what financial structures are required to deliver a service in the most effective, efficient and sustainable manner. Any business model can be either value driven or cost driven. What is important for any open schooling system today is to come up with a successful and sustainable business model that will add value to the primary beneficiaries and that will capitalise on economies of scale.

In a similar vein, reflecting on the Australian higher education context, Tian and Martin (2014, pp. 940–941) identify the following critical areas in which decisions need to be made, noting that decisions will be slightly different, depending on whether the institution sees itself as teaching and learning intensive or research intensive. This has become an important consideration, given the growing trend for open schools to become open universities in response to student demand:

1. Stakeholders and their management: managing the relationships between students, staff, partners, competitors, industries, governments and communities.

2. Intangible resources and capabilities, including
   a. brand name
   b. experience and knowledge
   c. relationships, networks and loyalty
   d. knowledge creation, delivery and management

3. These intangibles embrace individual, corporate and individual knowledge, competencies, capabilities and relationships.

4. Value proposition: the value created across the spectrum of the educational process, including value to creators, intermediaries, industries, communities and students.

5. Cost structure: all the costs, fixed and variable, associated with the business of educational providers.
6. Revenue model: how revenue is generated.

7. Distribution channels: the different distribution channels through which the university offers and markets its products and services (courses, degrees, research projects and consultancies).

8. Complexity and sustainability: how to respond to the challenges of organisational complexity and the need for sustainable organisations and courses, sustainable resources, and a sustainable planet.

In a reflective paper on the UK context, Middlehurst (2002, pp. 151–152) identified dilemmas and choices facing UK higher institutions in response to increasingly borderless education at the time. They remain relevant today and are summarised in Tables 8 and 9.

Table 8: Dilemma for institutional positioning: strategy A or B? (Middlehurst, 2002, p. 151)

<table>
<thead>
<tr>
<th>Strategy A</th>
<th>Strategy B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual venture v.</td>
<td>Collaborative venture</td>
</tr>
<tr>
<td>Programme focus v.</td>
<td>Service focus</td>
</tr>
<tr>
<td>Not-for-profit venture v.</td>
<td>For-profit venture</td>
</tr>
<tr>
<td>Institution-wide initiative v.</td>
<td>Faculty-based initiative</td>
</tr>
<tr>
<td>Direct services v.</td>
<td>Brokered services</td>
</tr>
<tr>
<td>Providing qualifications v.</td>
<td>Providing learning opportunities</td>
</tr>
<tr>
<td>Focus on existing students v.</td>
<td>Focus on new markets</td>
</tr>
<tr>
<td>University-based initiative v.</td>
<td>Government/private-sector initiative</td>
</tr>
<tr>
<td>Using existing brand v.</td>
<td>Creating a new brand</td>
</tr>
</tbody>
</table>

Table 9: Choices and dilemmas in strategic decision making (Middlehurst, 2002, p. 152)

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Choices and Dilemmas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding</td>
<td>Use of own capital; venture capital funds; collaborative investment with other institutions; joint venture with private sector; seek external development funding</td>
</tr>
<tr>
<td>Structure</td>
<td>Faculty-owned structure; separate company; institution-wide initiative; two-level structure (holding company and operating company)</td>
</tr>
<tr>
<td>Staffing</td>
<td>Train existing staff; employ separate cadre of staff; create new cross-functional teams; create new contracts for existing staff; outsource staffing</td>
</tr>
<tr>
<td>Intellectual property</td>
<td>Individual ownership of materials; institutional ownership; shared ownership; commercial contracts govern ownership</td>
</tr>
<tr>
<td>Quality assurance</td>
<td>Internal QA system; external agency review (national or international); external kite marking of separate educational functions; peer review process within a consortium; joint public/private sector QA system with different standards and outcomes; validation of programme framework and outcomes rather than validation of programme inputs and content</td>
</tr>
<tr>
<td>Pedagogical approaches</td>
<td>Student- or client-led curriculum design rather than faculty-led curriculum design; supported distance learning or wholly “virtual” approaches; varied approaches to suit different students and markets (making choices according to the four profiles)</td>
</tr>
</tbody>
</table>

The examples cited reinforce the notion that course design needs to give attention not only to what is taught but also how it is taught in order to foster
active engagement and deeper conceptual understanding; it also needs to revisit systems, processes and ICT infrastructure to ensure that new learning models are supported by appropriate business models, an issue explored by Eurich, Calleja and Boutellier (2013) in relation to the high-performance computing centres that are increasingly central to the operation of education institutions. In addition, Troxler and Wolf (2017) show that activity theory can also be used to help understand new kinds of business models for a connected, open and digital world, while de Reuver, Stein and Hampe (2013, p. 71) explain “how early consideration of business model design issues may inform the service and technology architecture definition as well as the other way around.” Their paper notes the increasing trend towards access to and use of smartphones for government-populace engagement, but of course, the same trend also applies to the education sector. What, then, are the challenges and opportunities for mobile learning? This issue is explored by Khaddage et al. (2015), who, after an extensive review of the literature, identify four key clusters of challenges: pedagogy, technology, policy and research. From their reflection on these challenges, they have developed a draft framework for mobile learning implementation that neatly summarises key issues to be addressed, related to pedagogy, technology, policy and research.

With respect to mobile learning in particular, Bandera (2017) notes the relative underuse of MMS technology, even though this may be a more reliable and affordable means of distributing video content in some developing contexts. With a growing number of students able to access information and resources online, increasingly through connected mobile devices, there has been growing interest in “flipped classroom” approaches in contact provision, whereby learners engage with content outside of class, while class time is used more for discussion and problem-based learning than for content dissemination. A recent study that explored the use of a flipped classroom approach for high school engineering in Taiwan supported the findings of earlier studies regarding improved attitudes towards learning as well as improved learning achievement (Chao et al., 2015), but also reinforced the need for clarity on the underpinning pedagogy in addition to appropriate use of suitable content and technology. In the realm of MOOCs, this has led to the recognition of two major approaches: cMOOCs, which are based on constructivist theory and place great emphasis on collaborative learning, and xMOOCs, which focus more on the structured delivery of content, following more behaviourist assumptions about learning (Burd et al., 2015, p. 39). However, Daniel, Cano and Cervera (2015) speculate that the value of the MOOC phenomenon will ultimately be not as an end in itself but rather as a mechanism that helped institutions work out how they should position themselves in relation to the Internet, particularly with respect to the issues of the underpinning teaching model, monetisation, certification, adaptive learning and the needs of developing countries. These issues are discussed in more detail in Chapter 4.

Regardless of the mode employed, it seems clear that institutions will need to give thought to how they will manage the sheer volume of information available, a process that typically involves making decisions about creating, acquiring, capturing, aggregating, sharing and using knowledge to support the vision, mission, reflective learning and innovation of the institution, with implications for both institutional culture (redefining teacher and student roles, for example)
and economic models (probably with greater emphasis on the operating budget than on capital expenditure, for example) (Liebowitz & Frank, 2016). Porter and Graham (2016) observe the growing trend towards blended learning (whether distance and contact or online and contact) and explore the factors that might enhance or impede faculty adoption of such approaches in higher education, but that might also reasonably be anticipated as open schooling moves more online. They conclude that the following factors seemed to have the greatest impact on adoption:

- availability of sufficient infrastructure
- technological support
- pedagogical support
- access to blended learning evaluation data
- alignment of faculty and administrator purpose with respect to adopting blended learning

All of the above issues then raise questions about how education provision should be financed, and the relative contributions of individuals, the state and institutions themselves in this regard (BenDavid-Hadar, 2016; Denison et al., 2014; Fowles, 2010; Hanover Research, 2014; Langelett et al., 2015). In an era where the general trend seems to be towards lower real subsidy per student at all levels of education provision, governments need to make an extra effort if they wish to influence institutional practice in particular ways (Sav, 2016). It seems likely, then, that states and institutions will need to investigate new ways to balance public and private interests in the provision of educational opportunities at all levels (Chimhenga et al., 2015; Fridley & Sharpe, 2016; Ntshoe & De Villiers, 2013; Pulker, 2016; Rambe & Moeti, 2016; Stacey, 2013). This again reinforces the need for upfront costing of proposed programmes so that informed decisions can be made on whether programmes are viable and sustainable for a given market segment and demographic (Mays, 2017; Semeraro & Boyd, 2017).

**Conclusion**

Shrinking financial resources and rising numbers of students in open schools require organisational changes and the adoption of new business models. Traditional institutions can no longer respond to the increased demands of students, so there is a need to adopt alternative modes of education provision and contextually appropriate business models for the open schools of the future. Teaching and learning in this era are no longer about the mere transfer of knowledge but are collaborative, more engaging processes. Institutions should therefore rethink their ways of teaching and learning and begin implementing more interactive and innovative models of education delivery. The influence of technology in education delivery may contribute to quality education at a reduced cost, but only if it is designed and costed appropriately.
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Addressing the Learning Needs of Out-of-School Children and Youths through the Expansion of Open Schooling


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Abstract: This chapter examines the existing literature to explore the contribution of open distance and eLearning (ODeL) and open educational practices (OEP) to open schooling systems. In doing so, the chapter explores the term “openness” within a distance education system, as a philosophy that underpins the open schooling concept. The chapter then focuses on the existing practices of ODeL and OEP within Namibia. Suggestions for future provision are offered.

Introduction

Open distance and eLearning (ODeL) and open educational practices (OEP) entail important frameworks, methods and tools to facilitate successful open schooling. In recent years, the concepts of eLearning and open educational resources (OER) have become buzzwords at educational institutions, especially at open distance learning (ODL) institutions. Once eLearning became an integral part of ODL, the concept of ODeL was born. The ODeL framework is premised on the assumption that all student learning can be optimally supported by modern electronic technologies and other digital facilities (Ngubane-Mokiwa & Letseka, 2015). Some of the possibilities were discussed in Chapter 4.

As discussed in Chapter 3, the development and use of OER also became integral at ODL/ODeL institutions. The use of OER has been supported by funding organisations such as The William and Flora Hewlett Foundation, development agencies such as the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Commonwealth of Learning (COL), and early adopters such as the Massachusetts Institute of Technology (MIT) and OER Universitas (OERu), among others. There are also a growing number of academic chairs around the world devoted to exploring OER, and a growing body of OER research (see, for example, the OER Knowledge Cloud at https://
This OER movement led to the birth of the concept of open educational practice (OEP), as institutions embraced OER and its implementation. Educational officers and academic staff are now exploring open educational software, materials and systems to mediate the effects of reduced financial resources for commercial educational systems and resources. Hence, OEP is becoming increasingly popular in institutions of learning and in the government education system (Adala, 2016).

In this chapter, we explore the concepts of ODeL and OEP and how they can contribute to open schooling. Open schooling is common in Africa and Asia and during the last decade has made huge strides towards becoming a viable alternative or complement to the traditional formal schooling system (Stutchbury et al., 2019). The quality of open schooling has significantly increased with the intervention and support of worldwide institutions such as COL and UNESCO (Adala, 2016). Educational resources face the challenges of a growing world population, so the birth of open schools has provided educational opportunities to learners who would otherwise have been forced to enter the job market without qualifications and/or remain illiterate.

Many African countries find it difficult to provide learning resources to all learners; as a result, textbooks are often shared among several learners in schools. Similarly, resources such as computers, the Internet and other electronic facilities are scarce. Equally, the logistics of distributing resources, especially in rural areas, pose huge challenges for education authorities. These factors impact learners’ performance and their chances of completing school and progressing to higher education. Access to OER can provide free resources to learners and increase their chance of success (Smyth et al., 2016). Educational institutions, the government sector, the private sector and non-governmental organisations should all collaborate to accelerate the development of OER and create awareness about their use and distribution, to benefit everyone. Similarly, these partners should make electronic facilities available for use by learners so they can access OER from all over the world. Access to computing devices and the Internet is imperative for the successful introduction of OER and the embracing of OEP. Every child has the right to quality education, and OER (opening access to content), ODeL (opening access to flexible learning and learning support methods) and OEP (emphasising collaboration and the sharing of intellectual property) have the potential to make this right a reality. Mays (2017) suggests that we can think of these as interrelated components of an open ecology model, as illustrated in Figure 16.

![Figure 16: Open ecology model](Mays, 2017, p. 394)
To receive institutional support and resource commitment, alignment with institutional vision and mission is essential.

During the COVID-19 pandemic, COL and OERu forged partnerships with other international organisations to provide relief to those who were severely affected, via the OER4Covid Support Initiative. The initiative is aimed at establishing an international network of working groups led by volunteer coordinators at institutional, regional and national levels to develop OER. The areas of development are to include curriculum and learning design, technology, online facilitation, resource curation, research, and educator health and well-being (COL, 2020b). In another support initiative, COL has partnered with Coursera to facilitate free access to 3,800 courses as an immediate solution to unemployment and job losses faced by Commonwealth citizens due to the COVID-19 pandemic (COL, 2020a). It is enterprises like these that place OER and OEP at the forefront of flexible education for development. Many educational institutions around the world, as well as students and the public, will reap benefits from these initiatives.

**Goals/Overview of Chapter**

This chapter provides insight into the concepts of ODeL and OEP as new vehicles to drive the success of open schooling. In more detail, the chapter outlines the philosophy of openness and how ODeL and OEP facilitate the openness in open schooling.

**Definitions of Key Concepts**

- **Open educational practice(s) (OEP)** refers to a set of activities and support around the creation, use and repurposing of OER and their adaptation to contextual settings (Conole & Ehlers, 2010). OEP focuses on the management of OER with the aim of improving quality and fostering innovation in education as well as instructional design, and the implementation of events and processes intended to support learning (Ehlers, 2011). At the heart of OEP is a willingness to share intellectual property with others, which is a move towards collaboration rather than competition in terms of both content and pedagogy. Wiley (2013) refers to the usefulness of OER in his 5Rs, which allow users to retain, revise, remix, reuse and redistribute OER, depending on the type of licence. In this way, the user can make the resource their own by editing it or adapting it to their own context. It also allows the user to combine the material with their own resources, adapt it and then share it with other users.

- **Open distance and eLearning (ODeL)** refers to “forms of education provision that use contemporary technologies to enable varied combinations of synchronous and asynchronous communication among learners and educators who are physically separated from one another for part or all of the educational experience” (Alfonso, 2012, cited in Arinto, 2016). ODeL provides viable alternatives to conventional methodologies, or support with strengthening existing methodologies. As this chapter was being written, students all over the world were in lockdown in their residences due to the global outbreak of the novel...
coronavirus. Many learning institutions had to accelerate their eLearning agendas to ensure continuation of teaching and learning. The response by education authorities to mitigate the effects of the COVID-19 pandemic was overwhelmingly towards eLearning implementation. This is evident on UNESCO’s website, where they published a range of distance learning solutions as part of the COVID-19 education response. The list contains resources to provide psychosocial support, digital learning management systems, systems built for use on basic mobile phones, systems with strong offline functionality, massive open online course (MOOC) platforms, self-directed learning content, mobile reading applications, collaboration platforms that support live video communication, tools for teachers to create digital learning content, and external repositories of distance learning solutions (UNESCO, 2020). This is an indication of the huge contribution that ODeL and OEP make to global education.

Discussion

The discussion that follows explores the following key topics:

- the philosophy of openness
- the contribution of ODeL to open schooling
- the contribution of OEP to open schooling
- ODeL and OEP in the Namibian context
- implications for the future

The philosophy of openness

In recent years, open education has made tremendous strides in providing viable alternatives to conventional formal education. The growing cost of formal education, combined with limited budgets and growing numbers of learners, has forced educational authorities to rethink the traditional model of education. As a result, open education has become more acceptable and valued, although it is not always understood in the same way in different contexts.

One of the challenges in discussing openness in education and schooling is that the terms “open” and “education” are relatively complex. Firstly, education can refer to formal, informal and non-formal aspects of teaching and learning. Additionally, education can refer to activities across the lifespan, from infancy and early childhood, to elementary, middle and secondary school, to higher education, as well as adult education. Likewise, “open” can be used in a number of ways, from the aims and goals of education, resources used, to the organizational structure of educational institutions. (Huitt & Monetti, 2017, p. 44)

In an effort to reconstruct the concept of openness, Peter and Deimann (2013), outlined the following historical time periods and the unfolding of education: the late Middle Ages, which was characterised by a short-lived student-driven education phase; the Renaissance to the Industrial Revolution, featuring open teaching and self-education; and the 20th century, which brought about the right
to access knowledge. “This historical reconstruction of ‘openness’ shows us not only a technological, but also a social, cultural and economic phenomenon, not bound by institutional or national boundaries,” (Peter & Deimann, 2013, p. 5).

The history of education resources production and distribution starts with the Gutenberg printing press in 1450, then moves to portable books in 1500, rail networks (1825), postal services (1850), radio (1920), television (1950), personal computers (1980), the Internet (1990), Wikipedia (2001) and YouTube (2005). This was followed by the “open” explosion, with iTunes, Open Learn, MIT OpenCourseWare, MOOCs, MITx/EdX, Udacity and Coursera, amongst others (Peter & Deimann, 2013, p. 5). In the last few years, we have talked about OER, OEP and ODeL, all of which are included in open/innovative schooling (OIS).

Although open education is widely accepted and implemented by many educational authorities in different countries, the degree of openness varies considerably, which limits the potential benefits of open education. Open access is a key element of open schooling systems, and conventional systems are now adopting open learning as they try to expand and improve their services (Abrioux, 2009, p. 5). The attributes of open learning include geographic and age flexibility, flexible admissions criteria, flexible time to programme completion, continuous and uncapped admission, instructional technologies, continuous enrolment and uncapped enrolment, to mention a few (Abrioux, 2009, p. 5).

The degree of openness relates to several flexibilities in terms of access, admission, enrolment, curricula, study material, programme timing and length, assessment, and contact sessions, amongst others. In many ODL/ODeL institutions, there is little or no flexibility in these respects. Murangi (2009) pointed out the inflexibility at the Namibian College of Open Learning with regard to enrolment period, number of subjects learners can take, self-pacing of courses and admission requirements.

The word "open," broadly speaking, means to be flexible, free and welcoming. Relative to closed, the term open implies non-prejudiced, non-restricted and unfettered. Of course, there are different degrees and types of openness as well as different goals and outcomes sought in open education (Blessinger & Bliss, 2016, p. 12). This definition of open brings about a better understanding of the term while accepting that it is not all-inclusive and allows for different degrees of openness.

Open content is content licensed in a manner that provides users with the right to use the content in more ways than those normally permitted under copyright law and at no cost to the user. This term, which is more encompassing than OER, allows for other resources, such as open data and open access journals, to be considered as open content, to which students and lecturers ideally will have access (Government of South Africa, 2014, p. 21). The licensing of open content is important to give users guidance as to the expectations of the copyright holders. Open licences, such as Creative Commons licences, provide a range of options to make open content available for use, reuse and sharing in a fair and transparent manner.

**The contribution of ODeL to open schooling**

The Internet, the World Wide Web, and the implementation of online technologies to facilitate communication and learning have made possible a revolution in distance learning, which has simultaneously increased access, improved
quality and cut costs (Daniel, 2006). The use of online technologies enables greater flexibility, openness and use of unconventional pedagogies, which has resulted in the introduction of the open distance and eLearning model. Interactive communication technologies enable synchronous and asynchronous communication, reducing the transactional distance between teachers and learners as well as between learners. Many ODL institutions have shifted from a predominantly print-based mode of delivery to online learning facilitated using virtual learning environments and various web technologies (Arinto, 2013, p. 168).

Open distance and eLearning refers to the new forms of distance education (DE), which are characterised by the convergence of an open learning philosophy, DE pedagogies and eLearning technologies (Arinto, 2016). Kanwar (2019) describes ODeL as an innovation that has evolved to serve the needs of different contexts and constituencies — from enriching face-to-face teaching, to blended and flexible approaches, to entirely online provision. The philosophy of openness that underpins ODeL guides us to be open to people, places, methods and ideas, as articulated by one of the early open institutions, The Open University (UK). ODeL caters to the needs of lifelong learners through its flexible and learner-centric approaches (Kanwar, 2019).

The open schooling system evolved from the ODL system, focusing specifically on efforts to satisfy the challenging educational demand for secondary education (Mitra, 2014). Haughey and Stewart (2010), cited in Arinto (2016), suggest that the form of open schooling will depend on the attributes most strongly emphasised — flexibility, openness, pedagogy or technology. The benefits of ODeL to open schools are described by Daniel (2006, p. 5), in increasing order of importance, as follows:

First, eLearning provides opportunities to access oceans of online learning resources including libraries and museums. Teachers, however, need to provide guidance to facilitate self-directed learning.

Second, eLearning increases the speed of communication between learners and teachers and thus, allows learners to receive feedback on their assignments timeously. Online forums such as chats and discussions provide a platform for learners to engage and express themselves without fear of intimidation. This is particularly helpful to those who lack confidence in oral expression.

Finally . . . [there] is the invention of Open Educational Resources (OER) which allow anyone to share, adapt and re-purpose with no need to request copyright permission from the author. OER allows people to contribute to eLearning repositories under licenses that allow others to use and adapt them provided they acknowledge the source and put their adaptation back into the system for onward use.

It is, however, a reality that many open schools, especially in Africa, still do not have the capacity to take full advantage of the benefits presented by ODeL. Although huge amounts of money are spent annually on the development of eLearning resources, accessing these depends hugely on the availability of ICT infrastructure, which remains a challenge in many developing countries. Many open schools still rely on print-based materials as the main learning resource, while video, radio and online eLearning materials are provided as supplementary
resources. The affordability of digital devices and Internet access also plays a role in the effectiveness of ODeI in open schooling. Very often, many out-of-school youths who ended up in the open schooling system are from poor backgrounds or face socio-economic challenges. Given all these barriers, it is difficult for them to fully utilise and benefit from eLearning pedagogies. There is, therefore, a need for open schools to find innovative ways to enhance the “open” within open schooling systems.

The contribution of OEP to open schooling

As observed in Chapter 1, the need for open schooling emerged because of the restrictions on educational access for many young learners who find themselves out of school due to varied societal challenges. Equally, many developing countries fail to provide equitable access to education for all, due to insufficient schools and teachers (Abrioux & Ferreira, 2009) and lately, the COVID-19 pandemic. The Commonwealth of Learning (COL) chose the term open schooling to emphasise the need for open educational practices within the distance learning system. Apart from the openness in the system, the emphasis in open schooling is placed on flexibility in terms of content, delivery modes and pedagogical approaches (Conole & Ehlers, 2010). This flexibility is highly recommended, especially so as to be well prepared for times like the lockdown of schools during the COVID-19 pandemic. Huge disparities were visible in the Namibian education system in the continuation of teaching and learning for those schools where eLearning systems were in place. However, in most schools, especially government ones, teaching and learning were stalled and could only continue effectively after the lockdown was lifted. This was probably the same in many countries where eLearning was not well developed.

Although the concept of open education originated way back when new elements were added onto distance education, such as the provision of wider access to off-campus students and the offering of customised learning experiences, the current open education arose through the birth of OER and OEP (Chiappe & Adame, 2018). The philosophy of OEP evolved as an addition to the concept of OER, with the goal of transforming education into practice, making it open and accessible to all. OEP looks beyond the creation of open content, aiming to provide a conducive environment in which open content can be utilised. Andrade et al. (2011) refer to OEP as open practices in education that involve planning, creating, adapting, curating, sharing and reviewing OER.

Based on that concept, global organisations and movements such as UNESCO and Education For All (EFA) started to promote complete openness with regard to educational content, repositories and all enabling systems (Chiappe & Adame, 2018). One of the main features in open schooling is the flexible approach to learning and the use of ICT-enhanced pedagogies. The contribution of OEP to open schooling lies in its potential to promote flexible lifelong learning using open ICT. Twenty-first-century technologies have increased the demand for open schooling to have a wider scope and for access to quality learning resources. According to Conole and Ehlers (2010), OEP is applicable to both formal and non-formal education and aspires to broaden the understanding of openness in education. Many open schools around the globe have been engaged in the development of
OER, with the intention of widening access to quality education and making learning resources freely available for sharing. The question remains unanswered, however, as to whether there are avenues in place and open practices that facilitate the effective and sustainable utilisation of OER within the context of open schooling. The benefits of OER can only be reaped if the resources can be accessed freely and enhanced by learners themselves. OEP, on the other hand, tries to raise the quality of learning experiences by creating an environment where there is learner engagement with open content in terms of interactive activities as well as feedback. To differentiate OEP from OER, Cronin (2017) defines OEP as a broader descriptor of practices that focus on the use of open pedagogies and the open sharing of teaching practices.

Regarding teaching in open schooling, in many cases, a blended mode of delivery is used, whereby self-instructional materials are provided in combination with face-to-face tuition. Although OER are often used to develop materials for learners, teaching is mostly done in a closed style, where teachers continue to play the role of a “sage on the stage” instead of a “guide on the side” using OER materials. OEP introduces the notion of open teaching, which implies guiding learners to actively engage in activities through collaborating with peers and constructing their own knowledge (Chiappe & Adame, 2018). The emphasis should be on optimising the use of open technologies to facilitate the sharing and reuse of OER. Furthermore, OEP strives to move beyond the limited concept of OER as instructional materials developed by teachers to disseminate knowledge to learners, instead promoting the perspective that OER are freely available resources for teachers and learners to assess, create and assemble their own knowledge portfolios, which they can share with others (Conole & Ehlers, 2010).

The use of OEP in open schooling requires a deeper understanding of the terms “open” and “practice” in education. Being open as a teacher requires the application of open pedagogical practices, which involve teaching openly and therefore creating learning activities that include online assessment; it also includes inviting learners to share their work through the use of social media and online open discussions via Facebook, Twitter or WhatsApp groups (Cronin, 2017). Wiley (2013) refers to “open pedagogy” and adds that learners can be involved by allowing them to take part in the remixing of OER to create tutorials as part of their courses or to edit topics in Wikipedia. Thus, OEP has the potential to empower open schooling learners to become active contributors to OER. In a similar vein, OEP provides an opportunity for open schools to create their own OER repositories for access by wider communities.

Another aspect of OEP is the transformation of teaching and learning strategies into an open platform where both teachers and learners share and contribute to the construction of knowledge, thus engaging in a paradigm shift in the whole education system. Open schools should take advantage of ever-growing Internet access to create opportunities for OEP and to promote lifelong learning. The virtual learning experiences presented by OEP can be extended beyond geographical boundaries through open online programmes. In addition, OEP will create lifelong learners equipped with 4th Industrial Revolution skills to survive in an ever-changing world.

The demand for more open schools is constantly increasing. As noted in Chapter 1, some 300 million children have no access to schooling opportunities. The
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additional global threat posed by the outbreak of the novel coronavirus created a vacuum in the way teaching should take place within the formal and open schooling systems. Many institutions had to close their campuses to prevent the spread of the virus, resulting in dormant educational facilities. Even upon reopening, physical distancing requirements will usually mean that not all learners can be on the same campus at the same time. Institutions are therefore left with no option but to utilise the available technological avenues to reach learners wherever they are and to employ alternative pedagogical approaches. The use of OER and well-defined open educational practices becomes inevitable.

A great deal has been achieved in open schooling to create awareness of OER and take steps to create OER for open schooling. In Namibia, for example, there is an OER policy that guides the development of open schooling materials at the Namibian College of Open Learning (NAMCOL). However, little has been done in terms of opening the system for the benefits of OER to be felt. There needs to be a change in mindset for the benefits of OEP to be realised. The focus needs to shift from developing OER for increasing access to knowledge, to increasing access to collaborative “knowledge creation using OER” (EDUCAUSE, 2018).

It is evident from the above that there is increased interest and growth in OEP for open schooling. This increased growth could contribute to a paradigm shift in the overall education system. Much of what is happening in open schooling mirrors what happens in conventional formal education (for example, entry requirements, curriculum choices, assessment practices, the notion of the “school year”). This leads to a review of the way resources are developed, used and shared, as well as different approaches to teaching, learning and assessment. While such changes should benefit learners within the traditional system moving towards more blended approaches, greater openness and flexibility in the system should create avenues for those learners who have been unable to access schooling opportunities through the traditional industrial brick-and-mortar model of provision.

**ODeL and OEP in the Namibian context**

In the Namibian context, the movement towards sharing resources and opening up educational approaches is visible in the work of the Namibian Open Learning Network Trust (NOLNeT), which was established to coordinate ODL activities in the country. The ODL institutions in Namibia are all part of NOLNeT — NAMCOL, the Centre for Open, Distance, and eLearning at the University of Namibia, and the Centre for Open and Lifelong Learning at the Namibia University of Science and Technology. The NOLNeT objective is to develop, support, coordinate and maximise resources to provide quality, inclusive, flexible, relevant, innovative and sustainable ODL programmes and services. To adhere to this purpose, NOLNeT has developed national policies, namely, the National Open and Distance Learning policy and an OER policy (Möwes, 2008). NOLNeT is responsible for facilitating collaborative efforts between institutions to maximise the benefits of open distance education provision in Namibia. The development of eLearning and OER institutional policies is one of the milestones achieved through the network. Thus, eLearning remains key in the offering of ODL — and increasingly ODeL — programmes within institutions guided by institutional policies.
In terms of OER, NAMCOL, with assistance from COL, has made great strides in the development of OER for open schooling, using the open source platform called Notesmaster. Similarly, countries and territories such as Zambia, Malawi, Mozambique and the Caribbean also use the Notesmaster platform for their OER development. Many countries have openly shared what they have developed through the Guest Access link on the platform. The introduction of OER also plays a critical role in the development of learning materials given to learners. It is, however, important to note that the availability of eLearning and OER policies does not necessarily imply that open educational practices are in place to optimise the full potential of OER for facilitating teaching and learning. A lot still needs to be done in the fields of ODeL and OEP in terms of both theory and practice for the benefit of Namibian learners.

Therefore, although OEP has clear potential to provide a whole range of opportunities and benefits to the overall education system, there is still a long way to go in creating a common understanding of OEP and a driving force to achieve its implementation in open schools. In the absence of a structured open schooling network in Namibia that includes private schools, there are big disparities in approach between NAMCOL and private distance education providers. NAMCOL is a government-funded institution, so it provides learning content and related services at low cost or for free, while private providers are commercial entities geared towards making a profit. This is an obstacle for the national development of OER and the implementation of OEP.

During the COVID-19 pandemic, there has been a surge in the development and use of eLearning and OER as a response to school lockdowns. The availability of OER enabled many educational institutions to continue with education during the lockdown period, although challenges remained with regards to unequal network access, as well as the affordability of Internet access and computing devices for all learners to reap the benefits that ODeL can offer.

The Ministry of Education, Arts and Culture (MoEAC) in Namibia reached out to NAMCOL in support of its eLearning development agenda to accelerate the development of resources on Notesmaster and to increase its radio and video lessons. In a special project funded by the MoEAC, NAMCOL will extend its Notesmaster platform to include junior secondary subjects and pre-vocational subjects, which were not previously included in its OER. Additional radio and video lessons can also now be developed for the new curriculum. Due to the recent campus closures and this extended curriculum coverage, the number of users on the Notesmaster platform has increased significantly from the usual average of 2,000 to more than 18,000. This number is expected to increase further as more resources are developed and the advocacy campaign is strengthened.

Implications for the future

The future of open schooling will be characterised by ODeL and OEP. There is still limited research presenting success stories for OEP, because it is a new concept. Open schooling cannot afford to continue operating in a silo removed from the mainstream, as the need for more open practices continues to rise. The increase in the need for lifelong learning and the demands of the 4th Industrial Revolution

26 https://notesmaster.com/
require more flexibility in the provision of education. The development of ODeL and implementation of OEP can enable both learners and teachers to access, share and create resources that suit their purposes.

Bates (2015, p. 416) argues that the time has come for learning content to be freely accessible and available through the Internet. This means that teachers and learners will have access to an array of learning resources that they can contextualise to suit their needs. They will no longer need to focus on one textbook, as is often the case. Also, they will not need to keep the resource in its original format; rather, they will be able to add audio, video, illustrations and animations to enhance understanding of the learning content. That means ODeL and OEP have implications for the ways in which teacher training institutions should operate. The current educational training methodologies and techniques may no longer be fit for purpose. Teacher training institutions should be required to offer programmes that equip teachers with advanced open pedagogies to be able to understand and embrace the benefits offered by eLearning and open education practices. In terms of policy, the focus should be to transform the education system to a more open, learner-centred approach that will allow full learner engagement in the whole instructional system design of their own personalised curricula, an issue discussed in Chapter 2 of this publication. ODeL and OEP support continuous assessment for learning purposes rather than one-off, high-stakes summative assessments of learning.

As indicated in Chapter 6, the costing formulae and budgets for open schooling need to be adjusted. Instead of schools investing in predetermined print-based learning resources, provisions should be made to increase access to ICT infrastructures and to reskill teaching staff in technology-enabled methodologies. In short, ODeL and OEP will bring about unlimited possibilities and opportunities for developers, users and researchers.

References


Abstract: Gender equality in education is one of the key determinants of the human, social and economic development of a nation. For this reason, the Sustainable Development Goals framework emphasises women’s education and empowerment. No doubt, there have been reductions in dropout rates, and more girls have gone to school in the last decade. However, the gender gap in literacy and dropout rates is also high among women in developing countries, particularly in the Commonwealth. In the poorest and most marginalised communities, women are more excluded, and dropout rates are high. Several studies point out that poverty, coupled with stereotypes about women’s education, social taboos and parents’ unwillingness to invest in women’s education, has led to gender disparities in education and employment. Open schooling, being flexible and cost-effective, has been found to influence the enrolment patterns in various developing countries in the Commonwealth, and the results have been very effective, especially in providing access for girls and women not accommodated by the traditional school system. This chapter will discuss the challenges of education in various developing contexts and describe how various successful projects such as Hunar and GIRLS Inspire have influenced the education of girls in developing countries.

Introduction
Gender equality in education is one of the key determinants of the human, social and economic development of a nation. For this reason, the Sustainable Development Goals framework emphasises women’s education and empowerment. These have wide implications not only for promoting economic growth but also for helping to reduce poverty, improve the social and political participation of women and ensure more peaceful and inclusive societies. Research also reveals that girls who are able to complete secondary education
are more likely to contribute in the formal labour market, remain healthier, accumulate higher earnings, get married later, have fewer children, and provide better health care and education for the next generation (COL, 2018). These benefits, in combination with each other, have larger potential to improve the well-being of households, build up communities and lift nations out of poverty. It is estimated that if gender equality can be achieved in education and labour force participation by 2030, it has the potential to contribute 3.6%, or USD 4.4 trillion, to global gross domestic product (GDP). There is also the probability of reducing the share of the population living in extreme poverty worldwide (measured at less than USD 1.90 a day) (UN, 2017).

The Meaning of Gender Equality

Gender functions as a socio-economic variable for analysing the roles, responsibilities, constraints, opportunities and needs of men and women in a given context. In most countries, women and girls are at a disadvantage in terms of males’ access to and control over facilities, services and other resources, as well as influence and control over decision-making processes that determine the quality of life.

According to the International Labour Organization (ILO), gender equality starts with equal valuing of girls and boys. This implies that women and men have equal conditions for realising their full potential and contributing to and benefiting from economic, social, cultural and political development.

The United Nations Women website explains as follows:

**Equality between women and men (gender equality):** refers to the equal rights, responsibilities and opportunities of women and men and girls and boys. Equality does not mean that women and men will become the same but that women’s and men’s rights, responsibilities and opportunities will not depend on whether they are born male or female. Gender equality implies that the interests, needs and priorities of both women and men are taken into consideration, recognizing the diversity of different groups of women and men. Gender equality is not a women’s issue but should concern and fully engage men as well as women. Equality between women and men is seen both as a human rights issue and as a precondition for, and indicator of, sustainable people-centered development.

(https://www.un.org/womenwatch/osagi/conceptsanddefinitions.htm)

Therefore, gender inequality exists when one gender typically has less access to and control over facilities, opportunities and resources than the other gender. In terms of education, this needs to be understood as the right to education (access and participation), as well as rights within education (gender-aware educational environments, processes and outcomes) and rights through education (meaningful education outcomes that link education equality with wider processes of gender justice) (Wilson, 2003). Measuring meaningful progress towards the right to education is the first step in assessing progress towards gender equality. Also essential is assessing both quantitative and qualitative information and phenomena that underpin the rights of men and women (Subrahmanian, 2003).
Challenges to Gender Equality in Education

Much research has been done to find out the factors that influence access to and participation in education as well as the quality of learning. Some of the prominent factors are culture and tradition, poverty, child labour, investment in boys’ education more than girls’, the cost of schooling, sanitation conditions in schools, a lack of female teachers, and a lack of barrier-free facilities for students with disabilities, among others.

Culture and tradition

Culture and tradition are particularly related to gender stereotypes and are known to prevent the education of girls and women. Although various countries have child marriage prevention laws, social customs and norms are the major determinants that affect the issue of child marriage. Globally, 650 million girls and women alive today were married before their 18th birthday, and the highest prevalence of child brides is concentrated in South Asia, Western Africa and Sub-Saharan Africa. South Asia has the highest incidence of child marriage, with 285 million, which constitutes 44% of the global burden, followed by 215 million child brides in Sub-Saharan Africa, comprising 18% (UNICEF, 2018).

In 2014, 58.6% of women in Bangladesh between 20 and 24 years of age reported having been married before their 18th birthday, while in 2016, 27% of Indian women got married before 18 years of age. The highest incidence of child marriage is found in Niger, at 76%. Not only are girls forced into marriage at an early age at risk of health complications but their access to education is also very low, and thus the probabilities of job opportunities are also low.

Child labour

Children’s engagement in work is one of the most common reasons for them not attending school in developing countries. The more a child engages in work, the less likely it is they will have sufficient access to education and remain in school. Many children attending schools are also engaged in household chores, agricultural farming, construction-related work or industry-related work, which has a negative impact on their education; as a result, most of them are unable to complete school education (Brock & Cammish, 1997, p. 34; Ersado, 2005; Hunt, 2008). Global estimates reveal that 152 million children are involved in child labour, of whom 64 million are girls and 88 million boys. Worldwide, one in ten children is in child labour. Nearly one-third of children in child labour in the age group of 6–14 years do not attend school, which amounts to 36.1 million children in child labour who are out of school. A large body of research relates low school access with child labour; it is a major cause of primary-school children dropping out, and they subsequently have less opportunity to continue their education (UNICEF & UIS, 2014).

While most children in child labour belong to the poorest families, costs involved in schooling — particularly the purchase of books, study materials and uniforms — are also factors contributing to dropout. In various developing countries where free textbooks are provided as well as fee-free schooling, families still bear major expenses to send their children to school, including buying school uniforms and
extra textbooks, and paying for transportation. Negative perceptions about the quality and relevance of public-school education also force many parents to send their children for private tuition (Biswal, 1999; Bray, 1999; Sujatha, 2014).

**Poverty**

There are also opportunity costs involved in sending children to school, which reflect the earning the child could have brought home if not in school. Poorer families may need this financial support to survive. Because of cost considerations, women and children from families with low incomes are more at risk of not attending or prematurely dropping out from school. There is evidence that children from poorer families are more prone to illness and are undernourished, so families must invest more in their health and care, which cuts their expenditures on education. Children with frequent illness also struggle to concentrate on their education, which has a negative bearing on their learning outcomes. As a result, the perceived gains from schooling fall to such an extent that families withdraw their children from school (Boyle et al., 2002; Colclough et al., 2000; Porteus et al., 2000).

The situation is more critical for girls/women in India, Bangladesh and Pakistan, as the parents in these countries are least interested in investing in girls’ education rather than or in addition to boys’. This is because parents believe the benefits of a girl’s education will be lost, since the girls leave the parental home after marriage, as per cultural practice; parents also aspire to marry off their daughters at an early age (UNICEF & UIS, 2014).

In the Caribbean region, the reasons for boys and girls dropping out of school are related to underlying gender values and issues. Young women, who are in need of money for survival, get involved in relationships with “itinerant” male partners and sometimes resort to engaging in a form of transactional sex, resulting in pregnancy. Thus, most of them drop out due to unwanted pregnancy and the need to take care of the children (Peebles, 2014).

**Household care**

Expectations related to the gendered division of labour also contribute to low participation in education. In the Caribbean region, this division at the household level means that females have less time to take part in either part- or full-time education, regardless of the course-delivery mode. Lingering gender beliefs and social norms allocate the primary responsibility for family care to females, so they have less time for studying and drop out from education (Peebles, 2014).

Another major factor behind gender inequality in education is the lack of adequate sanitation in schools. Numerous schools do not have separate toilet facilities for girls. This becomes a major problem when they reach adolescence, and many girls simply choose to leave schooling.

**Lack of barrier-free facilities**

The World Disability Report 2011 indicated that children with disabilities are less likely to start school than children without disabilities and are more likely to drop out. Gaps in education completion rates between children with and without
disabilities are found across all age groups in low-income and high-income countries, but the patterns are more visible in poorer ones. The report estimated that at that time, over one billion people, or 15% of the world’s population, were living with some form of disability, and the number of children aged 0–14 years with disabilities was 93–150 million. The 2011 EFA Global Monitoring Report estimated that 90% of children with disabilities in the developing world did not attend school. The main reasons for learners with disabilities not accessing education or dropping out from school are the absence of the physical infrastructure they require, the lack of even minimal support services, such as special education teachers, and the lack of therapy services. Female learners with disabilities are more likely to drop out than male learners when schools lack the basic infrastructure they need (Women Enabled International, n.d.).

Biased curriculum content
Curriculum content created through a gendered lens directly or indirectly exacerbates gender inequality in education (Peebles, 2014; Sadgopal, 2003; Velkoff, 1998). When content portrays women and men as having unequal value — for example, through illustrations, case studies and narratives — stereotypes and inequality of opportunity are strengthened. Many examples used in schools in the Caribbean region portray existing social practices that do not challenge gendered inequalities, resulting from the expectation that females and males perform different familial roles. Research on 20 textbooks for History, Geography, and Social Studies courses in the Caribbean Examination Council (CXC) curricula, used at the secondary level in Commonwealth Caribbean states, revealed the textbooks to be heavily gender biased (King & Morrissey, 1988).

Gender socialisation and macho-masculine identity
The family is the primary unit of socialisation wherein implicit and explicit expectations of appropriate behaviour for both males and females are articulated. This process begins quite early and is influenced not only by the family, but also by various other social factors, such as religious institutions, media, peer groups, neighbourhoods and social networks (Clarke, 2005). One of the most prominent discourses that arise from these institutional networks and structures is hegemonic masculinity. While the construction of a hegemonic masculine identity is often “historically and culturally situated” (Clarke, 2005, p. 2) and has multiple dimensions, hegemonic structures and discourses (Cuttance & Thompson, 2008) also influence participation in education and other experiences by creating normalcy around a particular form of masculinity that overemphasises physicality, strength, sexuality, sporting abilities and social dominance (Martino, 1996). These discursive elements also influence social practices. For example, the gendered articulation of hegemonic masculinity typically results in the division of household duties, with girls relegated to household tasks and boys to “heavy” outdoor work (Clarke, 2005). This results in social expectations that male members must go out and earn to support the family. A study in Belize reveals that boys often drop out from school at an early age to support the family, as males commonly think that education is a waste of time and that it is more productive to earn an income when they are young rather than invest in their long-term future (Peebles, 2014).
As in Belize, more boys drop out than girls in many Caribbean countries, the inverse situation to most other parts of the world. The primary reasons for boys dropping out are lack of family and financial support, lack of interest in classes, and poor behaviour. The dropout rate is very high at the primary level, so boys are falling behind in literacy levels compared to girls (Peebles, 2014). Further, there is a societal expectation that male members in the family are responsible for keeping the family going and for protecting their sisters and mothers. Males must bear family expenses even when they are quite young. This puts a great deal of burden on male children to become family breadwinners at an early age, leading to the high dropout rate and poor academic performance of boys in the Caribbean region at the primary school level.

Open Schooling as a Potential Option for Women’s Education and Livelihoods

Open and distance learning (ODL) — and more specifically, open schooling — has been seen as a great liberator, bringing education to the doorsteps of those who are deprived and excluded. Over the years, governments have actively promoted ODL as a viable means for reaching out to the unreached and for overcoming the gaps that conventional face-to-face education has been unable to fill. Women are considered a major segment of society who can and have benefited from the ODL system; its flexibilities are regarded as suitable for meeting women’s educational requirements and strengthening their education (Prummer, 2000).

Girls’ education is viewed as an integral part of every aspect of development (Murphy et al., 2009). However, a large chunk of the population belonging to marginalised groups, particularly girls in rural areas, are unable to access education, and even those who continue for some years often drop out due to multiple domestic, community and social factors. This situation has led to the emergence of open schooling systems in many developing countries in South Asia, such as Bangladesh, India and Sri Lanka, in African countries, such as Botswana and Namibia, and in the Caribbean in Trinidad and Tobago (Abrioux & Ferreira, 2009). In India, the National Institute of Open Schooling (NIOS) at the national level, and various state open schools at the state level, enrol students who wish to study through the open schooling system.

Typically, an open school offers learners the following advantages:

1. **Access:** The motto of open schooling is reaching the unreached — in effect, taking education to learners’ doorsteps. Open schooling is accessible in terms of reading materials being available online, study centres being located near or within the locality, etc. Thus, in communities that frown on a girl leaving the home for education, girls can continue their education uninterrupted. If at-home study is not possible, though, and a study centre is too far away, girls drop out of courses (Priyadarshini, 2019). In the Caribbean region, the key issues limiting impoverished young women’s access to education include finances, low self-esteem, childcare and remoteness. Many females have young children they need to look after at home. Without childcare support, distance learning is not possible, so they often fail to participate in open learning programmes.
2. **Flexibility and choice:** An open school provides the opportunity to study more subjects and take courses not available in the immediate area. As well, students who need to take other classes or to work can study whenever they have free time instead of being restricted to a rigid schedule. A point of concern is that due to the massification of education, those courses suitable for women but with low enrolment are sometimes closed down in favour of those that have large enrolment (Priyadarshini, 2016). For example, an NIOS vocational course on “Toy Making and Joyful Learning” was closed due to low enrolment, even though it was very suitable for women.

3. **Pace:** Open schooling enables students to work at their own pace in many circumstances, providing opportunities for learners of any age group to continue their education. As the large numbers of female learners who drop out from school at an early age due to early marriage or other reasons have no chance to rejoin formal schools, open schooling can be a boon to help them complete their educations and build their skills. There are numerous instances of adult women of all ages using open schooling for skill development. For example, female learners over 40 are known to benefit from vocational courses offered by NIOS (Mohapatra & Mahapatra, 2016); in 2018–19, more than 5.6% of the female learners enrolled with NIOS were over 40 (NIOS, 2019). Typically, learners can enrol in open schools year round and take examinations whenever they are ready, as is the case at NIOS.

4. **Cost:** Open schooling typically costs less than education in a classroom environment. There are fewer space limitations and fewer materials required for each student, bringing the cost per student down. Partly because parents perceive investing in boys’ education to yield greater returns than educating girls, there is clear evidence of less expenditure on girls’ education at all levels (Tilak & Chaudhury, 2018). As open schooling has a lower fee structure than formal education, it attracts enrolment by girls and women.

Because open schooling provides the opportunity to access education without barriers of time and place, even female learners who are busy in the household or job sector can access education in their free time. Thus, open schooling has an education multiplier effect, even where women are burdened by various social, cultural or economic limitations.

**Innovative Practices**

This section discusses in detail several specific programmes/projects targeting girls’ education in various developing countries.

**Project Hunar, India**

“Hunar” means “skill” in Urdu. The Hunar skill development programme was devised by NIOS with the objective of encouraging school education and the simultaneous development of skills among Muslim women in India. The objective was to impart skills training to Muslim girls in seven vocational courses during 2008–9. A total of 13,768 Muslim girls were provided skills training in courses such as Cutting, Tailoring and Dress Making; Basic Rural Technology; Jute
Production; Bakery and Confectionery; Beauty Culture; and Early Childhood Care and Education. These courses were in addition to the academic subjects they studied, which included one language and three other subjects. Looking at the socio-cultural realities, madrasa and institutions for the betterment of Muslims were chosen as nodal agencies for running the project. Out of 13,768 girls, 11,347 passed their examinations and earned certificates in their respective trades. Notably, not a single learner dropped out of this programme. It not only gave women access to education but also empowered them to have meaningful livelihoods. Under the scheme, each candidate on completion of her training was given a grant of Rs 2500 to purchase equipment to start her own enterprise. Another landmark step in this direction, taken by the Government of Bihar, was that girls who had excelled in Hunar Phase I were engaged as teachers/instructors in Phase II of the project.

Based on the successful outcomes of the first phase, Phase II, in 2010–11, targeted 50,000 girls who were Muslim or members of the SCs, STs or OBCs. About 45,298 students enrolled for this programme. In addition to the 298 study centres under Phase I, 723 new study centres were identified for the programme so that girl learners from other remote areas could be reached. On similar lines, NIOS intervened to help educate Muslim girls through the Hunar Programme in Delhi. Approximately 16 agencies were identified to enrol and provide skills training to the girls free of cost. About 1,600 girls were enrolled. Although girls from minority groups had been prevented from attending formal schools due to traditional religious beliefs, Project Hunar gave them the opportunity to study through different agencies in nearby areas. These study centres were specifically identified to remove barriers caused by distance and cultural taboos that were preventing girls’ entry to formal education institutions. The programme not only gave new learners the scope to excel but also opened pathways for their empowerment (Bisht, 2012; Mahapatra, 2013).

Vocational training in girls’ schools, India

The Kasturba Gandhi Balika Vidyalayas (KGBV, meaning “girls' schools”) scheme was launched by the Government of India in August 2004 to set up residential schools at the upper primary level for girls belonging predominantly to the SC/ST/OBC and minority communities in India’s “Educationally Backward Blocks.”

A hundred and fifty KGBVs in Rajasthan from 33 districts became NIOS study centres and have been offering skills-based vocational courses to girls since 2010. The girls do these courses along with their regular school subjects. Two skill development courses were chosen: Cutting and Tailoring, and Beauty Culture. The students are usually aged 12–16. A survey carried out by NIOS indicated that girls who acquired these skills felt empowered, and their parents were proud of their transformation. The training provided an opportunity for the girls to turn into a productive work force and enhance their chance of having a dignified livelihood. Many girls started earning by doing small jobs in tailoring and beauty culture, subsequently developing sustainable incomes. The economic condition of their families also improved. Collaboration between NIOS and the KGBVs

27 SCs = Scheduled Castes, STs = Scheduled Tribes, OBCs = Other Backward Classes, as defined by the Government of India.

28 Educationally backward blocks mean blocks where the female literacy rate is below the national average of 46.13% and the gender gap in literacy is above the national average of 21.59%; see https://bit.ly/2Uiaj5j.
for vocational training was considered a good practice, but it runs the risk of reinforcing gender stereotypes through the courses it offers.

**GIRLS Inspire project**

GIRLS Inspire, a project of the Commonwealth of Learning (COL), aimed to mobilise the power of ODL to offer secondary schooling and skills development training opportunities to girls and women who were prevented from attending schools due to various kinds of barriers, such as early marriage, cultural norms, and distance from schools. COL worked in partnership with different community-based organisations in Bangladesh, Mozambique, Pakistan and Tanzania. The project was based on three pillars — communities, learning institutions, and the girls themselves — to empower the countries’ most vulnerable and hard-to-reach women and girls. Gender-sensitive learning resources were developed to provide training in life skills and vocational skills, and women and girls were linked to prospective employers and micro-financing institutions. The success of the project not only resulted in increased participation of women and girls in schooling and skills training but also led to the prevention of 1,181 child marriages. Some 63,010 women and girls were trained, of whom more than 11,000 achieved increased access to income-generating activities and 6,645 gained employment (Ferreira, 2019; Kanwar & Ferreira, 2019).

**Vocational training, Belize**

In Belize, several specialised programmes targeted students who had dropped out or were otherwise at risk. These programmes include apprenticeships, a cadet-style education, and vocational training that provided second-chance opportunities for acquiring skills to become self-employed or gainfully employed.

In Belize, vocational training is provided mainly through the Institutes for Technical and Vocational Education and Training (ITVET). ITVETs have been established in each region to substitute for the system of vocational education and training formerly offered by employment training centres. The minimum age for enrolment was 15, but many learners older than this also joined. However, it was found that since the academic standards of the ITVETs are higher than those required by the employment training centres, the courses were not accessible for male and female primary school dropouts. The lesson learned from this project was that to reach at-risk youths, vocational education and training needs to be supported by some type of transitional programming that will facilitate young people’s entry into the more formal training programmes. A study (Peebles, 2014) revealed that male dropouts will choose to attend an ITVET rather than return to high school — even if they have to spend an additional one to two years in a preparatory pre-vocational programme to be eligible for further training. This is mainly because male youths perceive that it is better to move forward in a career and gain job opportunities by acquiring skills-based qualifications than to return to high school to complete their secondary education. The desire for such vocational training is primarily related to perceived male gender roles and behaviours, as men aspire to higher-status occupations and activities. The study also noted that males prefer short-term programmes with a quick turnaround and completion time, whereas females prefer to pursue a two-year diploma.
programme or associate degree. These trends and expectations among males and females point to the pressures on males to earn an income from a fairly early age, and a societal acceptance of females as economic dependents, stemming from underlying social gender values that influence the decisions of both males and females to opt for courses of different natures and durations. The key lesson from this initiative was that there should be mechanisms to offer a range of programmes and strategies that try to address the different priorities and needs of both male and female youths, and to consider the effects of prevailing gender roles on the choices young women and men make.

The study related to this programme revealed that at-risk youths benefited from this type of training but often required a lot of additional non-academic support, particularly about employability skills. It was also noted that general life skills are critical components that need to be incorporated into any ODL programming for at-risk youths. Along with some common skills, gender-specific components need to be the part of the training programmes. Female youths would benefit from learning how to build their self-esteem, how to deal with gender-based violence, and how to support their children, as well as from opportunities to think beyond traditional, low-paid occupations. For male youths, a gender-specific training component could include parenting skills, anger management, and learning to set and keep longer-term goals (Peebles, 2014).

**Youth employment training, Belize**

In 2011, a new youth employment programme was started in Belize, initially for trades such as barbering, IT repairs, sewing, arts and crafts, juice making, and front desk work. Subsequently, 15 trades/skills were added. The programme began with 135 male and female students from Belize City. Additional training in mathematics, English and life skills was included with each trade/skill. As the programme designer was aware trainees might be thinking instead about the easy money they could earn from criminal activities, there was a mechanism for them to gain short-term training such as in the repair of shoes, suitcases and small appliances, which had the potential for generating some immediate income. There were options for both shorter-term basic skills training and longer-term, more advanced skills training courses that could serve as a means of increasing young men’s participation in other skills training programmes in the Caribbean. As large numbers of youths in the Caribbean are at risk, are unemployed and have relatively low levels of education, there is a significant need to offer them skills training (Peebles, 2014).

**Conclusion**

The most critical issue in ODL still remains that of access and equity in education. Many studies from Africa and South Asia have investigated women’s low participation in ODL and identified the main reasons for this phenomenon (Mensa & Ahiatrogah, 2008). Educational deprivation related to socio-economic, cultural and religious factors is also well documented. In concluding, it needs to be reitered that open schooling is of great importance for achieving gender equality in education in developing countries. Although various countries have made efforts to achieve universal enrolment and participation, accessibility to
schooling — particularly for girls and women in difficult circumstances, from migrant families, and in poorer sections of society — still remains a problem in many developing countries. While there are no shortcuts or magic formulas to address the acute problem of gender inequity in education, considering the grim realities and underrepresentation of girls and women in education, an integrated approach that includes open schooling is highly desirable to achieve meaningful change and sustainable impacts. Providing just eight years of schooling is not going to ensure significant added value. As research from the Hunar project and GIRLS Inspire has revealed, providing relevant and good-quality vocational and life skills educational opportunities through open, distance and technology-enabled education is necessary to achieve gender equality in education.

References


Abstract: Open schooling makes use of open and distance learning methods to create greater access to schooling-level learning opportunities for children, youths and adults who otherwise cannot access such opportunities. However, an enabling policy framework is needed to make this possible. This chapter explores some of the issues that policy needs to address, including accreditation and funding mechanisms.

Introduction
The chapters preceding this all indicate that policy issues need to be addressed to enable the development and successful implementation of open schooling. A key shift that has taken place in open schooling provision in recent years is a move away from print-based and face-to-face supported models towards greater digitisation. Therefore, the discussion in this chapter begins with a consideration of the implications of this shift.

Chapter Goals
This chapter seeks to identify the key policy issues that need to be addressed to support successful open schooling. Open schooling requires the use of open and distance learning (ODL) approaches at the schooling level. Few countries have clear national polices on ODL provision, and fewer still have national policies on ODL provision for schooling. But if a country wishes to develop an integrated schooling system of the kind illustrated in Figure 1 in the introduction to this book, there needs to be a policy framework that is conducive to ODL provision. This chapter explores the issues that such a policy framework probably needs to address.
Open and Distance Learning in a Digital Era: Key Issues

This section of the discussion speaks primarily to the issue of definition: how is ODL to be understood and practised in an era of increasing digitisation and online learning? The following five interrelated issues are discussed:

- **key concepts**
- **modes of provision**
- **learning models**
- **business models**
- **quality assurance**

**Key concepts**

In this discussion, key concepts are understood as follows (Mays, 2018, p. 5–6):

- **Distance education (DE)** is the provision of educational opportunities in ways that do not necessarily require the educator and the learner to be in the same space at the same time. It implies a commitment to the provision of learning resources appropriate for independent learning, to decentralised learning and learner support, and to the provision of an equivalent learning experience and a reasonable chance of success across diverse contexts for a distributed and heterogeneous student body. Distance provision can support open learning principles, but not all distance provision is open (DHET RSA, 2017; Moll, 2003).

- **Open (and) distance learning (ODL)** is the provision of distance learning opportunities in ways that seek to mitigate or remove barriers to access and success, such as: finances; prior learning; age; social, work or family commitments; disability; incarceration; or other such barriers. Being “open” indicates a commitment to overcoming any unnecessary barriers to accessing learning, including but not limited to providing support for learners with disabilities, as well as processes for recognition of prior learning (RPL), and it further implies a commitment to progressively opening student choice regarding what, how, where, when and through what modality to learn and be assessed (DHET RSA, 2017; University of South Africa, 2008).

- **eLearning** indicates that the curriculum is communicated and mediated primarily through digital means; eLearning can happen in both offline and online learning conditions and both on and off campus (Arkoful & Abaidoo, 2015; Council on Higher Education, 2014; Glennie & Mays, 2013).

- **Open, distance and eLearning (ODEL)** is the provision of open and distance learning in forms in which eLearning — learning via various forms of electronic technology — is a key component or even the primary means of mediating the curriculum (CHE, 2014; Glennie & Mays, 2013).

- **Online learning (OL)** involves learning opportunities that are mediated entirely online — all learning resources are available online in digital format, all interaction is mediated online, and all assessment is completed
and feedback provided online. There are no requirements for physical resources or physical meetings (Mayadas et al., 2015).

- **Learning model** – the conscious design decisions made about what to teach, how to teach and how to support and assess, including the theoretical, practical and policy reasons for these decisions (Capacho, 2014; Rahimi et al., 2014).

- **Business model** – the policies, systems, resources and procedures an organisation consciously puts in place in order to realise its vision and deliver on its mission (Osterwalder et al., 2005; Tian & Martin, 2014).

One of the expectations of a supportive policy framework is that it provides clear definitions of what is understood by the policy, the scope of what it seeks to influence and why. Where similar terms are often used interchangeably, it is also important that the distinction between policy and regulatory purposes be made clear (Balfour et al., 2015). In addition, while it is acknowledged that distance education methods can support an open learning agenda, distance provision is not necessarily open unless designed to be so, and therefore policy statements need to be clear on issues of social justice and social inclusion in promoting open learning or ODL and the reasons for and modalities thereof (DHET RSA, 2014; Stagg & Bossu, 2016).

Given the financial issues discussed in Chapter 6, it is also important that an understanding be created about the variety of learning models that might need to be considered and then the different business models that might support them, which might then require different funding approaches (Mays, 2017). A core decision providers need to make, informed by learner needs and contexts of learning, as well as institutional capacity, relates to the appropriate mode of provision. The policy and regulatory framework must articulate clearly what is expected in general as well as what is expected with respect to the modality selected. However, four elements will be key considerations for any form of distance provision of open schooling: learning resources, pedagogy, learner support and administration (COL, 2020).

**Modes of provision**

As noted in Chapter 4, open schooling is increasingly making use of technology-enabled learning (TEL) methods. The diagram in Figure 17 illustrates a grid of possibilities for degrees of TEL integration, developed by Saide (Glennie & Mays, 2013) and subsequently incorporated into policy (DHET RSA, 2014) and accreditation guidelines (CHE, 2014) in South Africa.
As can be seen from the grid, there is a range of possibilities for mode of provision, and these may include:

1. an offline programme offered to widely distributed students but including digital support such as podcasts and videos loaded onto a tablet or flash drive;
2. a part-time programme with face-to-face contact support offered in several satellite centres, some digital resources, and optional online discussion forums;
3. a large, classroom-based programme offered on the main school campus as well as on a variety of satellite school campuses;
4. a fully online programme offered to students all over the world;
5. a fully online programme that students access in computer labs or by using their own devices in Wi-Fi hotspots on campus.

The question then arises: Which of these examples should be classified as ODL provision?

As student needs and institutional capacity change, the mode of provision might migrate over time (e.g., from B to B1 or B2). Making informed decisions about what mode or technology to use, and how, requires insight into learner profiles and learning contexts, including the implications of possible cross-border provision, clarity on the relative benefits of the decisions made, and systemic and institutional agility (Baijnath, 2013; DHET RSA, 2014; Firdhous, 2016; Lo, 2017; UNESCO, 2005). Of course, in a developing country context, availability of and access to ICT cannot be assumed, especially in the schooling context, and
institutional leadership may play a significant role in the extent to which these issues are addressed (Macharia & Pelser, 2013).

Glennie and Mays (2013) refer to a third dimension, pedagogy, which is not illustrated in the grid in Figure 17, but which will nonetheless have a fundamental impact on the learning and business models adopted. In this instance, pedagogy is used as a more general term for the assumptions about learning that underpin practice and the ways in which an understanding of learners and learning contexts influences the choices made (Beetham & Sharpe, 2013). This broad understanding subsumes other more audience-focused lenses such as andragogy, heutagogy or even ubuntugogy. Reflecting on 12 years’ experience with the role that ICT has played in the UK, Caird and Lane (2015) identify four major teaching models: face-to-face teaching models, distance teaching models, ICT-enhanced blended teaching models and online teaching models. However, as Amory, Bialobrzeska and Welch (2018) illustrate, every teaching and learning context is unique and involves making choices along a series of continua of possibilities, as illustrated in Figure 18.

![Pedagogic choices that need to be made](image)

Source: Amory et al., 2018, pp. 241–258

**Figure 18: Pedagogic choices that need to be made**

In a similar vein, the following extract from the University of the South Pacific (USP) *Policy on Flexible Learning* (USP, 2017, p. 5) indicates a range of possibilities rather than rigid fixed positions:

- A useful approach to embedding flexibility is to see it in relation to how, and to what extent, flexibility is being integrated in leveraging key dimensions of learning and teaching, and these are as follows:
• **Learning experience design** – this is about the design and development of productive learning experiences so that each learner can make the most of the learning opportunities they afford.

• **Learner–content engagement** – this is about learners’ engagement and interaction with the subject matter in ways that suit individuals, their styles and approaches to studying, and its time, place and pace.

• **Learner–teacher engagement** – this is about choices learners have in relation to the mode and method of their engagement and interaction with their teachers and tutors.

• **Learner–learner engagement** – this is about choices learners have in relation to the mode and method of their engagement and interaction with their peers in small and large groups, and in offline and online educational settings.

• **Learner engagement with the learning environment** – this is about adaptable access, interaction and engagement with the learning environment (such as with mobile devices, Wi-Fi access and innovative use of study space).

• **Learner engagement with assessment activities** – this is about choices learners have in relation to the fulfilment of their assessment requirements.

• **Learner engagement with feedback** – this is about choices learners have in relation to access to feedback on their learning and assessment activities.

• **Learner engagement with the institution** – this is about choices learners have in relation to their engagement with the services of the educational institution.

Policy, regulation and funding guidelines must therefore be flexible enough to accommodate this diversity; in a digital era, it is clearly no longer simply a question of contact or distance, as discussed in Chapter 4. Even if a country currently has distinct contact or distance institutions, actual models for provision between different programmes may vary widely. Conversely, we can also anticipate greater convergence as formerly “contact” schools begin to offer “flipped classroom,” online and flexible modes of provision (Evans, 1999; Khan, 2012; Naidu, 2017; Richardson, 2012). Hence USP’s adoption of the notion of “flexible” learning. In such circumstances, it will be important to know precisely when the provisions of an ODL (or ODeL) policy will apply.

It also seems important to recognise and plan for the impact of moving into different modes of provision on both students (Delaney & Brown, 2018) and staff (Fresen, 2018), especially given that in most instances, it involves formerly contact institutions such as public day schools embracing more flexible ways to offer provision.

**Learning models**

For several reasons, retention, throughput and pass rates in distance programmes (typically targeted primarily at working or second-chance adults) are usually
lower than in contact-based versions of the same programmes (for example, after-hours classes typically target school-leavers in the 18–23 age group) (DHET RAS, 2016; Simpson, 2013). It is therefore important for the policy and regulatory environment to require distance providers to articulate how they will support learners to ensure that access involves a reasonable chance of success; as discussed in Chapter 2, learner support should be an integral part of the programme design process.

In a typical higher education contact programme, students may spend only 30% of their time in campus-based and staff-led activities. In certain kinds of distance programmes, such as fully online programmes, it may well be 0%. In a post-COVID school environment, older learners are likely to spend at least part of the time working independently, to help schools manage physical distancing and cleaning requirements. So how do providers support students when they are working independently?

There is a need to design a learning model that is appropriate for the learning purpose, the students’ needs and expectations, and the context(s) in which the learning will happen (Abrahams & Witbooi, 2016). As an example, Figure 19 shows the decisions made regarding the learning model underpinning a BEd Honours programme offered to in-service teachers through a Unit for Distance Education at the University of Pretoria in South Africa.

![Figure 19: Learner support as an integral part of the learning model](image-url)
As will be noted from Figure 19, and as explained by Mays (2017, p. 94), there is an explicit agenda in the implementation model to maximise student engagement with content and to de-emphasise student reliance on academic and support staff, in line with what both research (Bernard et al., 2009) and policy (SAQA, 2012) suggest. It will be noted that UP planned to offer decentralised ICT and elibrary training at the start of the students’ journey; to offer optional additional orientation and consolidation contact sessions during the learning journey, but also to track student engagement and intervene at increasing levels of concern about students potentially at-risk as the learning journey unfolded. Realising that students study in diverse contexts, UP UDE opted for a blended model of provision which has print, face-to-face contact and online components. This means that much of the work that students need to do can be completed offline, but that they will need to participate online at least some of the time (a requirement that was communicated to students during the marketing and registration processes and which they needed to acknowledge). It was hoped that an adaptive release strategy employed in the university’s BlackBoard-based LMS, clickUP, would motivate engagement, while the Gradebook and Retention centres in the LMS would allow UP UDE to track that engagement and intervene proactively in the case of inactivity. Once students had completed the formal structured part of the programme, UP UDE would explore an engagement with Open Educational Resources (OER) as a way of helping them both to consolidate what they had learned, but also possibly to contribute to the creation of new knowledge.

What should also be noted is a deliberate attempt to ensure a clear linkage between student and programme learning goals, exit level outcomes, summative assessment tasks, formative assessment tasks, in-course activities, and constructive, timely feedback. These design decisions were informed by Hattie’s (2009) meta-study, which concluded that the two most important contributors to student success are student motivation (so activities must be worth doing and clearly linked to learning goals) and individualised constructive feedback from teachers (so students know what they did well and how they can do better).

Clearly, there are significant costs involved in designing appropriate ODL programmes; in developing the necessary resources and systems to support them; in implementing the programmes in a supportive way (online support, decentralised contact support, assessment feedback, administrative support, etc.); and in establishing appropriate monitoring, intervention and review processes. Hence, the policy and regulatory framework should be structured to guide the business models that underpin ODL provision, thereby ensuring that programme offerings are viable and sustainable.

**Business models**

For sustainable, quality, flexible provision, it will be necessary to ensure that the business models developed for ODL provision are:
financially sustainable for the institution and consistent with institutional vision, mission and core values;

financially sustainable for a changing student demographic and responsive to their needs; but also

financially sustainable and rewarding for staff. (du Vivier, 2010; Gregory & Lodge, 2015; Kennedy et al., 2015; Mays, 2011)

As Mays (2018, p.1) observes:

Traditionally, distance education has sought to open access by achieving scale, quality and lower cost at the same time. It is argued that in traditional face-to-face institutions it is impossible to increase access and quality without increasing cost. The notion of an “iron triangle” is then useful to illustrate the fixed relationship between access, quality, and cost in “contact” institutions. It is suggested that this iron triangle has hindered the expansion of education throughout history. It has created in the public mind an insidious link between quality and exclusivity (Daniel, Kanwar, & Uvalič-Trumbić, 2009). This link still drives the admission policies of many universities, which partly define their quality by the people they exclude (Tait, 2017). It is then suggested that for open and distance education, the iron triangle need not hold: that it is possible to increase access and quality without substantially increasing cost per student.

... However, Cleveland-Innes and Garrison (2010, p. 255) point to the lack in recent years of new theory on distance education and identify “a conceptual divide between traditional distance education and online learning” which needs to be addressed. Moreover, Kanuka and Brooks (2010, p. 84), based on their experience and research, argue, “We conclude ... open and constructivist distance education can achieve any two of the following: flexible access, a quality learning experience and cost effectiveness — but not all three at once.” This is a highly problematic finding for a context in which post-schooling provision needs to grow considerably and distance education is seen as an important vehicle through which to work at scale. In other publications, Hülsmann (2016) and Hülsmann and Shabalala (2016) have noted the apparent contradiction between traditional distance education concerns with high enrolment programmes leading to economies of scale and the ways in which digital technology supports cooperation and collaboration for relatively small group sizes.

Clearly, then, there is need to revisit learning, business and funding models for ODL provision in a digital era. Following Osterwalder, Pigneur and Tucci (2005) as well as Tian and Martin (2014), we might expect institutions to develop an overview similar to the example in Table 10.
Table 10: Illustrative business model for open schooling (adapted from Mays, 2016b)

<table>
<thead>
<tr>
<th>Key partners</th>
<th>Key activities</th>
<th>Value proposition</th>
<th>Customer relationship</th>
<th>Customer segments</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ministry of Education – policy and funding</td>
<td>• Teaching, learning and assessment</td>
<td>To provide access to quality open schooling opportunities informed by the vision, mission and values of the school</td>
<td>Students expect high-quality educational opportunities that are affordable and flexibly designed to meet their needs and aspirations</td>
<td>• Primary</td>
</tr>
<tr>
<td>• External funders of school projects</td>
<td>• Review and improvement</td>
<td></td>
<td></td>
<td>• Out-of-school children (OOSC) aged 5–18</td>
</tr>
<tr>
<td>• Community organisations</td>
<td>• Community engagement</td>
<td></td>
<td></td>
<td>• Secondary</td>
</tr>
<tr>
<td>• Parent–teacher associations</td>
<td></td>
<td></td>
<td></td>
<td>• Not in employment, education or training (NEET) youths aged 18–23 seeking a second chance to complete or improve schooling</td>
</tr>
<tr>
<td>• Teacher unions</td>
<td></td>
<td></td>
<td></td>
<td>• Adults aged 24+ seeking a second, schooling-equivalent opportunity</td>
</tr>
<tr>
<td>• Accreditation agencies</td>
<td></td>
<td></td>
<td></td>
<td>• Children of families in diaspora</td>
</tr>
<tr>
<td>• Potential employers of school graduates</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Internet service providers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key resources

<table>
<thead>
<tr>
<th>Key resources</th>
<th>Key activities</th>
<th>Value proposition</th>
<th>Customer relationship</th>
<th>Customer segments</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Infrastructure for teaching and learning, assessment and community engagement</td>
<td>• Teaching, learning and assessment</td>
<td>To provide access to quality open schooling opportunities informed by the vision, mission and values of the school</td>
<td>Students expect high-quality educational opportunities that are affordable and flexibly designed to meet their needs and aspirations</td>
<td>• Primary</td>
</tr>
<tr>
<td>• Strong ICT backbone</td>
<td>• Review and improvement</td>
<td></td>
<td></td>
<td>• Out-of-school children (OOSC) aged 5–18</td>
</tr>
<tr>
<td>• Committed teachers</td>
<td>• Community engagement</td>
<td></td>
<td></td>
<td>• Secondary</td>
</tr>
<tr>
<td>• Strong strategic and operational management</td>
<td></td>
<td></td>
<td></td>
<td>• Not in employment, education or training (NEET) youths aged 18–23 seeking a second chance to complete or improve schooling</td>
</tr>
</tbody>
</table>

Cost structure

<table>
<thead>
<tr>
<th>Cost structure</th>
<th>Revenue stream</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each programme should cover its own direct costs of development, implementation and review but also contribute towards the overhead of the institution.</td>
<td>• Government subsidy is usually the primary source of funds for OOSC.</td>
</tr>
<tr>
<td></td>
<td>• Fee income is usually the primary revenue source for older learners.</td>
</tr>
<tr>
<td></td>
<td>• Fees are paid on an annual or term basis.</td>
</tr>
<tr>
<td></td>
<td>• Optional short courses and year courses should be paid in full up front and could cross-subsidise OOSC provision.</td>
</tr>
</tbody>
</table>

The bold headings in Table 10 indicate the areas requiring clarification.

For each programme, we would then expect an institution to develop an activity-based budget and to verify that what they propose is both viable and sustainable. We probably would not expect actual budgets, but we would expect some evidence that the issue of budgeting has been adequately addressed.

As an example, providers in Lesotho are requested to address this issue in the initial and review stages of accreditation, as illustrated below:

2.1.2 Financing of the programme

The planning of the programme is directly linked to the budget processes, the amount of resources that are allocated and the sustainability of the funding models used.

[Insert a descriptive, evaluative and reflective discussion that relate to how the programme performed on this standard as identified during the self-evaluation. This should evaluate strengths and weaknesses in the context of constraints, threats and opportunities in which the programme is running.

It should also show the interconnectedness of the various elements of strategic planning and quality management in the provision of the programme. It should take into account changes that have taken place in the programme in the recent past as well as ones anticipated in the future.] (CHE Lesotho, 2019, p. 7)
As discussed in Chapters 3 and 7, the adoption of OER and OEP could be a way to ensure that both quality and cost issues are addressed together, and this should be encouraged by policy. Clearly, however, there is a danger that providers might not do what is expected and thus compromise quality. Quality assurance is therefore a fifth key issue that needs to be addressed in a policy framework.

Quality assurance

On the issue of quality assurance, Mays (2017, pp. 122–124, edited) provides the following useful overview:

In many contexts, the regulation of ODeL provision is managed by people whose education experience has been full-time and campus-based: it is therefore not surprising if the political rhetoric about opening access is often not reflected in the regulatory framework.

[For example, p]rogrammes offered in higher education in South Africa are subject to approval by the Department of Higher Education and Training (DHET), for funding and planning purposes, and accreditation by the Council for Higher Education (CHE) for quality purposes.

The CHE divides its accreditation process into candidacy (planning and resourcing) and accreditation (practice, impact and review) phases (although there is no longer a guaranteed systematic institutional follow-up on the latter due to capacity constraints), as illustrated below. The issues identified, and the key questions that underpin them, also provide lenses for self-evaluation of the programmes and courses that form an institution’s programmes and qualifications mix (PQM). The broad framework of these requirements is set out in Tables 11 to 14 (CHE, 2004a, 2004b).

Table 11: CHE accreditation candidacy phase: criteria for programme input (1–9)

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Programme design</td>
</tr>
<tr>
<td>2</td>
<td>Student recruitment, admission and selection</td>
</tr>
<tr>
<td>3</td>
<td>Staffing – qualifications, experience, research, staff development</td>
</tr>
<tr>
<td>4</td>
<td>Staffing – size, procedures for selection, full-time and part-time</td>
</tr>
<tr>
<td>5</td>
<td>Teaching and learning strategy</td>
</tr>
<tr>
<td>6</td>
<td>Student assessment, policies and procedures</td>
</tr>
<tr>
<td>7</td>
<td>Infrastructure and library resources</td>
</tr>
<tr>
<td>8</td>
<td>Programme administrative services</td>
</tr>
<tr>
<td>9</td>
<td>Postgraduate policies, regulations and procedures</td>
</tr>
</tbody>
</table>
Table 12: Accreditation phase: criteria for programme processes (10–16)

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Programme coordination</td>
</tr>
<tr>
<td>11</td>
<td>Academic development for student success</td>
</tr>
<tr>
<td>12</td>
<td>Teaching and learning interactions</td>
</tr>
<tr>
<td>13</td>
<td>Student assessment practices – internal and external</td>
</tr>
<tr>
<td>14</td>
<td>Student assessment practices – reliability, rigour, security</td>
</tr>
<tr>
<td>15</td>
<td>Coordination of work-based learning</td>
</tr>
<tr>
<td>16</td>
<td>Delivery of postgraduate programmes</td>
</tr>
</tbody>
</table>

Table 13: Accreditation phase: criteria for programme output and impact (17, 18)

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Student retention and throughput rates</td>
</tr>
<tr>
<td>18</td>
<td>Programme impact</td>
</tr>
</tbody>
</table>

Table 14: Accreditation phase: criteria for programme review (19)

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Programme review</td>
</tr>
</tbody>
</table>

Interestingly, and perhaps unusually, the CHE in South Africa opted to engage with the distance learning community in South Africa to provide guidelines specific to distance provision in a digital era, considering the growing number of requests for accreditation of programmes to be offered online and in blended modes (CHE, 2014).

There is considerable overlap between the key quality issues identified by the CHE in South Africa and those identified by the Commonwealth of Learning (COL) through a multinational consultation process and summarised in Table 15.

Table 15: Quality criteria for ODeL provision

<table>
<thead>
<tr>
<th>Criteria</th>
<th>No. standards</th>
<th>No. of PIs*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Vision, mission and planning</td>
<td>21</td>
<td>54</td>
</tr>
<tr>
<td>2 Management, leadership and organisational culture</td>
<td>27</td>
<td>79</td>
</tr>
<tr>
<td>3 The learners</td>
<td>7</td>
<td>19</td>
</tr>
<tr>
<td>4 Human resource development</td>
<td>7</td>
<td>22</td>
</tr>
<tr>
<td>5 Programme design and development</td>
<td>13</td>
<td>33</td>
</tr>
<tr>
<td>6 Course design and development</td>
<td>13</td>
<td>37</td>
</tr>
<tr>
<td>7 Learner support</td>
<td>15</td>
<td>49</td>
</tr>
<tr>
<td>8 Learner assessment</td>
<td>12</td>
<td>38</td>
</tr>
<tr>
<td>9 Infrastructure and learning resources</td>
<td>8</td>
<td>35</td>
</tr>
<tr>
<td>10 Research, consultancy and extension services</td>
<td>7</td>
<td>20</td>
</tr>
</tbody>
</table>

* PIs = performance indicators. (Source: COL, 2009, p. 8)
In an earlier comparison of higher education quality assurance issues in different contexts, Aluko (2007) also found a tendency towards similarity in quality concerns. More recently, a comparative analysis of quality models in online and open education around the globe, undertaken for the International Council for Open and Distance Education (ICDE), while confirming that there was a lot of agreement on what areas it was important to focus a quality assurance lens upon, nonetheless observed that there was great diversity in how these broad expectations were interpreted for different levels of maturity, that feedback was of variable quality, and that there were challenges in responding to change generally (Ossiannilsson et al., 2015).

Not surprisingly, similar quality issues are identified when considering the use of ODL in the schooling context, as illustrated in Table 16.

**Table 16: Quality criteria for open schooling**

<table>
<thead>
<tr>
<th>Number</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Policy and planning (incl. admission processes)</td>
</tr>
<tr>
<td>2</td>
<td>Learners (incl. information about past, present and future learners)</td>
</tr>
<tr>
<td>3</td>
<td>Programme development (incl. teaching and learning strategies)</td>
</tr>
<tr>
<td>4</td>
<td>Course design</td>
</tr>
<tr>
<td>5</td>
<td>Course materials (incl. OER)</td>
</tr>
<tr>
<td>6</td>
<td>Assessment</td>
</tr>
<tr>
<td>7</td>
<td>Learner and learning support</td>
</tr>
<tr>
<td>8</td>
<td>Human resource strategy</td>
</tr>
<tr>
<td>9</td>
<td>Infrastructure and resources (physical and digital)</td>
</tr>
<tr>
<td>10</td>
<td>Governance, management (including financial) and administration</td>
</tr>
<tr>
<td>11</td>
<td>Collaborative relationships (internal, national, regional, international)</td>
</tr>
<tr>
<td>12</td>
<td>Quality assurance</td>
</tr>
<tr>
<td>13</td>
<td>Advocacy and information dissemination</td>
</tr>
<tr>
<td>14</td>
<td>Results, research and community engagement</td>
</tr>
</tbody>
</table>

Source: COL (2010, 2015a)

The move from campus-based to distance and online learning hence requires that institutions think about doing some new things, and some existing things differently, with implications for staff as well as systems and processes. However, it is important to acknowledge that the same is probably true for students, who will likely need scaffolded support to transition from highly structured schooling environments to the more flexible and open possibilities of distance and online learning (Kinross & McKenzie, 2009).

More recently, Nguyen, Evers and Marshall (2017) identify a problem of a quality assurance framework that focuses only on inputs, while Nyaruwata (2018) identifies inefficient ICT systems, underqualified staff, difficult modules/subjects and lack of quality assurance policies as key barriers to maximising the use of ODL approaches by an institution originally established for traditional contact provision. In addition, as Stander and Herman (2017) observe, private
providers generally face challenges in managing quality and onerous regulatory processes: they suggest that if the private sector is seen as strategically important to achieving national goals, the solution lies not in more regulation but in more government-led capacity development in the sector.

Having identified five initial key issues from literature and practice that a policy and planning framework for ODL in general, and open schooling in particular, should probably address, we move in the next section to exploring example policies and policy discussions.

**Developing a Supportive Policy and Planning Framework**

Rizvi and Lingard (2010) observe that there is no single agreement on what a policy is or should be or how it should be constituted, but their review of the literature suggests the following important considerations for what policy should address:

- indicates what a government chooses to do or not to do; in some contexts, the absence of policy could be construed as an expression of a policy position.
- delineates a field of activity — e.g., distance education or ODL or open schooling.
- refers to the actions and positions taken by the state regarding a selected range of providers.
- is normative, indicating both ends or intents and means or actions to influence practice.
- refers to things that can be achieved in areas over which authority can be exercised.
- exists as a text that can be accessed and debated; but
- evolves from a process that is often contested and subject to review; and therefore
- is subject to ongoing modification in the process of implementation and in response to changing contexts.
- is mediated in practice by providers; and so
- is part of an ongoing discourse; and
- is usually located within a collection of related policies; and
- is increasingly influenced by global rather than only national perspectives.

As Strauss and Borenstein (2015) observe, policy can sometimes have unintended consequences — in the case of Brazil, a policy of deregulation led to a massive growth in private provision of low quality in a few disciplinary areas requiring minimal investment in infrastructure. With respect to private cross-border provision, or collaborative provision, of new possibilities such as MOOCs, Rambe and Moeti (2016) caution against wholesale adoption of programmes developed elsewhere and the need to allow for at least some adaptation to context. Policy and planning therefore go together, and the authors suggest that systems dynamics modelling could be a useful way to explore the possible impact of policy and planning decisions.
An initial search for “distance” policies yielded several institutional policies and policy statements but relatively few at the government or state level, and even fewer at the schooling level, outside of the open schools COL has previously engaged with and which have tended to use the quality criteria summarised in Table 16. As Makoe (2018) observes, there may well be mention of the potential of ODL in more general educational policy documents, but this is seldom carried over into the development of distinct ODL policy and planning frameworks. If national policy for ODL has been developed, it often focuses on higher education provision rather than schooling provision (DHET RSA, 2014).

However, a UNESCO report from 2002 (Moore & Tait) already noted the growing number of education providers moving from contact into dual-mode provision in response to growing demand from students for more flexible and affordable access, and the ways in which emerging technology had enabled new ways of teaching and learning. It was argued in this report that:

For governments the main potential is to increase the capacity and cost-effectiveness of education and training systems, to reach target groups with limited access to conventional education and training, to support and enhance the quality and relevance of existing educational structures, to ensure the connection of educational institutions and curricula to the emerging networks and information resources, and to promote innovation and opportunities for lifelong learning. (Moore & Tait, 2002, p. 8).

Numerous years later, inadequate policy, planning and funding remains an inhibiting factor at both national (Kanwar et al., 2018) and institutional (Simui et al., 2018) levels in higher education, and while distance education practices may well be increasingly mainstream in some parts of the world (Xiao, 2018), there remains a need for continual advocacy for ODL provision among other, more conservative education fraternities (Nage-Sibande & Morolong, 2018), which until the COVID-19 pandemic probably also included the schooling sector.

In its 2013 Open and Distance Education Policy Briefing, the ICDE concluded:

Globalisation and the imperatives of the networked society are affecting higher education almost everywhere in the world. Open and distance learning may be the only way of meeting future evermore complex and diversified student demands. In any case, open and distance learning are continuing to grow at a very fast pace. Development of workable and relevant regulatory frameworks that are transparent and not overly bureaucratic are imperative to the success of open and distance learning and realisation of its benefit for students and its contribution to the solution for mounting education pressures. Governmental, cross-border, interagency and inter-institutional collaboration will all be necessary to fashion a robust framework and public profile for open and distance learning. (ICDE, 2013, p. 11)

The ICDE report also provides a summary of an earlier report by James et al. (2011), which explored regulatory frameworks for distance education in the Southwest Pacific and South East Asia regions (two regions discussed in the case studies of practice in Part B of this publication). This involved a survey of existing
literature and regulatory agency material for the following countries: ASEAN: Brunei, Indonesia, Malaysia, Singapore, Thailand and Vietnam; and the Pacific Islands Forum countries of Australia, the Cook Islands, the Federated States of Micronesia, Fiji (suspended from ASEAN on 2 May 2009), French Polynesia, Kiribati, the Marshall Islands, Nauru, New Caledonia, New Zealand, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. The report observes that distance education practice has a long history in the region, but policy legislation specific to distance education was found only in Vietnam and Vanuatu. Key issues identified in this report are mapped to Table 17.

Partly in response to the lack of national policy frameworks in the African context (also explored in Part B), but also to enhance collaboration in the region in addressing educational challenges, in June 2012, the Southern African Development Community (SADC) published a regional ODL policy framework. This document provides a contextual analysis of ODL challenges and policy issues in the region, and identifies the following 16 key policy issues: capacity; mainstreaming; developing national ODL policies; counteracting negative ODL perceptions; enhancing collaboration and partnership; developing a regional qualifications framework; staff development and training; streamlining funding and budgeting; staff remuneration; research and development, and centres of excellence; pro-poor development strategies; stakeholder contributions; monitoring of provision; coordination of provision; cross-cutting issues; and user-friendly curricula and the establishment of a multimedia and ICT centre (SADC, 2012, pp. 17–20). Each issue is explained and justified, a policy statement is made, and the specific objectives of that policy statement are identified. The document also outlines implementation mechanisms, identifying key role-players and their respective responsibilities.

In a similar cross-cutting fashion, Keil and Brown (2014) undertook a review of the distance education accreditation policies and standards of the six regional and two national accrediting organisations in the United States and identified the following five key cross-cutting issues: institutional context and commitment, curriculum and instruction, faculty and faculty support, student support, and evaluation and assessment (including addressing how to verify student identity). Also in the USA, the American Association of University Professors (AAUP) observes:

> It is imperative . . . that colleges and universities now using or planning to use the new technologies of distance education consider the educational functions these new media are intended to perform and the specific problems they raise. Traditional academic principles and procedures will usually apply to these new media, either directly or by extension, but they will not be applicable in all circumstances. When they are not, new principles and procedures will need to be developed so that the new media will effectively serve the institution’s basic educational objectives. (AAUP, 1999)

They identify several related issues that policy needs to address, also captured in Table 17.

It is important to observe that not just governments and academic institutions have a voice in distance policy and regulation — in the realm of professional
practice, recognition of qualifications may also require accreditation by appropriate professional bodies. The National Board for Certified Counselors (NBCC), in the USA, is one such example, and in 2016, it published a set of guidelines for the provision of distance professional services, also mapped to Table 17. This example extends the scope of distance policy from distance teaching into distance professional practice.

In India, the Department of Higher Education, within the Ministry of Human Resource Development, observes:

[An] Open and Distance Learning (ODL) system is a system wherein teachers and learners need not necessarily be present either at same place or same time and is flexible in regard to modalities and timing of teaching and learning as also the admission criteria without compromising necessary quality considerations. [The] ODL system of the country consists of Indira Gandhi National Open University (IGNOU), State Open Universities (SOUs), Institutions and Universities offering education and includes Correspondence Course Institutes (CCIs) in conventional dual mode universities. This is becoming more and more significant for continuing education, skill updation [sic] of in service personnel and for quality education of relevance to learners located at educationally disadvantageous locations.

With the dissolution of the Distance Education Council of the IGNOU, the regulatory powers on ODL is currently vested with the University Grants Commission (UGC). (DHE, MHRD, 2017).

This extract flags the importance of recognising the diversity of stakeholders and role-players that an ODL policy framework needs to address. For example, the All India Council for Technical Education (AICTE) has noted the growing incidence of “hybrid” provision, in which distance education provision mediated through technology also requires some physical presence, and it has developed an Approval Process Handbook specifically to guide the accreditation of “Technical Education in Blended Learning Mode (TE-BLM)” (AICTE, 2013), which addresses a variety of potential providers. In the schooling sector, stakeholders would include teacher unions, parents/caregivers and student bodies, among other role-players.

Based on engagement with policy and practice in four different African countries, Makoe (2018) identifies six key areas in which institutions (and by extension governments) need to provide policy guidelines if they wish to move from single-mode contact provision into dual-mode provision, including ODL. These issues have been integrated into Table 17. Makoe also observes that an Internet search of education-related policies in the four countries with which she engaged yielded eight such policies: Rwanda, Higher Education Policy (2008); ICT in Education Policy (2016); Zambia, Educating Our Future, National Policy on Education (1996); Draft ICT Policy in Education (2006); Lesotho, Higher Education Policy (2013); Draft Open and Distance Learning Policy (2014); Uganda, National ICT Policy (2012); Education White Paper (1992). It will be noted that only one policy was found that focused specifically on ODL, and this was a draft discussion document.

However, while a subsequent search discovered the same phenomenon even in countries known to have extensive distance provision, it did find examples of
Addressing the Learning Needs of Out-of-School Children and Youths through the Expansion of Open Schooling

policies in Seychelles and South Africa (DHET RSA, 2014; MoE Seychelles, 2015) and guidelines in Nigeria (NUC, n.d.) and Mauritius (Gokool-Ramdoo, 2013), and while it was not possible to access the ODL policy attributed to Vietnam, it was possible to identify some key issues from a presentation made by Hung (2015).

Although institutional rather than national policies, and focused on higher education rather than schooling, the University of South Africa’s (2008) policy on ODL as well as the University of the South Pacific’s (2017) policy on flexible learning have also been mapped in Table 17, given the size and geographic footprint of these two institutions.

Apart from extant ODL policy documents, policy provisions can also be deduced from other relevant education policies as well as relevant literature. For example, in the Cook Islands, the Ministry of Education commits itself to the following vision:

All people in the Cook Islands will have equal access to quality learning opportunities across the full spectrum of human endeavour from birth. (MoE CI, 2008, p. 2)

It also commits to developing strategies for distance education, isolated students, second chance learning and adult education. (MoE CI, 2008, p. 6)

Similarly, Kala (2013) indicates the potential of ICT in Fiji, where an increasing proportion of students have access to their own computers, but notes that Internet access remains a challenge, as well as take-up by faculty, and that there is a need for linkage between ICT policy and other education policy and funding mechanisms, infrastructure and staff development, as well as a need for the development and use of an information management system. Similarly, the expansion of eLearning has been identified as one way to strengthen further progress towards an Education For All mandate in Kiribati, but this means first addressing ways to optimise the relatively limited human and financial resource base available, to strengthen communication between isolated island communities, and to strengthen staffing policies and procedures and teacher professionalism, while being cognisant of the timeframes and processes for managing change (MoE Kiribati, 2015).

In a baseline study on technology-enabled learning (TEL) in the Pacific region more generally, Vaa (2015), writing for COL, notes increased access to the Internet via fibre-optic and satellite technology in the region but observes that the cost of access, including the cost of the electricity to power such access, remains a challenge. This means that in some cases, it is necessary to offer distance learning through other media, such as print and radio. It is also observed that appropriate teacher training and support is a critical aspect of successful TEL in schools.

Focusing on student experiences of an online programme offered in the Pacific Islands, Rao and Giuli (2010) identify key challenges (balancing study and work commitments, Internet access, computer skills), key success factors (personal interaction, organisation and clarity of course, relevance of content to context) and suggested improvements (weekly synchronous phone or web conferences, local coordinators, more face-to-face meetings). In similar vein, Tufue-Dolgoy, Vaai and Suaali’I (2016) explored teachers’ experience of ODL provision in Samoa.
and found that teachers were generally positive about the experience, citing contact-support and appropriate learning resources as key factors for success — that is, a blended model of provision — given that Internet access remains a challenge and mitigates against using fully online provision. Internet access is also a challenge in Solomon Islands, where the Ministry of Education and Human Resources Development (MEHRD, 2016) reports on several alternative ways to enable TEL, including:

- The KioKit, which consists of a waterproof box containing 40 tough tablet computers and a small computer that stores all the learning materials and shares them with the students’ tablets using wireless data. The box also allows tablets to be securely stored and charged at the end of each school day.
- Development of standalone multimedia materials to train teachers to use newly released literacy story books.
- Development of multimedia materials to provide training in data management and toll-free mobile short-message services (SMS).
- Improving the distance training of untrained teachers using ICT. Currently, courses for untrained teachers are offered in the distance mode using paper-based resources. The pilot will redevelop parts of the course using multimedia resources (e.g., instructional videos, PowerPoint slides, reference documents, etc.) and deliver the selected modules to the students on a tablet or laptop. Contact with the pilot students will be by SMS messages using their mobile phones.

In a report on education challenges and the potential for flexible and open learning in Tuvalu, Raturi (2016) observes that while open and flexible learning through the use of technology is seen as a strategy with potential, there is a prerequisite need to invest in sound infrastructure, reliable energy supply, improved telecommunications and buildings, and the need to support appropriate policy development processes.

Table 17 maps actual policy provisions, organised into related themes suggested by policy documents, policy discussions and broader discussions related to technology-enabled and online learning.
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29 Asia-Pacific Quality Network
30 Asian Association of Open Universities
31 Southeast Asian Ministers of Education Organisation
Providing clarity on regulatory accreditation and quality assurance requirements

As noted in Chapter 5, as well as the discussion on quality assurance earlier and in Tables 15–17 of this chapter, mechanisms for quality assuring provision are of great importance. Although a policy framework will not provide the details of these mechanisms, it should refer to them.

Table 18 below is derived from mapping changing student experiences and needs (as defined by Unisa’s concept of the student walk, in its 2008 policy) against four useful phases identified by the CHE in South Africa (input, process, output and impact) at a national level, and then against typical quality criteria applicable to distance provision internationally (AAOU, COL).

What the table seeks to illustrate is that quality assurance is an ongoing process rather than a single event; that there is fairly common agreement on the issues needing to be addressed (Ossiannilsson et al., 2015); and that these issues need to be addressed at both the institutional level (concerned with the commitment to and capacity of an institution to offer distance provision) and the programme level (fitness of and for purpose as well as sustainability).

Regulatory agencies such as the Lesotho CHE (http://www.che.ac.ls/home/) or the Vanuatu Qualifications Authority (http://vqa.edu.vu/) or the schooling-level agency in South Africa (https://www.umalusi.org.za/) then need to decide what evidence is required to assure quality.

The scope of the work of such regulatory authorities with respect to ODL provision will then be determined by the scope of the ODL policy, which might include, *inter alia*:

- **Open schooling (OS):** raising issues such as national curriculum requirements; learner, teacher, and institutional readiness; possibilities of home-schooling.

- **Adult education and training (AET):** raising the issues already identified as well as additional ones, such as recognition of prior learning (RPL) as well as equivalence of certification (e.g., adult equivalent of a school-leaving certificate).

- **Technical and vocational education and training (TVET):** raising all the above issues as well as some new ones, such as trade and professional body requirements, arrangements for workshop and laboratory practicals, and work-integrated learning (WIL).

- **Higher education and training (HET):** which needs to address everything already mentioned as well as the issues unique to the sector, such as academic rigour, research and community engagement.

- **Cross-border provision:** which requires response to all the above issues as well as issues of recognition and portability across national borders — see COL (2015b) and https://vussc.col.org/.
Table 18: Mapping quality indicators at institutional, national and international levels (updated from Mays, 2017, p. 148)

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<thead>
<tr>
<th>Walk:</th>
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<th>CHEPA 2004</th>
<th>CHEIA 2004</th>
<th>COLQA</th>
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<td>Management, leadership and organisational culture (2009/2)</td>
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<td>3. Registration</td>
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Abbreviations used in the table: QPQM = Unisa Quality Programmes, Quality Materials; NADQ = Nadeosa Quality criteria; CHEPA = CHE Programme Accreditation criteria; CHEIA = CHE Institutional Audit criteria; COLQA = COL Quality Assurance criteria; AAOU = Asian Association of Open Universities quality criteria; IQMF = Unisa Integrated Quality Management Framework.
Providing clarity on funding mechanisms

Reflecting on declining real state subsidies to public universities in the USA, Sav (2016) concludes that “government really does matter” in helping to maximise the efficiency of the system generally, a view echoed by Fowles (2014), who notes that the ways in which government funds are directed can influence institutional behaviour in particular directions, as can the providers of other sources of income outside of government. In the developing context of South Africa, Ntshoe and De Villiers (2013) caution that a shift away from direct government financial support for universities (or public schools) would likely have a profound impact on rural institutions (who do not have ready access to industries able to finance research projects) and their students (who tend to be from the poorest family backgrounds and less able to access bursaries and student loans).

However, as noted in Chapter 6, the costing of distance provision follows a different logic from that of contact provision, and a policy framework should probably therefore require evidence that institutions wishing to offer distance programmes have done suitable costing projections for quality, viable and sustainable provision (Mays, 2017). Thought might also need to be given to requiring private providers to subscribe to a fidelity fund to protect student interests if a private provider goes out of business.

With respect to realistic costing, it is important to note that the possibilities for improved communication and student support offered by ICT and Internet connectivity come at a cost to both institutions and students. Having considered the matter, Hülsmann (2016) concludes:

in developing countries a combination of traditional mass-media-based instructional approaches with the intelligent use of mobile technologies appears to be more promising than imitating an online class model while having to increase class sizes to an extent that compromises the original instructional intentions of the model.

(Hülsmann, 2016, p. 37)

As noted in Chapter 6, funding sources for ODL programme provision may then include:

- Student fees
- up-front in-full payments
- instalment payments
- student loans
- student bursaries
- student sponsorships
- Government subsidies
- input grants (payments based on registered students or based on national budget divided by number of institutions)
- output grants (payments based on successful graduates)
- External grants, third-stream income and cross-subsidisation (for example, supporting the provision of low- or no-fee enrolment for out-of-school children in whole or in part by offering income-generating courses to employed youths and adults).
Another possible way of funding current operations and new developments is to incur long-term debt — although private non-profit universities appear more open to this possibility than public universities in the USA (Denison et al., 2014), and the author is not aware of examples of this approach in schooling provision. The Denison et al. paper also raises other important issues that require government policy clarity on their application for distance providers: tax exemption for charitable donations to educational institutions like open schools; access to the tax-exempt bond market; student aid funding (whether as grants or subsidised student loans); and state appropriations.

These different forms of income create different revenue streams and require different budgetary arrangements. For example, students might not be able to get a study loan or a bursary until they can prove they have been accepted for registration; but administrative delays in the awarding of loans and bursaries can take longer than typical registration timeframes. Should students then be excluded because a government or a bank has slow administrative processes? If government subsidies form the largest proportion of an institution’s income stream, then when payment is effected (in South Africa, the verification process typically takes about two years) becomes critical, as does the basis for that subsidy (directly related to student numbers or simply a proportion of the funds available in the fiscus?). In a comparative study in the USA, Hanover Research (2014) notes that in general, the costs of developing, delivering and administering online distance programmes need usually to be recouped from student fees, and with some variations, the costs are similar for campus-based and online provision: online students do not pay campus-related fees, but they often need to pay a “technology” fee, which goes towards the cost of developing digital materials and developing and maintaining the online platform.

As observed by Moore and Tait:

Funding of open and distance learning institutions is often different from that of conventional institutions, and there are many arguments in favour of this. On the other hand, if open and distance learning is to be used increasingly by conventional institutions, funding for programmes of this type needs some harmonization with funding mechanisms for conventional programmes. It is widely assumed that students in open and distance learning, who are often working adults, should pay a higher proportion of the costs than conventional students [an argument that does not necessarily apply in open schooling]. However, this assumption should be modified according to the mission of programmes, target groups and local circumstances. The balance of funding from government, employers and individual students should be carefully considered, in the knowledge of the fact that underfunding may have negative qualitative and social effects. Care should be taken to remedy any unjustified economic discrimination between students in open and distance learning and other students. (Moore & Tait, 2002, p. 12)

Despite the conjecture of Kanuka and Brooks (2010) cited earlier, Rumble (2012) notes: “The most important finding is that mass-media distance education could achieve economies of scale and could be designed so that the average cost per student (and to a lesser extent, because of higher drop-out rates, per graduate) could be lower than similar costs found in face-to-face education” (p. 41).
South Africa formalised a national distance education policy (applying only to university education) only in 2014. However, discussions on the draft distance education policy during 2011/12 raised several issues for consideration in respect of funding policy that might be of interest more generally; these are discussed below. It should be noted that in South Africa, the subsidy is split into input and output components:

- **Teaching output funding for different modes of provision**
  If all programmes need to be formally accredited, then it seems logical to offer the same government subsidy for successful graduates, regardless of mode of provision.

- **Teaching inputs funding for accredited qualifications at master and doctoral levels for different modes of provision**
  It seems logical to offer the same subsidy regardless of mode of provision, since at this level, study is largely independent in nature, and supervision can be mediated in a variety of ways.

- **Only giving input subsidy for active students**
  Stop-out and drop-out rates in distance provision need to be managed; requiring evidence of active engagement — for example, submission of assignments — may be a way to encourage better retention, throughput and pass rates.

- **Rewarding distance education contributions to students’ completion of qualifications awarded by other institutions**
  Students may receive RPL or direct credit based on incomplete studies at contact institutions. While input subsidies can be calculated on a pro-rata basis, assisting students to progress from a handful of credits to a full qualification could attract either a partial or a full output subsidy.

- **Financial incentives for completing qualifications**
  Because distance students often have other commitments, they tend to take longer to complete their studies; in contrast, some distance education students may not be in employment — the case of a growing number of school-leavers in South Africa — and thus need not be constrained by the 30-week academic year of a typical contact institution and could in fact complete more credits in a year. Should there then be financial incentives for faster completion?

- **Difficulties in meeting enrolment targets exactly**
  In most developing countries, the economy is growing more slowly than the need or demand for provision; consequently, as student numbers grow, the real subsidy per capita will likely decrease and result in fee increases. In addition, if an institution exceeds the enrolment projection agreed with government, then the excess enrolment will generate fee income only and may not be sustainable. However, multiple factors have impacts on student enrolment, and so there needs to be some leeway in how targets are monitored and funded.

- **The case of low-enrolment, distance education niche programmes to address a national need**
  The development of quality programmes and learning resources is time consuming and costly and needs to be amortised over student enrolment
over a period of time — for example, six cohorts over three years. The lower the student enrolment, the higher the cost per student of offering the programme, and hence the higher the subsidy and/or student fee required to recoup the investment made.

- **National bursary or loan support for distance students**
  Students who opt for distance provision often do so because they cannot afford the cost of full-time provision, in terms of direct costs of tuition and accommodation as well as the opportunity cost of not being able to work full-time. It therefore seems logical that if national bursary or loan schemes are available, they should be available to both contact and distance students, although as indicated, distance students may take a lesser or greater learning load, and so the fees they will need to pay will vary accordingly.

- **The costs of the ICT infrastructure necessary for distance education**
  As distance provision moves increasingly online and/or into the mobile space, the cost of developing, maintaining and improving the ICT infrastructure will rise accordingly. Costs will be incurred not only for physical devices but also for software and security licences, copyright licences, connectivity, system maintenance, and staff training and development. Government may have a role to play in trying to address some of these costs — for example, by negotiating lower rates for data usage for educational purposes.

- **Supporting the development of open educational resources (OER)**
  Encouraging use of OER could be a mechanism to reduce costs for both institutions and students. If existing resources can be found that align with the curriculum requirements with minimal adaptation, then the time cost-saving can be passed on to students in the form of lower fees. If institutions can collaborate to develop a common set of resources that all institutions use, then the cost of development can be amortised over a greater number of students. It is also possible that such development could be funded by a third party.

  Given that the cost of commercially developed textbooks is rising exponentially, so that increasingly, students are not purchasing the textbooks that have been prescribed, open textbooks could be a way to ensure students have access to the content they need (Stacey, 2013).

- **Supporting the development of effective use of digital technologies**
  Simply introducing technology will not in and of itself result in improved student learning, to which recent reports by the OECD (2015) and Amory, Rahiman and Mhlanga (2015) seem to attest. There is, rather, a need to make conscious pedagogic decisions about what technology to use and how. In a telling finding of a research project into how institutions were utilising technology, Bates and Sangrà (2011, p. xx) observe, however, that “most [of 11 institutions surveyed] seemed content to use technology to enhance traditional classroom teaching, rather than to use technology to transform the way teaching is designed and delivered.” As Dolfsma and Seo (2013) observe, encouraging innovation usually requires more than just a policy position. Government could, for example, support appropriate use of appropriate technology for context through hosting national symposia to
explore the possibilities, and by providing grants to institutions to innovate and then share back their findings.

The ways in which governments choose to fund education reflect the real values that underpin practice (BenDavid-Hadar, 2016). Changes in the ways governments fund education can, for example, have a profound effect on individual institutions. Pulker (2016) points to the impact of the British 2012 funding policy change on the United Kingdom’s Open University (UKOU). Annual tuition fees were raised, and a student loan scheme was implemented. Although the loan scheme was available also to part-time and distance students, the requirements for access to the loan scheme militated against the UKOU’s traditional student population, as they included registration for a full qualification and being registered for a programme at a higher level than previous qualifications. It has been estimated that the UKOU’s enrolment declined by a third over a six-year period, although it retained the largest proportion of the part-time learning market. In response to these challenges, the university is rethinking how it operates and refocusing attention on the centrality of learner and learning support, and collaborative online learning.

The Open University of the Netherlands (OUNL) has also needed to revisit its model of provision to become more cost-effective. Key changes are reported by Koper (2014), who summarises them as follows in Table 19:

Table 19: Summary of the major differences between the existing and new educational model at OUNL (Koper, 2014)

<table>
<thead>
<tr>
<th>Existing model</th>
<th>New model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guided self-study</td>
<td>Active online learning</td>
</tr>
<tr>
<td>Student is responsible for pacing.</td>
<td>Pacing is part of the structure and a joint responsibility for student, teacher and group.</td>
</tr>
<tr>
<td>Students can start whenever they want.</td>
<td>Students can start in September and for some programs also in February.</td>
</tr>
<tr>
<td>Curricula consists of courses that can be studied in (almost) any order in any tempo and at any time.</td>
<td>Curriculum has a fixed course structure per year, with more pacing and restricted enrolment possibilities.</td>
</tr>
<tr>
<td>Students study individually with some support from tutors and mentors.</td>
<td>Students study individually, in cohorts and in the community of their peer groups within and outside the program.</td>
</tr>
<tr>
<td>Course materials are predesigned, delivered in course packages that can be delivered to many students for longer periods of time without revision.</td>
<td>Less predesigned materials, delivery primarily online, no course packages. Students order the necessary books themselves in bookstores. Each course run of the course is in principle redesigned when needed. The teacher is responsible for the design and the running of the courses.</td>
</tr>
<tr>
<td>Unbundling of the teachers’ tasks into design, tutoring, student support and examination. Most are performed by different persons for the same course.</td>
<td>Bundling of tasks that take care for a consistent workflow in the teaching-learning process, like design, tutoring, student support and examination. These tasks can be executed by a team of persons, but still one of them is in the lead and takes care of the consistency.</td>
</tr>
<tr>
<td>Core activity of a student is to read texts and solve problems (e.g. in mathematics) individually. They can test themselves with self-tests, most tests are multiple choice.</td>
<td>More collaborative activities, individualised or group adapted activities when needed. More active learning formats and learning activities that can be performed in the student’s work situation. More organised feedback on progress and oral or written contributions. Less multiple choice.</td>
</tr>
<tr>
<td>Requires well-developed metacognitive skills, like self-directed learning.</td>
<td>Requires less metacognitive skills in advance, but attention is given to build these skills.</td>
</tr>
</tbody>
</table>
Innovative models for making education affordable for both students and the state may need to be explored — for example, the Cadetship Scheme in Zimbabwe:

It is a cadetship programme introduced as a welfare scheme to cover tuition fees, food and accommodation requirements that students from poor backgrounds need in the institutions of higher learning. Under the contract, the student’s fees are paid by the government and in return the student is bonded for a period equivalent to the number of years the student spent in training. (Chimhenga et al., 2015, p. 1)

It is argued that the model did not work well in Zimbabwe because of the way it was administered. A variation of this model might then be explored, provided the limitations identified by the authors are first addressed. The Hunar project discussed in the previous chapter provides another variation; women who successfully passed their skills-based training were then recruited as mentors for a new generation of learners. Perhaps something like this could be done in support of open schooling, with successful open schooling students being recruited as local mentors for new open schooling learners.

Of course, government and institutions must also be able to assess the affordability for target students in determining what proportion of the cost of provision should, and realistically could, be covered by student fees (Fridley & Sharpe, 2016; Langelett et al., 2015). This calculation can be complex in a context of open borders and a mobile labour force in need of continuing professional development (Demange et al., 2014). This again reinforces the need for upfront costing of proposed programmes so that informed decisions can be made on whether programmes are viable and sustainable for a given market segment and demographic (Mays, 2017; Semeraro & Boyd, 2017).

Another role for government then might be to maintain a webpage providing information about bursaries and scholarships available. For example, an initiative called scholarships for development, “scholars4dev,” has compiled a list of international distance learning scholarships providing access to online programmes (see http://www.scholars4dev.com/tag/distanceLearning-scholarships/).

Conclusions and Recommendations

At the start of this discussion, it was noted that open schooling requires the use of ODL/ODeL approaches and methods. The policy environment must therefore be supportive of ODL/ODeL provision.

As identified by Coates and Mahat (2014), and as attested by the foregoing discussion, we are currently in an era of hybridised learning provision in which distance/contact/online provision, public/private boundaries, and national and regional borders are blurring, calling for agility at individual, institutional and governmental levels; but the core quality indicator remains what students can demonstrate they have learned, no matter how they have learned it.

An ODL/ODeL policy therefore needs to accommodate a diversity of provision options while being clear on what is not negotiable.

In general, a policy should probably seek to address the following basic questions:
• Why is it necessary? Addressing issues of context, rationale and purpose.
• To what does it apply? Addressing issues of definition and scope.
• To whom does it apply? Addressing issues of public and/or private provision as well as levels of application — schooling, adult education, technical and vocational education and training, and/or higher education.
• Where does it apply? Addressing implications for physical and ICT infrastructure, access, costing and security as well as cross-border provision in an online era.
• When does it apply? Addressing issues of policy implementation and renewal.
• How does it apply? Addressing issues of coordination, monitoring, quality assurance, review and funding.

As observed in Chapters 1 and 8, on a global scale, girls and people living with disabilities are more likely to experience difficulties in accessing schooling opportunities, and there should probably be a policy emphasis on addressing these learners’ needs in a cross-cutting way.

Based on the discussion in this chapter, Table 20 provides a suggested framework for the review of an ODL/ODeL/open schooling policy. These questions need to be asked for each of the sub-systems the policy seeks to guide, fund and regulate, including open schooling itself.

Table 20: ODL/ODeL policy review parameters

<table>
<thead>
<tr>
<th>Issue</th>
<th>Suggested key questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition</td>
<td>How does the policy understand ODL/ODeL in relation to, for example, distance education, online provision, and flexible/mixed-mode/hybrid provision?</td>
</tr>
<tr>
<td>Scope</td>
<td>What is the scope of the policy — e.g., does it include open schooling; adult education and training; technical, vocational and skills development; higher education, etc.?</td>
</tr>
<tr>
<td>Rationale</td>
<td>Why is the policy needed?</td>
</tr>
<tr>
<td>Purpose</td>
<td>What does the policy seek to achieve?</td>
</tr>
<tr>
<td>Context</td>
<td>How does the policy relate to contextual needs, including other policies — e.g., information and communication technology, human resource management, quality assurance, intellectual property rights, and education strategy and policy generally?</td>
</tr>
<tr>
<td>Principles/values</td>
<td>What principles or values are considered non-negotiable?</td>
</tr>
<tr>
<td>Policy influences</td>
<td>What national, regional or global issues have influenced the policy provisions?</td>
</tr>
<tr>
<td>Cross-border provision</td>
<td>What is the policy provision on cross-border provision (both incoming and outgoing)?</td>
</tr>
<tr>
<td>System</td>
<td>What systemic conditions have shaped the policy provisions?</td>
</tr>
<tr>
<td></td>
<td>What systemic issues need to be addressed for the policy to be effective?</td>
</tr>
<tr>
<td>Planning and monitoring</td>
<td>How does the policy fit into system planning, coordinating and monitoring?</td>
</tr>
<tr>
<td></td>
<td>How should information feed the education management information system?</td>
</tr>
<tr>
<td>Public/private</td>
<td>What is the policy position regarding the respective roles of public and private providers?</td>
</tr>
<tr>
<td>ICT</td>
<td>What is the envisaged role of ICT in ODL/ODeL provision?</td>
</tr>
<tr>
<td></td>
<td>How will government support increased access, lower costs and improved reach?</td>
</tr>
</tbody>
</table>
## Addressing the Learning Needs of Out-of-School Children and Youths through the Expansion of Open Schooling

### Issue | Suggested key questions
--- | ---
**Institutions/QA** | Which institutions can offer ODL/ODeL?  
What is the policy position on single, dual and mixed-mode/flexible provision?  
How are institutions registered for ODL/ODeL provision?  
What are policy expectations regarding regional collaboration, ICT, and library infrastructure?  
What are policy expectations regarding student enrolment, and authentication/verification of student identity and work submitted?  
What are general policy expectations regarding staff qualifications, experience, training, support and workload?
**Collaboration/QA** | What are policy expectations regarding collaboration in areas such as co-developed programmes and materials and shared facilities?  
What is the policy position regarding public/private partnerships?
**Programmes/QA** | What are policy expectations with respect to ODL/ODeL programme design, student support, assessment and evaluation?  
How are ODL/ODeL programmes approved, accredited and registered?  
What are policy expectations regarding recognition of prior learning, continuous assessment (including badges, micro-credentials and blockchain technology), practical work, work-integrated learning…?
**IPR/OER** | What is the policy position on intellectual property rights in publicly funded institutions?  
Does policy support OER? If so, how?
**Funding** | What funding mechanisms are supported by policy — for example:  
• institutional grants (how and where? types?)  
• fees (determined by institutions or the state?)  
• third-stream income/cross-subsidisation?  
• student bursaries and loan schemes?  
• private provider fidelity fund/asset-debt ratios?
**Research** | What is the policy position on research related to ODL/ODeL provision? How can policy help ensure continuous improvement through evidence-based decision making?

### Acknowledgement and Further Reading

The contents of this chapter are adapted slightly from:

Mays, T. (2018). *Towards a Policy on Open and Distance Learning: A Desktop Study on Government Support for Open and Distance Learning*. COL.

At the time of writing, a search on COL’s OAsis platform for policy on open and distance learning yielded 3,289 openly licensed resources that might be useful. OAsis can be accessed at http://oasis.col.org.

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Developing Practice

The four case studies in the chapters that follow provide insight into developing practice in four key regions where open schooling has been promoted: Africa, Asia, the Caribbean and the Pacific. Each region has its own unique experiences and circumstances, but there are numerous overlapping issues, which provide practical insight into many of the theory, policy and research dimensions discussed in Part A.
Introduction

This chapter focuses specifically on evolving practice in Sub-Saharan Africa, with an emphasis on the following countries: Botswana, Congo, Ghana, Kenya, Mauritius, Namibia, South Africa, Tanzania and Zambia. Key issues discussed in the chapter include the four-generational transformation of distance education (DE) relating to dominant technologies and pedagogies applied in open schooling (OS) in Sub-Saharan Africa. The chapter further discusses the challenges faced during the evolving process.

The African continent is quite diverse, comprising 54 sovereign states. Each of the African states has its own educational development agenda and specific regulatory framework. Regardless of these differences, most African states share the intergenerational legacy of colonisation and the historical and continued marginalisation within international economic, social and scholarly networks (Prinsloo, 2017). Education provision in Africa is challenged by a myriad of factors, which include HIV and AIDS, environmental challenges, and a variety of political and historical complications. Approximately half of the population of Africa is below 20 years of age, and according to the World Bank (2018), the population of Sub-Saharan Africa is growing at about 2.7% per annum. This has resulted in most African governments struggling to build education systems fast enough to accommodate the ever-increasing numbers of primary-, secondary- and college-level learners. For example, in Zambia, a country in southern Africa, limited school infrastructure has alienated those who want to gain access to school and tertiary education, a factor that has exacerbated low literacy levels and human development in the continent (Republic of Zambia, 2017). Open and distance education provision has been one way to address the challenge. Distance education provision in Africa tends to work best on a large scale through which massive numbers of people can be reached — for example, in higher education.
through the University of South Africa (Unisa) or the Open University of Tanzania (OUT), and at the schooling level through institutions such as the Botswana Open University (BOU) Open Schooling programme (formerly the Botswana College of Distance and Open Learning) and the Namibian College of Open Learning (NAMCOL), among many others. Programmes with low numbers of learners and high levels of investment per learner struggle to be financially viable without major donor aid.

In this chapter, we will discuss the evolution of OS in Africa based on the generations of dominant technologies and pedagogies applied.

We should further point out from the outset that documenting the evolution of OS in Africa should not ignore the historical and persistent effects of the global irregularities of knowledge production and dissemination. Therefore, the chapter discusses the evolution of OS by specifically explaining the three main areas of Sub-Saharan Africa for which information is most readily available. We focus on Southern Africa, Western Africa and Eastern Africa. Several countries in North Africa are in the middle-income bracket and seem not to make extensive use of DE in general or OS in particular.

**Evolution of Open Schooling in Sub-Saharan Africa**

In the 1960s there were attempts to establish correspondence schools in several developing countries, such as Malawi, Zambia and Zimbabwe. With funding from richer countries, some of these institutions, such as the Malawi College of Distance Education and the National Correspondence College (NCC), Zambia, were initially successful. Sadly, as development funding decreased, these institutions were not sustainable. The models used followed too closely those in the industrialised world with too little reference to local context. For example, pupils in developing countries seldom had educated parents to tutor them. The courses were often imported from developed contexts with content that made little sense to learners living in a completely different environment. Moreover, even when courses were adapted to local contexts, issues associated with printing costs, the price of paper, tutor availability and communications infrastructure were not considered in the planning process. As a result, many of these institutions failed in their mandates to successfully deliver school-level education through non-conventional means.

Despite these failures, the Commonwealth of Learning (COL) decided soon after its creation that the concept of OS was too important to be abandoned. The challenge was to implement the concept effectively. There was a hill to climb because of a legacy of distrust of schooling systems that were not based on classrooms staffed with teachers.

COL began its work in OS with the publication in 1994 of several case studies, entitled *Open Schooling: Selected Experiences*. One of the first publications on OS, it is still cited in research on non-conventional school-level education more than 25 years later and remains a significant contribution to the literature.

Although the theoretical background to the origin of OS in Africa is quite inadequate, it is worth noting that in Africa, most states initially organised OS in the form of correspondence instruction. The genesis of OS education in Africa was premised on challenges in providing education. Over time, OS in Africa has
undergone drastic transformation. This could partly be attributed to the increase in population in relation to the limited infrastructure of learning institutions. It is also worth noting that the primary gross enrolment ratio (GER) in Sub-Saharan Africa rose to 98% in 2015, up 30 percentage points from 1990, with enrolment headcounts more than doubling, rising from 63 million to 152 million over the same period (World Bank, 2018).

However, with very few junior secondary schools to accommodate those who progress from primary school, learners encounter a barrier to enrolling in secondary school, thus making some governments turn to OS models, which are much more flexible. Research has also shown that only 37% of young people in Sub-Saharan Africa complete lower secondary education, while 27% complete upper secondary education, well below other regions globally (UNESCO, 2018). In this regard, the education systems leave out many learners at both lower and upper secondary levels. These learners can be termed “dropouts,” but “push-outs” is perhaps more accurate. Furthermore, some children and youths, especially those in underserved areas, are disadvantaged by not going to school, while even those who go to school are in some cases on the verge of dropping out. Multiple factors contribute to this challenge. These include child marriages, the death of guardians, and poverty. To mitigate these challenges, most African countries have embraced DE to provide some educational opportunities for disadvantaged children and youths.

For many years, OS was not mainstreamed as formal education but rather seen as an informal adjunct to mainstream contact provision. However, in the recent past, more attention has been paid to OS because of its huge potential. Mbatha (2014) alludes to OS in various open and distance learning (ODL) institutions in South Africa and the African continent more widely as a strategy that offers diverse affordable technologies to facilitate the sharing of learning content with and among students who are geographically widely dispersed.

The evolution of OS is based on the growing use of technologies. Some scholars trace the origin of DE in Africa to as far back as the 12th century (Obilade, 2013). However, from a contemporary viewpoint, DE has undergone transformation through four major generations in Sub-Saharan Africa. In the first generation, education was being delivered via correspondence through publications of modules and through services provided by government postal systems. During the second generation, DE was delivered using publications, audio means, visual aids, audio-visual methods and computer programs. In the third generation, DE was delivered in print but supplemented by live broadcast on radio or television, as well as by telephone. In this regard, interaction between teachers and learners was through audio channels. In the fourth generation, compact discs, electronic libraries, multimedia and the Internet are the major delivery modes of education, and new forms are evolving as Africa begins to embrace the 4th Industrial Revolution.

**Evolution of open schooling, first generation: correspondence study**

In Africa, correspondence study was established as a form of education and distance teaching in many institutions of learning in the mid-20th century. African countries were colonised by other nations from the West and a few from the Middle East. After gaining independence, the governments prioritised skills...
development and training. This was the first generation of OS. It was dominated by written and printed texts as well as postal services for delivering texts, study manuals, books and newspapers. This era was referred to as print-based correspondence education or the “learning through mailing” phase. Educational content was transmitted between the teacher and the learner in print without direct interaction. The indirect interaction between teachers and learners was ordinarily limited to written correspondence. This meant that handwritten texts were sent via postal mail. The correspondence model was also referred to as a “supplementary model.” In this regard, DE was considered supplementary or complementary to traditional education and targeted those who were excluded from the traditional education system for some reason. Distance education programmes were termed extension programmes, external study or independent study. For example, in Zambia, correspondence education was conducted at the Zambia College of Distance Education, a college that started in 1964 to offer secondary education by correspondence education. The success of DE provision by mail varied by country, depending in large part on the reliability of the postal systems (Aderinoye et al., 2009).

Evolution of open schooling, second generation: use of broadcast media

The second generation, also referred to as the industrial model, involved the use of radio and television as instructional media in addition to printed materials. This phase was also called the “distance learning” stage, through the incorporation of “interactive” radio instruction (IRI) and interactive television. The technique was based on the principle of interaction between teachers and learners via broadcast media, through either live phone-in opportunities or the creation and use of decentralised broadcast studios. Offering learning opportunities through interactive television or video was argued to be more sophisticated and modern than the use of radio, but both had the advantage that broadcasts could be recorded and replayed at the learners’ convenience. The lessons were more enjoyable because of the availability of sound elements, images and movement in the exchange of information. Africa also has wide experience in using radio to support teaching. IRI has been used to support English teaching in Ethiopia, Kenya, Lesotho and South Africa, Portuguese teaching in Cape Verde, and French, mathematics and sciences teaching in Guinea Bissau, while Burkina Faso and Zimbabwe have used radio for primary school teaching, though not in the interactive mode (Leary & Berge, 2004). In Zambia, open and distance education is offered at lower primary, secondary and tertiary education levels. At the primary level, OS is done through IRI or interactive audio instruction via the Ministry of General Education’s Directorate of Open and Distance Education, in the unit called Educational Broadcasting Services. This programme has been quite successful and has attracted much attention from many stakeholders (Goredema & Zulu, 2012).

This period was associated with the massification of education, where hundreds or thousands of learners learned in the same programme using the same content and approach. Although radio and television have been discontinued in many OS programmes, they still paved the way for DVDs and the online streaming of radio and video. Equally, interactive animated programmes previously on DVD are still
being used on the Web as open educational resources (OER), as are several other OER (Ferreira & Gauthier, 2013). Over the past 30 years, IRI has proved to be one of the strongest and most appropriate forms of communication and teaching for DE in Sub-Saharan Africa, especially in areas where Internet penetration remains limited or non-existent.

Another example of the evolution of DE in Africa using television is the Pan-African e-Network project. By 2010, the project involved 53 states of Africa and comprised the Tele-Education component and the Tele-Medicine component. The Tele-Medicine programme seeks to link selected African medical practitioners to the technological infrastructure, techniques and knowhow developed by India. Mass broadcasting media remain important options for reaching the otherwise unreached and today are likely to be backed up online (see, for example, Elimu TV in Kenya).

Evolution of open schooling, third generation: use of ICT

The third phase in the evolution of OS involved the utilisation of information and communication technologies (ICT) to provide interaction in addition to content delivery. There are two aspects of interactivity in this regard: (1) interactivity between the learner and content, as seen in interactive multimedia learning materials provided on CD-ROM or, more recently, on flash drives, as well as on the Web, and (2) interactivity between teachers and learners and among learners, for example, by email. This tele-learning model is based on applying telecommunications technology to provide opportunities for both synchronous (same time and/or same place) and asynchronous (different time and/or different space) communication. In this model, DE had begun to evolve to the extent that the focus of education provision was shifted from teacher to learner and from content transmission to demonstration of learning.

Evolution of open schooling, fourth generation: Internet and 4th Industrial Revolution

The fourth stage is the digital technology stage or 4th Industrial Revolution. This generation provides interactive ICT to support course delivery and learning. In this stage, computers and mobile devices linked to the Internet have become, for the time being, the most prominent technologies that underpin the DE system. To date, DE has evolved into what is termed the flexible learning model, based on online provision via the Internet. For example, universities such as Kenyatta University, Unisa, University of Zambia (UNZA), BOU and OUT offer programmes via online systems and OS provision in Botswana and eSwatini, and Namibia is moving in this direction. However, as with other parts of the world, the potential for collaborative learning is not necessarily always fully exploited because it requires a change in established ways of working and the development of new skills and mindsets (Amory et al., 2018; Gunawardena, 2020).

Currently, OS provision in Africa is still predominantly a blend between print-based or text-based digital learning materials, centre-based contact support and limited technology-blended learning, due to the relatively high cost of data and

32 https://www.youtube.com/c/CommonwealthofLearning/videos
33 https://www.youtube.com/channel/UCVT0cpN!epST6cu9G-dsxFhA
devices, and the variable readiness of both learners and teachers for fully online learning. The evolution of DE spans several years, and provision continues to depend on economies of scale to become financially sustainable.

Current Provision of Open Schooling in Sub-Saharan Africa

In Sub-Saharan Africa, DE provision is well established. A case study of South Africa shows there are approximately 150 DE programmes working in South Africa alone (Betchoo, 2015). However, there is no national OS provider, although several private providers do offer DE support for out-of-school youths who register to write national examinations as independent candidates. Most national DE programmes tend to be led by in-country universities whose DE programmes began in the 1990s, though some began as early as the 1950s. For example, learners at the African Virtual University (AVU) in Kenya have taken online classes at the Massachusetts Institute of Technology; the FORST program in Benin permitted learners to take classes at McGill University, in Canada; and the RESAFAD program in Djibouti connected teachers to training at French universities (Darkwa & Mazibuko, 2000). The most successful programmes also take advantage of resources offered by the international donor and development community, mainly the World Bank and UNESCO.

Many West African countries that belong to Sub-Saharan Africa offer DE at the higher education level but with several challenges. Although the laborious hand-copying of materials is no longer required, learners and institutions are faced with the prohibitive cost of hardware, the inability to agree on using a common language, an over-reliance on foreign aid, lack of technical support, as well as internal conflict.

Komakech (2017) speculated more recently that OS could be a solution for the schooling challenges being faced in Uganda. Subsequently, the Southern African Development Community Centre for Distance Education (SADC-CDE), with support from COL, hosted a workshop in Kigali, Rwanda from 15 to 17 May 2019 to sensitise participants to OS and introduce COL’s Open and Innovative Schooling model. Participants hailed from Kenya, Rwanda, Tanzania and Uganda. Nineteen participants attended from ministries, universities and other organisations. Dr Heroldt Murangi, Director of NAMCOL, served as the workshop facilitator, and Ms Fancy Amey, Director of SADC-CDE, served as the coordinator. Participants were exposed to case studies of open schooling from Botswana, India and Namibia, as well as to the OS online community known as COMOSA (the Commonwealth Open Schooling Association). Topics covered the inputs for successful open schools, including financing, monitoring and evaluation, teacher training, and the use of OER.

Participants committed to strengthening their action plans for deliberation upon return to their home countries. One Ugandan delegate who acknowledged having been unaware of such a schooling model now viewed the potential of OS as crucial to increasing enrolment in her country, where 56% of secondary-age learners are out of school, according to the Education Policy and Data Centre (COL, 2019).

COL is currently working with Elimu TV in Kenya and the Institute of Adult Education in Tanzania to support OS initiatives in East Africa. There is also
recognition that the education of nomadic children through mobile teaching and learning needs to be strengthened. However, institutions cannot totally rely on the Internet for OS. They need to consolidate using the postal system, television, radio, text messages and even meeting face-to-face for very short periods in the semester.

Challenges

The evolution of DE in Sub-Saharan Africa has been hampered by several factors, including:

- limited investment in the digitisation of DE systems
- lack of quality policy frameworks in most African countries where DE is taking place
- inadequate funding for the development and implementation of DE
- limited skilled personnel in ODL pedagogy,
- the commercialisation of DE programmes at the cost of human exploitation

In addition, in West Africa, the challenges of OS also include:

- the prohibitive cost of hardware
- lack of technical support
- lack of an accepted common language for learning

This scenario is similar in many countries. However, despite barriers of initial cost, leadership, governmental support, and sustained interest, countries such as Guinea Bissau, Lesotho and South Africa were early implementers of national radio delivery systems supporting OS programmes (Murphy et al., 2002). The technology or pedagogy that is dominant in one generation does not go away when the technologies in the next generation arrive. Instead, the new technologies tend initially to be added as supplements to the existing ones before later emerging as the dominant technologies of the day.

Conclusions

In summary, it can be observed that OS has evolved through DE in four stages; first, the use of print-based correspondence education; second, using multimedia models based on print, audio and video technologies; third, using tele-learning models based on telecommunications technologies to provide opportunities for synchronous and asynchronous communications; and fourth, using technology of the 4th Industrial Revolution, the direction in which OS is heading (Parenty, 2019). Most of the programmes still have a centre-based model, but there has been a move from text behind glass to the use of multimedia — for example, NAMCOL supplements text-based resources and decentralised centre-based support with television, radio and multimedia OER content developed in and shared through the Notesmaster platform. BOU’s Open School is increasingly supporting learning through the open source platform Moodle.

Open schooling in Africa has been hampered by diverse factors, ranging from political will to limited infrastructure. Further, it has been observed that despite the sustained development of ICT, which includes the use of web-based training
systems, videos and online training modules, the traditional OS delivery methods continue to prove the most reliable, sustainable and widely used. Africa now has several successful OS programmes whose strength comes from the cooperation of universities, international donors, governmental developmental organisations, and local institutions. Just as there is no one right way to teach in a classroom, so there is no one right way to teach at a distance. However, we are seeing a growing use of technology in both contexts, a process that has been accelerated in response to the recent COVID-19 pandemic.

References


Introduction
The international development community has just ten more years to provide high-quality and equitable education for all, as envisaged in Sustainable Development Goal 4. Trends show that a business-as-usual approach will not bring us close to achieving universal primary and secondary education by 2030. Therefore, there is an urgent need for greater investment in education at the global, regional and national levels.

There is enough evidence in the Asian sub-continent to show that investments in school infrastructure by governments will not, on their own, help in achieving the “education for all” objective. Children and youths are being deprived of the fundamental right to education due to issues of access, low quality and high cost. Through its inherent flexibility, open schooling caters to a range of learner needs. Open schooling is gaining a lot of importance in Asia, as it resonates well with the dynamics of 21st-century society and supports lifelong learning that prepares people for the different roles and situations they will encounter during their lifetimes.

Goals/Overview of Chapter
This chapter describes open schooling in the Asian context and discusses evolving open schooling practices in Asia.

The Asian Context
Asia is the largest and most populous continent in the world, with about 4.4 billion people spread over 40 countries varying from large countries like China and India to small countries like the Maldives.
Besides having diverse human and physical geography, South Asia faces many challenges too. The continent is vulnerable to natural disasters, lack of political stability, rising terrorism, wars and religious conflicts, household poverty, language challenges, child labour, gender discrimination and child marriage, all of which adversely affect the learning environment. Natural and human-made crises further increase the challenges in delivering quality education services to learners. In addition, meagre public funding for education restricts the delivery of inclusive and equitable quality education for all (Latchem & Jung, 2010; UNDP, 2019).

Millions of children attain primary education without acquiring the basic skills of numeracy and literacy. Many classrooms are teacher centred and follow rote-based learning, and numerous children are subjected to corporal punishment and discrimination. Girls pursuing education in the sub-continent face a lot of challenges. Quality education can help lessen dropout rates and ensure improved transitions from early childhood levels into primary and secondary education.

Of the 63 million out-of-school children (OOSC) of primary school age, 34 million live in Sub-Saharan Africa, followed by ten million in Southern Asia. India and Pakistan combined account for more than 80% of South Asia’s total OOSC, followed by Bangladesh, Afghanistan and Nepal (UNESCO, 2016).

There are 61 million adolescents of lower secondary school age who are not in school. Sub-Saharan Africa (27 million), Southern Asia (18 million) and Eastern and South-East Asia (8 million) are home to nine out of ten out-of-school adolescents. Sub-Saharan Africa has the highest rate of out-of-school adolescents (37%), followed by South Asia (17%) and Northern Africa and Western Asia (14%).

Out of 139 million upper secondary school-age youths who were not in school in 2016, the largest proportion, comprising 67 million, live in Southern Asia, followed by 36 million in Sub-Saharan Africa and 16 million in Eastern and South-Eastern Asia. Nearly half of all youths in Southern Asia (48%) are out of school.

However, since the early 2000s, South Asia has shown remarkable progress in increasing school enrolments through the introduction of policies and interventions that have expanded education coverage and reduced the number of OOSC, as illustrated in Figure 20. Of the 278 million children of primary and secondary school age in South Asia, 31.9 million were out of school in 2014.

Figure 20: OOSC trends in South Asia (UIS Fact Sheet, 48; 28 February 2018)
Some countries, such as Singapore, South Korea and Japan, rank high on the human development index, while others rank very low. This unevenness is echoed in access to education. Several countries have more than 25% OOSC, despite the global average of 5%, while adult illiteracy is more than 25%.

Technology plays an important role in open and distance learning (ODL) and can be a possible solution. The quality of ODL programmes can be ensured by adapting to new educational technologies, when appropriate technologies are used in appropriate ways. Media such as computers, telephones, radio and television broadcasts as well as digital libraries serve as multiple delivery channels to augment the quality of traditional face-to-face schooling provision while also providing a means of access to schooling for children and youths who otherwise would not be reached. Self-instructional materials function as the base, while the Internet provides a fast and effective medium and bridges the gap between the teachers and the taught to reach diverse groups of learners. However, this is possible only if the learning programme is designed appropriately. As noted in Chapters 4, 10, 12 and 13, in Africa, the Pacific and the Caribbean, Internet access is often weak and very expensive. In Canada, access is good, but the cost is high. India has rolled out public access to free Wi-Fi, but this is an exception rather than the rule.

In January 2019, China ranked first in the world for Internet usage, with around 802 million users, while India was second with 560 million. The Asian region had the largest number of Internet users worldwide, reaching nearly 2.1 billion in 2018; this translates to 48.4% of the population in the Asian region using the Internet (ITU, 2019; Statista, 2019).

Open education: Asian perspective

Open education can be understood in different ways in different places (Bates, 2015; Shuttleworth/Open Society, 2007).

Open education in Asia usually refers to:

- open and distance learning
- open schools/universities
- massification
- democratising education
- reaching the unreached

Open education in Asia is characterised by:

- increased access
- quality education
- flexible learning
- lifelong learning
- affordable education
- internationalisation
- institutional collaborations
Like the African region discussed in Chapter 10, the Asian region has seen several generations of distance education provision, with different generations co-existing in response to diverse contexts. The general evolution is depicted in Figure 21.

![Figure 21: Generations of distance education provision in Asia](source: Kmusser, CC BY-SA 3.0, via Wikimedia Commons)

**Pillars of Openness**

Three key pillars support open provision in the region: access, content and technology.

**Access**

Access has levelled the playing fields for everyone as never before. Access to information and knowledge is increasing the demand for lifelong learning opportunities to bolster the free flow of information to learners. The open schools in Asia provide access to millions of learners.

Besides Asia's two mega open schools — the National Institute of Open Schooling (NIOS), India, with approximately 3.5 million learners, and the Secondary Technical School of the Open University of China (OUCSTTS), with about 3 million learners — other open schools of Asia also make a significant contribution by providing educational opportunities in their respective countries outside the mainstream education systems. These include Allama Iqbal Open University, Pakistan (Secondary School Certificate, Intermediate); the Open School at Bangladesh Open University (OS-BOU); and the Open School at the National Institute of Education, Sri Lanka.
Content

Content is king, but delivering the right message to the right person is not an easy task in a web of digital content, as it requires an effective content strategy to create meaningful, engaging and sustainable content that attracts new learners and as well as retains existing ones. Content needs to be planned in a way that links directly to learners’ needs and can be shared in a simple and consistent manner. As noted in Chapter 3, content is increasingly accessible in the form of OER; some common sources of OER content used in Asia are illustrated in Figure 22.

Figure 22: Some sources of OER content used in Asia

Technology

As observed in Chapter 4, technology is not the ultimate accelerator for knowledge dissemination, yet we see that in recent years, open schools across the globe have benefited because of improved connectivity through the Internet, the availability of cheap mobile networks, and an increasing array of interactive applications. Even though judicious use of technology is often lacking, it is still a boon for ODL, as it helps learners proceed at their own pace and makes education flexible and accessible for them.

Technology when exploited to its full capacity can help in achieving the objectives of an ODL system. But when catering to large numbers of learners in ODL, the basis for adopting and utilising technology for educational purposes should be respect for learners’ autonomy, universalisation of education and mobility of people.

In terms of technology, massive online open courses (MOOCs) offer a new opportunity for developing-world institutions to integrate many useful features
at scale. The MOOC is a new technology in ODL that allows multiple interactions simultaneously among peers and mentors. Educational institutions have struggled with campus-based computing arrangements that were not meant to serve large numbers at any given time. The recent availability of open source MOOC portals is an important development, with several choices available as national MOOC portals in Asian countries (Kanwar & Balaji, 2013), as illustrated in Figure 23.

MOOCs can help us reach large numbers of learners more effectively — especially in the mega schools, where materials production and dispatch are such massive and time-consuming operations. In addition, we can improve the quality of provision through the use of learning analytics, a component of MOOCs, to improve teaching–learning by providing more personalised and customised learning pathways. The data generated through learning analytics can serve to develop effective and flexible systems for credit transfers and the recognition of qualifications. Moreover, adopting MOOC technologies can help ODL institutions provide more effective and rigorous registration control and testing services through existing contact centres (Kanwar & Mishra, 2015).

Figure 23: Evidence of the growing use of MOOCs in Asia

Some mega open schools/universities in Asia

The 1960s marked a massive expansion of distance education across Asian countries in higher education, in the form of open universities. However, distance education at the primary and secondary levels in open schools was confined to only a few countries. Distance education has therefore historically been primarily associated with higher education provision, but the need for open schooling cannot be denied, given the statistics cited earlier. Many countries, such as Bangladesh, India, Indonesia, Namibia, South Korea and Zambia, have now set
up open schools for primary and secondary students, while similar initiatives are being considered in China, Egypt, Nigeria, South Africa, and many other countries, including the United Kingdom. Despite having started only recently, open schools are quickly catching up to meet the educational requirements of out-of-school and other deprived learners, and some of them have quite high enrolments. For example, NIOS, which started in 1989 as an autonomous organisation under the Ministry of Human Resource Development, Government of India, now has a total enrolment of more than five million students.

Asia demonstrates two distinctive open school models. Bangladesh, China and Pakistan are offering their school-level courses through their universities, making extensive use of ODL without a distinct open school structure. In India, Indonesia and South Korea, the central government has created an independent structure that offers an alternative system of secondary education.

There is insufficient space to include all countries in a single chapter, so the discussion that follows provides a snapshot of practices in some of the countries of Asia.

**India: National Institute of Open Schooling (NIOS)**

NIOS is an autonomous organisation with nearly 3.5 million learners on its rolls. It offers education through the ODL mode, with optimal integration of ICT providing academic, vocational, basic education and teacher education programmes up to pre-degree levels. Learners are provided with the flexibility and opportunities to learn at their own pace and place.

In pursuit of its vision to provide sustainable, inclusive learning with universal access to quality school education and skill development, and to attain the cherished goal of education for all, NIOS has particularly addressed the needs of various priority groups — girls and women, the socially and economically disadvantaged, people with disabilities, as well as minorities who have been unable to pursue their education but wish to study and upgrade their skills. NIOS also offers courses in different languages, providing learners with the opportunity to pursue an education of their choice in their mother tongue or regional language.

Besides organising advocacy programmes and conferences for the upscaling of state open schools, NIOS has been collaborating with international organisations to promote open schooling programmes at national and international levels through networking, capacity building, resource sharing and quality assurance. It has introduced several innovative practices, with the extensive use of ICT and a strong focus on student support, as summarised below.

**Innovative practices**

- DAISY-enabled talking books for the visually challenged; disabled-friendly website; development of Indian sign language dictionary and videos for six courses at the secondary level.
- Over 100 Special Accredited Institutes for Education of the Disadvantaged as support centres for enrolled learners.
- State-of-the-art audio/video and multimedia production studios for production and broadcast/telecast.
• Public examinations conducted twice a year, and more recently, examinations on demand.
• Partnerships with industry to deliver skill-based courses.
• Active participation in the Commonwealth Open Schooling Association (COMOSA) to promote open schooling. NIOS holds the Asia Chair for COMOSA.
• Formulation of a gender policy and a quality policy for NIOS, in collaboration with COL.
• Provided insight and expertise in the development of a gender policy for OS-BOU. NIOS has replicated the same for the Open School at the National Institute of Education, Sri Lanka, with the support of COL.
• Peer-to-peer quality assurance audit in collaboration with OS-BOU, with the support of COL.
• Professional support in the establishment of 20 state open schools in India. NIOS acts as the secretariat of the National Consortium of Open Schooling.
• Catering to the educational/employment requirements of a sizeable Indian diaspora in other countries.

**ICT interventions**

• NIOS has been identified as one of the partners in the national MOOC initiative for SWAYAM (Study Webs of Active Learning for Young Aspiring Minds), designed to achieve the three cardinal principles of national education policy: access, equity and quality.
• SWAYAM Prabha: NIOS telecasts 24/7 educational programmes through five DTH channels.
• An interactive web radio channel, Mukta Vidya Vani (Open Education Voice), broadcasts podcasts live every day to facilitate interaction between learners and subject experts.
• State-of-the-art studios are available, and video programmes developed are also uploaded on YouTube.
• An ICT-based on-demand examination system.
• Development of open educational resources (OER) for academic and vocational education.
• Development of appropriate study materials for the Virtual Open Schooling platform that provides online courses.
• Development of appropriate study materials for NIOS Connect (a mobile app for Android users, offering easy access to NIOS content) and the NIOS D.El.Ed. mobile app (which provides information about the D.El.Ed. course discussed as a case study in Chapter 4).

The courses so offered have the following characteristics:

• Cafeteria approach based on the principle of “we offer what you want to learn.”
• Flexibility in offering courses for focus groups as per their need.
• Self-paced learning (allowing learners to complete a programme in five years).
• Need-based vocational courses and integration of academic with vocational courses.
• Integration of gender and life-skills components in the course materials.

**Learner support system**

• 24/7, year-round facilitation of admission through NIOS-online. With its toll-free number (1 800 180 9393), the Learning Support Centre provides tutoring/counselling support.
• Study centres are established in formal schools, NGOs, and agencies for facilitating learning.
• Credit accumulation facility.
• Provision for re-admission with transfer of credits from other examining boards.
• NIOS has also launched a community radio — Radio Vahini, 91.2 MHz, with special approaches to the community within a radius of 10–15 kilometres.
• Provision of online systems, such as the Student Information System, seat availability at study centres, the Ask Your Teacher counselling platform, exam registration, a payment gateway, status of dispatch of study materials/identity cards, availability of course materials, and study centre information.

**Open Junior Secondary School (SMP Terbuka), Indonesia**

Distance education in Indonesia is an effective means to provide education in remote areas, due to several challenges resulting from low computer literacy rates and the lack of electricity and Internet infrastructure. For children who do not have access to schools, there are open radio schools to complete junior high school. SMP Terbuka, organised by the government free of cost at schools, small mosques, community places and other neighbouring sites, is a part of Main Middle School, which uses independent learning methods to conduct education.

The government has been offering this radio school as a formal education measure to junior high school students in far-flung areas. Further, in an effort to provide a nine-year basic education to children, the government has also been organising distance learning instructional packages in the form of the “KEJAR Paket A” primary school diploma and the “KEJAR Paket B” junior high school diploma. These are offered based on printed self-instructional materials and regular tutorial services, while radio school takes advantage of the availability of radio.

Innovative practices in ICT have influenced the growth and development of distance education in Indonesia, from providing education for teachers, to formal degree-granting institutions, and now the offering of continuing education programmes based on newly emerging needs. The courses run for education participants assist them with continuing to higher levels of education or to earn livelihoods. Other out-of-school divisions, such as child-care centres and play groups, are organised by the Ministry of Social Affairs in collaboration with the Ministry of Education and Culture.
Open secondary education, South Korea

Besides civic schools and industry-attached schools, Air and Correspondence High Schools were started, with 11 branches in South Korea. Later, these were renamed Open High Schools, and from 2016, there were 42 Open High Schools and 20 Open Middle Schools. They cater to learners who dropped out of high school for various reasons, come from disadvantaged backgrounds, have disabilities, or come from diverse cultural backgrounds. Over 230,000 learners have graduated. In 2016, approximately 10,000 students were enrolled in academic programmes in Open High Schools, while about 3,000 students were enrolled in Open Middle Schools.

The Korean Educational Broadcasting System (KEBS) supports school education and provides opportunities for lifelong education, thereby contributing to the national development of education. KEBS (http://www.ebs.co.kr) operates six channels — EBS TV (ground wave), EBS FM (radio), EBS Plus 1 (high school), EBS Plus 2 (elementary and middle schools as well as vocational schools), EBS English (English education) and EBS America (the Americas) — broadcasting diverse educational content and striving to improve public education, keeping in view the high cost of private education.  

Conclusion

In pursuance of the directives issued by the governments of Asian countries, and the need for physical distancing that results in school closures or limited reopening, thereby causing further disruptions in the education sector, ODL seems the best remedy to meet the challenges of education during the ongoing COVID-19 pandemic in Asia.

The imbalance between demand and supply of school education has always been a challenge for Asian nations. There is unmet demand, but a strategy to meet the demand has also been a challenge. The solution surely lies in distance education. The shortage of teachers and adequate infrastructure further strengthens the need for open schooling. Traditionally, distance education was considered a second-best option. However, it is fast becoming a mainstream option as athletes, business people and competitive youngsters, among others, appreciate the opportunities provided for lifelong learning while pursuing livelihoods. They have demonstrated the possibilities for both access and success using ODL in the form of open schooling. The full potential of open schooling can be harnessed through effective leadership, the building of staff capacities, and sustainable collaborations.

A good leader is one who creates leaders, not followers. Besides having deep human qualities, good leaders in ODL are an enabling force, helping institutions and people to perform and develop. A leader in ODL has to be a decision maker and a change maker who introduces shifts according to learners’ needs. However, it is always desirable for a good ODL leader to have a strong understanding of the concepts of ODL and to continuously study and upgrade their competencies. Failing to communicate effectively and being too “traditional” are some of the undesirable characteristics that can easily hinder ODL activities.

Staff training and development are important aspects of ODL provision. It is necessary to orient staff to ODL, as most have been recruited from the regular, face-to-face schooling system. Lack of proper training may lead to loss of quality in ODL activities. Moreover, training and continuous professional development as integral components of an ODL system produce significant results in employees, such as enhanced productivity, retention and morale.

Institutions do not need to have similar interests or a similar level of expertise to collaborate, but they do need to have resources that other institutions would like to share. Through collaboration, institutions share: knowledge and expertise for joint research projects; the design and delivery of curriculum and course materials; infrastructure such as ICT facilities; human resources for external examinations or peer review; services for libraries or student counselling; and institutional culture and perspectives through student or faculty exchange programmes.

Collaboration can also be through an education consortium — an association of several institutions on a joint education venture that is funded, governed and staffed by partner members and other stakeholders. A consortium provides an effective framework and support system for inter-institutional sharing and collaboration, and helps institutions develop cooperation regionally, nationally or internationally.

In addition to these other factors, the sustainability of open schools is of paramount importance. There are several ingredients for sustainability: clarity of purpose, intentionally keeping in view the service demands in the environments where the institution is working, and economic viability to make ODL systems less dependent on government financing. Even small fees can generate large revenues when learner enrolment is based more on economies of scale. An appropriate institutional structure is also crucial for long-term success; for example, open schools that are part of universities may have to wait a long time for approvals from higher management, which is not optimal for the open schools' functioning. An effective teaching–learning system is also important for learners to enjoy intellectually exciting approaches to learning. In the long run, learners appreciate a good combination of interesting study materials, effective student support and good logistics, along with intellectually challenging activities and assessments.

Open schools as part of open universities

Bangladesh Open University's Open School

Distance education started in Bangladesh with the support of the Japanese government to develop a school broadcasting system with the objective of improving the quality of teaching at the secondary level. For this, the Japanese government procured 1,100 audio control console sets, comprising radio receivers, amplifiers, cassette recorders, public address systems and speakers, along with ten audio mobile vans. Today, BOU is making new strides in employing the most modern communication technology for effective education delivery. Rapid innovations in ICT have helped a great deal with eliminating physical distance. BOU has fully harnessed ICT to facilitate and support its students all over the country and provide better-quality education. Examples include:
• the provision of student-related information through the Web (with databases at the back end)
• a learning management system
• interactive virtual classrooms
• mobile technology
• pre-recorded video programmes and live programmes (live streaming) through the use of a national TV channel (BTV) and a satellite TV channel (Sansad TV)
• radio programmes for both formal and informal academic courses, in collaboration with Bangladesh Radio
• video conferencing

BOU also uses the expertise of faculty members and prominent resource persons outside the institution to conduct weekend classes/lectures, workshops, and teacher–student dialogues.

The Open School is one of the largest of BOU’s six schools in terms of student enrolment. Any person can be admitted to any programme in the school, irrespective of age, gender, disability or profession. Currently, the school offers five programmes: Secondary School Certificate (SSC), SSC Niche 1, Higher Secondary Certificate (HSC), HSC Niche 1 (Army, Navy, and Air Force) and Bachelor of Business Studies (BBS). This school initiated the Senior Secondary Certificate programmes in 1995 and the Higher Secondary Certificate programmes in 1998. The Business Studies programme began in the 2005–2006 session.

The Open School mainly provides pre-university programmes for youths and adults who could not complete their school and college-level studies. It also runs some tertiary programmes, based on learners’ needs.

At present, the Open School is run by the core faculty of BOU, which offers programmes through the use of self-learning materials, radio and TV broadcasts, and face-to-face contact at the learners’ locations.

ICT interventions:35
• over 450 e-books downloadable from https://www.ebookbou.edu.bd
• video and audio lectures uploaded on BOUTube, YouTube, Facebook and Twitter
• mobile technology (with micro SD card embedded, preloaded with audio-video lectures)
• education apps
• interactive virtual classrooms
• eLearning platforms/learning management systems
• video conferencing (using Skype and UGC BdREN infrastructures)
• Internet-based web TV (OpenBanglaWebTV) and web radio (OpenBanglaWebRadio)
• ERP (comprehensive university management software)

35 From the BOU website, www.bou.edu.bd.
• online service and payment system
• OER repository of BOU
• online eLearning and teaching programme
• online admission and result management systems

Allama Iqbal Open University, Pakistan

Since its establishment, Allama Iqbal Open University (AIOU) has been providing and expanding its educational and training facilities to help working people and females enhance their qualifications and occupational skills. The university has introduced a wide range of undergraduate, graduate, master’s and doctoral programmes. The university also offers basic functional courses for illiterate and semi-literate learners. These programmes distinguish the university from other educational institutions in Pakistan, as it caters to the needs of all age groups and levels of education.

The main features of AIOU are as follows:

• semester system offered twice a year, in spring and autumn
• the biggest university in the country, with an average student enrolment of more than 1.2 million per year
• more than 2,000 courses offered
• nine regional campuses, 33 regional centres, 41 approved study centres (for face-to-face programmes) and 138 part-time regional coordinating offices
• 1,172 study centres throughout Pakistan
• the largest publishing house in Pakistan, printing over 1.8 million books annually
• more emphasis on science and technology by introducing programmes in disciplines such as Physics, Agriculture Extension, Livestock Management and Nutrition, Forestry Extension, and Computer Science. Collaboration with the private sector to establish study centres for coaching and practical training in the fields of Computer Science and Management Sciences
• the largest teacher education institution in Pakistan, with an average enrolment of over 400,000
• collaboration with Pakistan Atomic Energy Commission to provide lab facilities for AIOU students
• establishment of resource centre for basic functional education (mainly for illiterate learners), with literacy and post-literacy materials
• first institution in Pakistan to offer post-graduate level programmes in special education
• the only institution in the country offering post-graduate programmes in Educational Planning and Management
• introduction of master's, MPhil and PhD programmes to develop professionals and enhance research capabilities in teaching and research institutions
• well-established Institute of Educational Technology that has in-house facilities for producing TV, radio and non-broadcast programmes

• *AIOU Magazine* is a regular television programme produced in IET studios and telecast fortnightly from PTV-National on the first and the third Mondays of each month. This feature programme includes reports on the month’s latest academic and co-curricular activities. The university has its own FM radio channel, and live FM radio transmissions are made available for AIOU students.

ICT interventions:

• the first university in Pakistan to establish a student database

• computerisation at main campus and in the regions through ~700 PCs

• provision of networking facilities between the main campus and the regions to exchange data/information and redress students’ complaints

• provision of Internet service at the main campus

Unfortunately, the AIOU Secondary School Certificate, Intermediate programme seems to have been suspended. It is to be hoped that this will be resumed or that the need will be addressed by another institution.

**Open School, National Institute of Education, Sri Lanka**

The Open School in Sri Lanka was established as a department of the National Institute of Education (NIE) in 2005 as an alternative path to provide education for those unable to complete their formal education for a variety of reasons, such as poverty, social-cultural factors and disability-related factors. A study conducted by the International Labour Organization (ILO) in 2005 found that the number of school dropouts in Sri Lanka was about 60,000. A more recent study (World Bank 2015, pp. 13–15) identified a mismatch between what the education system delivers and what employers expect. It may not be surprising, therefore, that according to the most recent statistics available from UNESCO, around 17% of adults aged 25+ have not completed even lower secondary education successfully (World Bank, 2018), while UNICEF (2019) reports that only 40.2% of adolescents aged 17–18 continue their secondary education.

The rigid rules and regulations of the school education system prevented students who dropped out from re-entering. There were also no alternative pathways to provide education for differently abled children and children in rehabilitation centres.

In response to these situations, the National Institute of Education introduced its Open School as a low-cost non-formal channel to provide education for children, youths and adults who for various reasons missed the opportunity to complete their formal education.

Through the establishment of regional study centres throughout the country, Open School programmes are implemented to provide education for a variety of disadvantaged children and youths. However, there is an urgent need for the Open School to address the challenges it faces in achieving its goals. It is difficult to provide a flexible learning environment for learners due to the lack of infrastructure facilities, including for technology. Most tutors who work in

36 Information on AIOU is from https://www.aiou.edu.pk/overview.asp.
regional study centres are teachers in formal schools, and they are unable to adapt to teach dropouts and learners with diverse backgrounds and needs. Another major problem is keeping girls and women actively engaged in Open School programmes, due to their involvement in social and household activities.

Open University of China, Secondary Technical School (OUCSTS)

The Secondary Technical School is an open educational school, established as a part of the Open University of China under the Department of Vocational and Adult Education, Ministry of Education. It offers secondary technical degree education to junior and senior middle school graduates, as well as employees, veterans and returning migrant workers, based on a modern tutoring approach and multi-media tutoring. It directly enrols junior middle school graduates and employed youths and certifies national education-level secondary degree education graduates. The OUCSTS, along with 44 provincial radio and TV university (RTVU) secondary technical schools have formed a nationwide RTVU network, and may be supporting around three million learners at any one time. The teaching approach varies from full-time study in the form of face-to-face tutorials to spare-time study in form of online, face-to-face and individual tutorials.

In response to the needs of local populations, the OUCSTS provides adult secondary technical education, practical skills training, qualifications training, and on-the-job skill training. It also has piloted work-study programmes, including the University-Enterprise Assisted Learning Trial, the Phased Cultivation through University-Enterprise Cooperation programme, and the Work-Study Program Trial.

OUCSTS offers the following programmes: Agriculture and Forestry; Civil Engineering and Water Conservancy Engineering; Processing and Manufacturing; Information Technology; Trade and Tourism; Finance and Economics; Social Public Affairs; Transportation; Culture and Sports; and Teacher Training.

Innovative practices/ICT interventions:

- OUCSTS is a new-style university supported by modern information technology
- Internet Plus University, with 538 cloud classrooms that have a three-in-one “cloud, route, and terminal,” which enables a digital learning environment and provides a one-stop distance education cloud platform
- Digital Learning Resource Centre offering open public courses for learning and learner support
- free video learning resources through China Education Television’s (CETV) RTVU Classroom channel and the Open Classroom section of the RTVU online learning platform
- the online tutoring university teaching platform provides learners with rich learning resources, including online courses and compulsory texts for all majors
- the Distance Reception Centre offers individualised online support
- academic support through face-to-face tutorials, telephone, QQ, WeChat, and other modern communication methods
OUCTST's Education TV station offers degree and non-degree education video resources to students and the public through CETV-2 (China Education Television, channel 2).

**Changing perspectives: implications for the future (OS through ODeL)**

There is a need to develop policies and programmes for the provision of quality distance learning in open schools, with appropriate financing and use of technology, including the Internet. There is the potential to improve access using MOOCs and other modalities that meet accepted quality standards (Kanwar et al., 2016).

**Lifelong learning for all**

International organisations such as the G8, the ILO, OECD, UNESCO and the World Bank, and regional organisations such as APEC, ASEAN and the European Union are taking steps to make lifelong learning a reality (ILO, 2003). According to the ILO, “lifelong learning ensures that the individual’s skills and competencies are maintained and improved as work, technology and skill requirements change; ensures the personal and career development of workers; results in increases in aggregate productivity and income; and improves social equity” (Riordan et al., 2000, para. 5).

Hence, it is necessary to create a bridge between formal, non-formal and informal learning, as all three contribute to education. Lifelong learning mainly focuses on the learner being at the centre, catering to the learner’s diverse needs, and emphasising motivation to learn through self-paced, self-directed and, increasingly, ICT-assisted learning. There is also a need to strengthen outreach and provide educationally remote target groups with educational guidance and support. Innovative approaches to credentialing, such as recognising semester credentials as acceptable proof of competency, are also important.

**Focus on skills**

Skills have become increasingly important in determining an individual’s ability to secure a job, retain employment and move flexibly in the labour market. Besides vocational skills, key competencies and core skills, the pervasiveness of digital technologies in daily life is fundamentally changing the way individuals access and elaborate knowledge.

An appropriate curriculum fused with basic skills, technology and literacy that encourages lifelong learning providing learners opportunities to apply skills they have learned and facilitates a deeper understanding of content. Creating industry-focused work streams for learners is yet another way of bringing industry closer to the curriculum (Prensky, 2012).

However, developing skills, knowledge and competencies requires collaborative efforts from partners. Strategic alliances between education providers and employers can help predict future job requirements. Individuals in a knowledge-driven economy need to play an active role mediating between the worlds of work and education.
Capacity building

As discussed in Chapter 2, curriculum reform is a dynamic process, and its success depends on the capacity to shape or adopt a shared vision. It is necessary to develop the necessary professional competencies in the various aspects of curriculum change. Besides developing the knowledge, skills and attitudes of individuals engaged in curriculum reform, it is important to empower them in areas such as policy formulation, curriculum design, material development and evaluation strategy, implementation, and curriculum monitoring and evaluation.

Improving the quality of an ODL system requires a complete overhaul of support services. Besides being strengthened, learner support services need to be expanded in conformity with the technological advancements around us. In this era of educational commodification, it is imperative that ODL improve learner support services.

Student assessment is a crucial aspect of ODL, not only for providing constructive feedback to improve learning, but also as the basis for awarding qualifications. Besides facilitating the achievement of learning objectives, student assessment methods must be reliable and in line with current best practices. ICT-based assessment tools such as e-portfolios should be used to establish student-friendly innovative assessment processes. To develop confidence amongst learners, an open schooling assessment system should be transparent and reflect learning rather than merely measuring marks obtained. It is time to rethink and redesign innovative and alternative assessment practices in open schooling systems.

MOOCs and OER have helped ODL practitioners embrace openness in a systematic manner and provide access to quality resources to a larger population during more flexible hours. OER have helped us extend coverage of the curriculum and adopt a broader range of teaching–learning methods, whilst MOOCs promote higher learner autonomy and more structured course content (Kanwar & Balaji, 2013; Kanwar & Mishra, 2015).

References


CHAPTER 12

Developing Practice in the Caribbean

Sheldon Samuels

Introduction

This chapter focuses on the English-speaking islands in the Caribbean (Antigua and Barbuda, The Bahamas, Barbados, Dominica, Grenada, Jamaica, St Kitts and Nevis, Saint Lucia, St Vincent and the Grenadines, and Trinidad and Tobago), as well as the mainland nations of Belize and Guyana (see Figure 24).

Figure 24: The Caribbean region

Public education provision expanded rapidly in the English-speaking Caribbean countries from the middle of the 19th century. A primary education, together
with the ability to speak the languages of neighbouring countries (for example, Spanish) opened doors to some opportunities, while competitive scholarships provided access to secondary and higher education and the possibility of employment in a variety of professions, in both public and private sectors. At the end of the 19th century, most schooling opportunities were provided by the religious community. It was only about the middle of the 20th century that national ministries of education gained control of all forms of education provision. At this time, provision was based on the British model (Coates, n.d.).

An important role-player in the region is the Caribbean Community (CARICOM), comprising 20 countries and representing about 16 million citizens. CARICOM was formed on 4 July 1973 and promotes regional integration through economic integration, foreign policy coordination, human and social development, and security. Mainstreaming access to education is an important goal of CARICOM. Although all members met the Millennium Development Goals for primary education provision, there was mixed success at the secondary level, and in about 2012, the Caribbean Regional Policy Framework for Open and Distance Learning was developed to address this and other challenges experienced by the traditional education system.

Since then, the region has experienced many reforms, but there is recognition of a need to “reinvent” the purpose and nature of provision to reflect global trends as well as local realities and needs, and the Caribbean Examinations Council is a key role-player in this regard (Jules, 2015). Key issues that need to be addressed include climate change education, the relationship between the environment and violence, teacher education, and sustainable models of higher education provision (Ferguson, 2020).

However, there is also still much work to be done at the level of schooling, with UNESCO’s Institute for Statistics (2020) reporting 2,266,955 primary-level and 9,703,038 secondary-level children, youths and adolescents out of school in 2018 in Latin America and the Caribbean.

**Recent Developments in Open Schooling**

Pursuant to opening access, the Gwen Lizarraga Open School was launched on 23 August 2013 in Belize. Planning for the school was assisted by a COL-brokered twinning between the University of Belize and the Fraser Valley Distance Education School (British Columbia, Canada). Notesmaster Caribbean also supported intensive training in online content development. The school provides blended learning opportunities. The Honourable Patrick Faber, Minister of Education, Youth and Sports, speaking at the launch, said:

> The concept of the Open School is really to tear down the walls, the physical structure of the schools — it’s putting everything online and using the technology. So in effect we’re hoping that students across the nation, or people who are not students who need a good quality education or need that kind of support, will be able to access quality available resources on this website and through this initiative. (COL, 2013)

37 https://caricom.org
In 2014, Peebles undertook a gender analysis of open and distance learning (ODL) provision in the region and made the following observations:

- **Welfare:** Although primary enrolment is equitable for boys and girls, dropout rates are higher for boys overall, and there is already a gender imbalance in favour of girls by the time they reach high school. Girls’ and women’s educational outcomes, however, do not necessarily reflect this greater access to higher education, with women’s unemployment rates often being double those of men’s, and women in senior management increasing in fewer numbers than the available pool of qualified candidates in the labour market. The issues this raises for ODL are how to help women achieve better outcomes and how to get more men to enrol and graduate.

- **Access:** The main access issues are not related to education policy and infrastructure (except in rural areas) but are more a matter of poverty and socio-cultural perceptions as to what is appropriate for males and females. These views permeate Caribbean societies and the education system and have contributed significantly to the existing gender imbalances.

- **Critical awareness:** While there is growing awareness of the need to revise the curriculum for gender bias and give more thought to how to set up career counselling for male and female students to reduce gender segregation in course and programme selection, the need for increased awareness about related gender equality issues has not been addressed systemically. While the education system favours women’s participation, it does not do much to promote women’s participation in less traditional areas. This limits their future opportunities. Men’s growing view that education is for women also limits their futures and at one level needs to be addressed through increased attention to raising critical awareness of these diverse gender issues and how they affect the life choices of potential students in ODL and of the staff who work in the institutions that offer ODL.

- **Participation:** While the data on women’s participation in decision making in educational management were limited, there was enough of an indication of a gender imbalance in favour of men at this level to merit further study to determine whether this pattern of gender-biased employment is Caribbean wide. At the same time, educational institutions that offer ODL could review their own human resource breakdown and position distribution and establish appropriate affirmative action measures to address any imbalances they might find. On the other end of the spectrum, men’s lower levels of participation in ODL in the Caribbean are cause for grave concern and also require a rethinking of how to reach more men and increase their access to ODL education.

- **Control and decision making:** Women’s possibly more limited participation as senior education managers also means that they may have less input on the development of education policy. This includes policy explicating ODL, or ICT policies within the education system that act as a foundation for future ODL programming at the tertiary level. Women’s participation at the formal political level is also significantly less than men’s. While the limited number of women who are members of
parliament in the Caribbean tend to be assigned “social” portfolios such as education and social welfare, their lower numbers still mean that women have less input into how national budgets are spent and whether funding will be allocated to support the integration of gender equality into ODL and the education system in general (Peebles, 2014, pp. vii–viii).

MacDonald (2015) subsequently reported that in 2014, 1,260,271 females over the age of 15 were active in the labour force in the Caribbean, representing 59.4% of females of this age group at the time and attesting to the fact that a little schooling opens up livelihood opportunities.

More recently, CARICOM’s Council for Human and Social Development (COHSOD) agreed in 2016 to craft a Regional Strategic Action Plan to present a harmonised approach to educational reform in CARICOM. The Human Resource Development Commission was launched with the main purpose of developing the Education Human Resource Development 2030 Strategy. The intent of the strategy is to ensure that the systems operating at all levels — national, regional and sub-regional — are developing the skills graduates need to function effectively in a 21st-century economy and society.39

However, being able to teach new things in new ways does not always mean implementing them, and “[t]he areas of curriculum design, classroom instruction and testing are just a few of the areas the CARICOM Education and Human Resource 2030 Strategy and Action Plan will have to address, and constitute but one cube on one face of the Rubik’s cube of the Caribbean education system,” opines George (2016).

As Scale (2017) observes, access to the Internet is increasingly a necessary but insufficient condition for success in blended and online learning provision: it is important for ministries to ensure that there is easy access to accurate policy requirements and guidelines if home-schooling is to be employed as part of the move online.

The Belize Open School Experience

More and more, as governments place greater emphasis on standardised testing and national examinations, teachers are pressured to meet the benchmarks demanded by administration and managing authorities. As a result, many learners are left behind and eventually drop out of school. According to Thomas (2012), summarising research undertaken by the Paul Hamlyn Foundation, (there is a growing concern among the world’s developed countries about students’ levels of engagement in learning. Lack of engagement typically results in higher dropout rates, poorer levels of achievement, and active disengagement with the curriculum. In addition are those who simply are not engaged and thus eventually drop out of school; this population is growing, as “many disengaged achievers decide that the way learning is ‘delivered’ in school education is not for them and, even though they have the requisite qualifications, decide to end their formal education upon leaving school” (p. 16). Two questions come to mind as these issues continue to plague schools: What are the main characteristics of environments that learners find engaging? What design features might we need to incorporate into learning activities to see more learners deeply engaged?

According to Komakech and Osuu (2004), if open schooling is to expand access and decrease dropout rates, then this model must be examined to ensure that it provides fast-track options for retaining learners, bringing dropouts and over-aged learners to school, reducing administrative costs and enabling young people to be effective in life. It will also be very important to discuss the likely challenges for the open schooling programme and to find practical working solutions aimed at overcoming the difficulties of implementing the programme.

Open schooling is very flexible and may take on a different direction from one country to another, and from one school to another. According to Abrioux (2009), open schooling observes the ideals of learner centeredness, lifelong learning, flexibility of learning provision, removal of barriers to access learning, recognition of prior learning, provision of sound learner support, construction of learning programmes in the expectation that learners can succeed, and maintenance of rigorous quality assurance over the design of learning materials and support systems (p. 7). The model is focused on the learner.

In Belize, the quest to offer an open schooling model is unique. The goal of providing greater access to out-of-school children and youths has required a multi-sectoral effort. Apart from the Government of Belize, non-governmental organisations have played a significant role in designing, developing and implementing programmes to create access for out-of-school children and youths. The programmes are generally offered in the evenings, after normal school hours. Children who have dropped out of school or have done poorly on the primary school leaving examination, or who drop out of secondary school, may access these programmes to either complete their primary school equivalency certificate, complete skills training or even prepare to enter secondary school. Many Spanish-speaking immigrants living in Belize enrol in these programs to learn English as a second language (ESL). These programmes are usually offered at three levels: basic, intermediate and advanced. While many immigrants have benefited from this programme, many do not have access to it. The ESL programme is generally available in urban areas, but those who need it most are from rural and border communities. One of the goals of the Government of Belize is to provide support to this population through a multi-ministry effort. Currently, the Ministry of Education and the Ministry of Human Development and Social Transformation are the leading government ministries supporting ESL programmes for the immigrant population. One of the recommendations to ensure the programme reaches a wider audience is for both government ministries to combine their efforts and develop a strategic plan to reach this vulnerable population.

At the secondary school level, open schooling is very flexible and unique. Such programmes are designed in partnership with secondary schools. Most of the evening division institutions are governed by a secondary school board. These school boards also assume management of the evening division. Since the managing authority is the same for both the traditional secondary school and the evening division, most of the resources are shared. The major difference between the two is the timeframe for each programme. The country of Belize is divided into six districts. There is at least one evening division institution in each district, with a total of 12 evening division schools spread across the country. These schools cater for youths 16 years and older and run classes in the evening, after normal working hours. Most of the learners in these programmes are working. The
Addressing the Learning Needs of Out-of-School Children and Youths through the Expansion of Open Schooling

others are learners who have completed primary school but never got accepted into a high school, or those who started high school but did not complete it.

Despite the increase in new primary and secondary schools in Belize in the period 2008 to 2020, the growing need for greater access continues to be a major issue. That being the case, many of the evening division institutions experienced significant growth during this time. One specific institution is the Gwen Lizarraga High School Evening Division. This institution started as a joint project of the school and the Ministry of Education. The many challenges of residents in the Southside of Belize City — such as high dropout rates, lack of employment opportunities, the choice between work and school, and high crime rates — have made this programme a high priority. While the initial goal of the evening division was to create access for the out-of-school children and youths in the Southside, the school has made several adjustments to meet the increasing and shifting demands of the community it serves.

On 23 August 2013 under the patronage of the University of Belize, the Ministry of Education, with support from the Commonwealth of Learning (COL), launched the first open school initiative at the Gwen Lizarraga High School Evening Division Institution.40 The concept of open schooling here entailed a flexible and blended model of face-to-face instructions as well as open and online learning. Learners received face-to-face instruction in the classroom Mondays through to Thursdays and were given abbreviated sessions online on Fridays. Learners did not have to come to the campus for the abbreviated online sessions. The Gwen Lizarraga High School Evening Division was one of two alternative programmes for out-of-school children and adult learners that implemented a form of the open schooling model of education. Fifteen per cent of the school’s curriculum was online. Students were able to access the materials on Fridays. The school acknowledged it had the poorest attendance rate and punctuality issues on Fridays, but making the materials available at this time provided learners the flexibility needed to keep them engaged. While this was a great initiative by the institution, it lasted for only one semester. The system faced several challenges. According to the school’s director, the online portion of the programme stopped for the following reasons: several of the students did not have access to the Internet; many of them did not have dedicated time to access school work from the platform; many of them did not turn in assignments on the platform; and there were low levels of motivation and commitment to the platform. The Ministry of Education has pledged to provide support to the school to strengthen its infrastructure and provide training to its teachers in the use of OER to support learning (MoEYSC, 2016).

While the Gwen Lizarraga High School is experimenting with a blended approach to educate its population, the Kaina Online School in Belmopan City has implemented a fully developed online high school. This school was founded by Mrs. Ethnilda Paulino and Dr. Alberita Enriquez in 2014. According to its website, Kaina means endearment.41 Kaina is a private institution that seeks to address children’s high rates of dropout from secondary school and their poor performance on the Primary School Examination (PSE). According to the founder, distance and online learning via the Internet is a practical, efficient and cost-

40 https://edition.channel5belize.com/archives/89597
41 http://kaina.edu.bz/index.php/about-history/
effective means of addressing this growing problem and meeting the educational needs of individuals. She further suggests that this form of learning levels the playing field for access to education. Kaina Online School is very structured and covers ten secondary school subjects over two years. In a personal interview, the founder explained that many of the learners currently accessing the open school would not be able to access traditional schooling because of many competing interests. In fact, she said the school has learners as far away as the United States and Australia (E. Paulino, personal communication, 20 August 2020). She is excited about the Curriculum Writers Training and Content Development Project and believes the resources can support Kaina in the delivery of quality education to its stakeholders.

While the statistics on out-of-school children have improved significantly, there is still much more work to be done to reach this population. In the 2016/17 academic school year, it was noted that the highest dropout and repetition rates of secondary school age children were in the south of the country. In particular, the Toledo and Stann Creek Districts recorded the highest dropout rates (MoEYSC, n.d., p. 34). The Ministry of Education and Ministry of Human Development and Social Transformation have collaborated to construct new schools and increase the number of classrooms to ensure access for this population. The government has also supported several non-governmental organisations, such as Eglah’s Institute of Learning, the Young Women’s Christian Association, the Young Men’s Christian Association, Friends Boys School, the Youth Apprenticeship Program, and Living Hope Preparatory School, among others. These organisations offer different support programmes to out-of-school children. According to the principal of Living Hope Preparatory School, the school is a non-profit organisation that caters for at-risk youths. That group includes first-time offenders, students who failed the PSE and did not move on to secondary school, as well as students who have been expelled from either primary or secondary school. It is a second chance for these young people to get an education and change the course of their lives. Additionally, the principal indicated that Living Hope has two divisions. The first-year class is a literacy course, while the second-year class prepares students for high school and gives them an opportunity to re-sit the PSE. Since its inception in 1999, the programme has impacted the lives of many out-of-school children and youths. This programme is supported by a grant from the Government of Belize.

In the south of the country, the Independence High School Evening Division is one of the only evening division programmes to offer a high school vocational certificate. This institution is located in the heart of the Banana Belt, the Big Creek Port and one of the major tourism hubs in the country. The administrator of the programme implemented a blended model of instruction. This model has proven effective for the school, since many of its students also work. Students come to the campus three days a week and are online for the other two days. This model was chosen because the learners faced many challenges, a major one being time. This model gives the learner the option of accessing learning and support materials off campus. The school uses the Edmodo Learning Platform for its online learning. The administrator of the school is contemplating increasing the percentage of the programme online, based on the success of the school’s blended approach.

\[42 \text{ https://edition.channel5belize.com/archives/60636 }\]
Summarising the open schooling model used in Belize is very difficult because it is very context specific rather than being one-size-fits-all. The economy in the south of the country is dependent on tourism, bananas, marine products and citrus industries, so the Independence High School Evening Division offers a technical certificate programme using a blended learning model. The founders of the Kaina Online School offer a fully ODL high school certificate programme because of the many challenges out-of-school children, youths and adults face in returning to a physical classroom. The Gwen Lizarraga High School Evening Division has been experimenting with different models and is still identifying which will work best for its population, hopefully returning to a blended model of instruction once the infrastructure, further staff training, and increased bandwidth are achieved.

The Curriculum Writers Training and Content Development Project, supporting by COL and the Ministry of Education, could have very positive implications for the future of open schooling and ODL in Belize. Teachers authoring secondary school resources, and the Ministry of Education recognising and supporting the use of these resources in the education system, are bright spots for Belize’s open schooling and ODL.

**Promoting the Development and Use of Curriculum-Based OER**

Sharing curricula makes it possible to share learning resources as well, especially if these resources are OER and there is a willingness to share intellectual property (as discussed in Chapters 3 and 7). In 2018, over 60 senior educators from Jamaica, Barbados, and Trinidad and Tobago spent 13–17 August authoring over 1,600 curriculum-based OER for the start of the new school term. The repository on the Notesmaster platform was significantly boosted for the following subjects (CSEC = Caribbean Secondary Education Certificate; CAPE = Caribbean Advanced Proficiency Examination; information from COMOSA, 2018):

- CSEC Additional Mathematics
- CSEC Agricultural Science
- CSEC Visual Arts
- CSEC Technical Drawing
- CSEC Music
- CSEC Office Administration
- CAPE Economics
- CAPE Entrepreneurship
- CAPE Tourism
- CAPE Information Technology
- CAPE Law
- CAPE Building and Mechanical Engineering Drawing
- CSEC Home Economics Food and Nutrition
- CAPE Chemistry
- CSEC Industrial Technology
• CSEC Physics
• CSEC Geography
• CSEC Home Economics, Textiles, Clothing and Fashion
• CAPE Electrical and Electronic Engineering Technology
• CAPE Food and Nutrition
• CAPE Computer Science

In November 2018, the Organization of Eastern Caribbean States (OECS) and Notesmaster Montserrat Initiative was launched. The programme aims to introduce primary-level teachers to new eLearning technologies and increase the numbers of high-quality learning resources available to stakeholders across the OECS, in dedicated subject-based repositories. The content output from this programme will be accessible through the forthcoming OECS Learning Hub, which is being developed by Notesmaster in partnership with the OECS’s Education Development Management Unit (EDMU), and through which all member states will experience a highly supportive eLearning environment. Notesmaster is also supporting the Caribbean Examinations Council (CXC®) in developing its new Learning Institute platform, which will provide on-demand training to all Montserrat stakeholders. Training will be conducted by CXC® and include sensitisation of students, parents and teachers on newly released syllabuses, exams, school-based assessments, instructional materials, and all other related areas.

The forthcoming OECS Learning Hub will host and conduct the current Early Learner Programme and all future initiatives. Users will experience a virtual, user-friendly space through which interactive content, lessons and workshops will be delivered. The hub will also serve to link all the current, upcoming and proposed OECS-CXC-Notesmaster programmes together, providing a single networking experience. This OECS Hub, Notesmaster 2019 and the CXC Learning Institute will carry a single sign-on, meaning the same username and password created for Notesmaster will be used to access the OECS HUB and the CXC Learning Institute, thereby promoting a seamless browser experience across the three different platforms.

In summary, Notesmaster will assist Montserrat’s Ministry of Education and its learning communities by supporting them in realizing their own ICT goals. The partnership will also integrate MOE-Montserrat closely with the regional activities of other OECS member states and with the region’s examinations provider. The outcomes are designed to boost the ministry’s ICT capabilities. A range of customisation features will give the personnel at the ministry greater control over the experiences enjoyed by stakeholders and foster greater collaboration as they work alongside the OECS EDMU in this new digital environment. The results will give a teacher access to their own content, content from their ministry of education, content from the EDMU, content from CXC® and content from all the other CXC® participating territories. The platform will foster a social sharing approach to content dissemination and facilitate on-demand and scheduled live learning. The platform also promotes the continued creation and dissemination of OER, supporting several content creation activities in 2019 across the Caribbean (COMOSA, 2019).
Although open educational practice is enhanced by shared curricula (for example, through CXC® or the Virtual University for Small States of the Commonwealth), a number of challenges still need to be addressed to help turn access into success, especially when using a learning management system to support learning across multiple institutions or campuses. This was observed in a recent report from the University of the West Indies:

However, for the eLearning potential of inter-campus models to be realised, several issues need to be addressed. One challenge is to re-envision the LMS through an eLearning lens. The LMS should provide not only the administrative support that currently exists for courses but should also be reconfigured to facilitate online learning. A second challenge is to recognise inter-campus faculty collaboration/co-teaching as an important opportunity for professional development and the building of inter-faculty collegiality, and therefore to acknowledge and credit faculty with the time spent on such endeavours. A third challenge is to realise the cultural differences that may exist among students from different Caribbean islands and therefore to provide social opportunities for intercultural exchange among students. Finally, institutional disparities in access to the internet need to be addressed if students in the same . . . course are to have learning experiences of similar quality. (Fongkong-Munga & Royston, 2019)

There is also the need to address the enduring effects of the colonialist legacy on the curriculum and to develop the kind of knowledge and skills that are future directed (Brissett, 2018; Busso et al. 2017; Escayg & Kinkead-Clark, 2018).

**COL’s Most Recent Engagement in Open Schooling with the Caribbean**

As Kanwar (2020) noted in her opening remarks to a Focal Point meeting in Saint Lucia, in January 2020, COL has found the Caribbean region to be very receptive to the potential of ODL and the power of collaborative efforts. She mentioned the following initiatives for supporting out-of-school children and developing youths:

- COL is collaborating with the Commonwealth Secretariat and the University of the West Indies to offer a joint qualification in youth development, which is offered by 17 institutions in 15 Commonwealth countries, including by the University of Guyana.
- Belize, Guyana and Trinidad and Tobago are all actively embracing the open/innovative schooling model. Digital OER content has been developed, and preparations are underway for its piloting in selected schools and outreach centres.

More recently still, COL’s Open Schooling and Teacher Education portfolios are currently partnering with the Ministry of Education in Trinidad and Tobago to offer a MOOC titled Using Open Educational Resources for Online Learning: An Introduction. The MOOC focuses on providing teachers with examples of online resources and applications that can be used to cope practically with campus closures in the short term, but it will also provide a foundation for further capacity
building for the kind of blended learning likely to be needed once campuses begin to reopen while observing physical distancing guidelines. At the time of writing, over 10,000 teachers had accessed the programme.

References


Introduction

In Chapter 1, it was noted that while the primary focus of open schooling are children who are not in school, there is also need to address the needs of: children who are in school but not achieving; a growing number of youths who are not in employment, education or training; and adults who did not complete schooling, or not well enough to access further employment and training opportunities. As observed in Chapter 5, all these different needs can be addressed if the education system can adopt more open education policies and practices. Open education in the Pacific is well developed in New Zealand (NZ) but less so in the smaller Pacific nations. This chapter presents five case studies of open education, two from NZ, one from the South West Pacific region and three that focus specifically on schooling provision in Papua New Guinea, Vanuatu and Fiji.

The Aotearoa/New Zealand Experience

Open schooling provisions in NZ are a combination of open and distance learning (ODL) and open innovative schooling (OIS), as defined in Chapter 1. Currently, the NZ Education Act restricts who can be a provider of OIS. Te Aho o Te Kura Pouamamu (Te Kura) is the only recognised fully government-funded distance school in NZ delivering education from early childhood to Year 13.

The Virtual Learning Network Community (VLNC) is a group of school clusters and organisations who operate as a collaborative network, utilising digital technologies to enhance learning outcomes and opportunities for learners.
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(students, teachers, school communities and educators). Schools involved with the VLNC also supplement their programmes with offerings from Te Kura.

The Network for Learning (N4L) is a crown corporation that connects 99% of NZ schools to Internet services through a managed network. This gives learners attending a face-to-face school equitable access to digital technology. This service is yet to be made available for students not in a face-to-face school. However, N4L is working with Te Kura to find technological solutions to enable all students to receive this service from locations outside of schools, including at the students’ residential addresses.

In the tertiary sector, while many tertiary institutions deliver some distance learning, the Open Polytech of New Zealand (OPNZ) is the only government-owned tertiary education institution exclusively delivering ODL.

Te Aho o Te Kura Pounamu

Te Kura was established almost 100 years ago as The Correspondence School of New Zealand.

With more than 22,000 students enrolled annually, Te Kura occupies a unique place in NZ's social and educational history and landscape, providing high-quality learning programmes to a hugely diverse group of learners ranging from early childhood to young adults. This includes those who are enrolled at other state education providers and students beyond compulsory school age.

Te Kura also operates a trade’s academy, enabling the school to offer students the opportunity to gain National Certificate of Educational Achievement (NCEA) credits as well as a National Certificate in a trade or vocation, such as engineering, construction, and early childhood education. In 2014, Te Kura introduced a summer school aimed at helping students who had fallen short in their NCEA qualification to pick up the required credits needed for training, study or employment. In 2019, 1,800 students took advantage of this opportunity.

Big Picture

In the past decade, in a move to reinforce Te Kura's drive to place students at the centre of their learning, an innovative pedagogy was introduced that focuses on personalising learning and involving students in real-life learning experiences through internships as well as trades and vocational courses.

Big Picture was initiated in the United States but adapted to suit Aotearoa/New Zealand’s content and the pedagogical approach adopted by Te Kura. It puts a student’s values, context, aspirations and needs at the centre of all teaching and learning. Students, together with their families and teachers, are actively involved in creating learning pathways and plans. These plans are designed to recognise students’ unique potential, talents, strengths and requirements, and ensure they have access to opportunities to succeed.

A key aspect of Big Picture is a student’s engagement with the wider community to broaden, enhance and deepen their learning with real-life learning.

45 The NCEA is the official secondary school qualification in New Zealand.
46 https://www.bigpicture.org
experiences. This includes everything from interviewing a community expert on a shared interest to undertaking long-term community-based projects or internships.

Big Picture aligns well with much of the current international thinking about future-focused education, involving personalised cross-curricular, project-based learning. The UK Innovation Unit has identified Big Picture as one of the “10 Schools for the 21st Century” (Hampson et al., 2013).

ODL has been a significant enabler in scaling this pedagogical approach. Te Kura has over 20,000 learning objects in its Learning Objects Repository. Because students are not confined to the same classrooms where all students are learning similar content at the same time, and Te Kura has such a huge range of learning resources, it is well placed to assist students with developing unique personalised learning programmes based on each individual’s interests and needs.

There are now many powerful examples of young people working in their communities to create positive change, exploring different careers and learning more about themselves as part of their Big Picture programme. These experiences can provide an important foundation for learners to move beyond Te Kura.

A Year 13 student, Marcia, says the programme allows her to do schoolwork around her interests. “It takes the stress off me. I hope teaching will be my future career, so with my schoolwork, it’s around that interest. For instance, my focus on English is based around my work experience in schools.”

A 15-year-old student says it has made a big difference for him and his attitude towards learning, and he particularly appreciates Te Kura’s Big Picture programme. For him, Big Picture means “basically doing schoolwork — based on what you like.”

Bailey has turned his passion for fixing things, working with his hands, and helping kids in need into a thriving charity. Last year, while riding his bike around the neighbourhood, Bailey noticed an old kids’ bicycle on the side of the road with a “FREE” sign attached. He brought the bike home to fix up.

“I saw a video on YouTube with this guy who was fixing up old bikes to resell. I thought: ‘Hey, why not fix bikes up and give them to kids in need?’”

He decided to use this idea as his passion project, developing his mechanical skills and starting up a charity, Bailey’s Bikes for Kids. After designing a logo with the help of a friend who is a graphic designer, Bailey built a Facebook page that people could use to nominate kids who needed bikes, or to make contact to donate. Advice and ideas came from his parents, mentors, advisory mates and teachers to help grow his charity. Within a few months, Bailey went from fixing up and giving away that first bike, to having dozens of bikes to give away and many kids to help.
Connections with the local council, bike shops, donors and mentors helped Bailey’s charity get off the ground. He now hopes to make his success not only pay off for the kids he originally set out to help but also help him to gain NCEA credits.

Bailey’s motivation has been grounded in doing something productive rather than sitting around the house. “Giving bikes to kids in need makes me feel good that I can give my time and skills to help others.”

Next steps for Bailey? “I want to learn some new skills, like welding and fabrication, building and designing things. I need to learn how to run a small business, manage people and make network connections.”

Open learning
While Te Kura is NZ’s state provider of K-12 online distance education, it operates within a regulatory environment legislated by the government. Its enrolment policies are developed by the NZ Ministry of Education. As such, Te Kura is not a school of choice for students who are of compulsory school age. There are 56 enrolment categories (gateways) regulating which students may enrol with Te Kura. Examples of these gateways are students excluded or alienated from school, students who live in remote locations, and students with health or psychosocial conditions. These gateways limit rather than open up who may enrol, and they reinforce the official view that regular face-to-face educational provision is much preferable to ODL.

Online learning/blended learning
Most of Te Kura’s courses are delivered online, which requires making effective use of modern technology to support teaching and learning. This has required Te Kura to invest heavily in sophisticated and innovative online learning platforms. Learning online allows students to interact with each other and their teacher in a password-protected online classroom, collaborate with other students, access and participate in online learning activities, record their learning in digital formats, as well as learn digital literacy skills in a safe and supportive environment.

Students use a mix of online and offline activities whereby they explore their world rather than just sitting in front of a screen. For example, students will learn some theory about horticulture and then apply their learning in a real-life situation in a nursery. Many courses require that students carry out research projects in the community. Others attend vocational courses at industry training organisations or polytechnics. Most learning programmes incorporate practical applied learning in the course design.

Brightspace, by D2L,⁴⁷ is the Te Kura online learning environment used by Te Kura. It is where students access their work, participate in discussions, do quizzes to test their learning, and communicate with their teachers. Students access

⁴⁷ https://en.wikipedia.org/wiki/D2L
their learning resources wherever and whenever needed. Learning resources may include other online education providers. The online technology enables students to work at their own pace and get feedback quickly from their teacher.

My Korowai is a specially designed tool in the online environment (see Figure 25). It is a student’s “home base” within the learning environment, seen as the springboard for each student’s learning programme so that Te Kura can understand who each student is, what they are interested in, what their dreams are and how this information can then be built on. It is the way dynamic learning plans are developed with each learner and the place where they reflect on their learning. This is the integration point for Te Kura Big Picture, where everything comes together.

All of this has been developed with end users — i.e., students — so there is strong alignment to social media apps. The programme will continue to evolve in ways that reflect Big Picture principles.

**Figure 25: The learner-centred online platform**

While most student learning is delivered online at a distance, Te Kura’s experience has established that students benefit from a blended approach of online and face-to-face learning; this supports findings from a US Department of Education meta-analysis of ODL (Means et al., 2010). To facilitate this approach, Te Kura moved from completely operating out of Wellington and opened offices in three other major cities in 2009. Each regional office has outposts in smaller communities. In addition to these permanent locations, Te Kura leases 130–140 sites throughout NZ, where students and their families come together on a voluntary basis every week or fortnight to meet with their learning advisors and other students. These meetings are a combination of pastoral support, extracurricular activities, project work, tutorials, and preparation for internships. An evaluation conducted by the New Zealand Education Review Office confirmed that students who participated in Big Picture with ODL learning content and had regular face-to-face interaction
with learning advisors and other students were significantly more engaged in their learning and achieved better results (Education Review Office, 2017).

**Offshore delivery**

Government regulations allow Te Kura to deliver education offshore to New Zealanders who meet certain enrolment criteria, and those living in the three Pacific territories of New Zealand: Tokelau, Niue and Cook Islands, also known as New Zealand Realm Countries. An important part of Te Kura’s educational provision is to these countries. Delivery to these jurisdictions is hampered by limited digital infrastructure and accessibility to online learning professional development for educators. Te Kura is not able to assist with the digital infrastructure issues, but they have begun providing online training programmes for teachers and establishing a support desk specifically for the Realm Countries.

The focus for the Realm Countries since 2018 has been to strengthen and build Te Kura’s relationship and partnership with those countries. Te Kura has positive relationships with schools and the Ministry of Education in Cook Islands and Niue; their students can enrol with Te Kura, giving them access to a broader curriculum than their governments would otherwise be able to offer. Despite the barriers of slow Internet and inexperience in digital delivery, the confidence and expertise of both teachers and students are growing.

The NZ Education Act stipulates the NCEA can only be awarded outside New Zealand to New Zealand citizens. With the passing of the Education and Training Bill, it will be illegal to award the qualification to non-New Zealand citizens. The reasons for this appear to be that because NCEA is a standards-based qualification, and a large part of the qualification is internally assessed by teachers, there are concerns about the authenticity of assessment tasks submitted. This legislation will further limit Te Kura’s reach into the international market.

**Systems capability**

In Chapter 7, which explored technology-enabled learning, it was observed that there is a growing trend towards the use of technology in general, and online learning in particular, in the schooling sub-system. In a similar vein, Te Kura’s transition from paper-based to online delivery of teaching is now largely complete for all levels of learning. This has been a major factor enabling Te Kura to become a Big Picture school, as it has made it easier for learning advisors to work with students to personalise their learning programmes.

Another important enabler of Big Picture learning is the development of the Learning Objects Repository, where learning content is stored in a way that makes it easy for teachers and students to search for learning resources. This enables them to easily develop project-based cross-curricular learning programmes for students, based on individual passions and interests.

However, issues such as digital capability, digital literacy and technological connectivity must be continually tackled if Te Kura students are to capture all the benefits of an online schooling system. Technology requires ongoing investments in equipment, upgrades, professional development, training — all of which come at a cost. Although considerable savings have been made by no longer providing paper resources and incurring postage costs, technology continues to be a major expense and covers a range of sub-systems, which are illustrated in Figure 26. As
the diagram shows, there is need to integrate both internal and external digital systems and the relationships between them — for example, the internal report database enables external reporting to the Ministry of Education and the New Zealand Qualifications Authority, among others. In areas such as early childhood education, postal delivery is still necessary for some of the resources.

Figure 26: Diagram of Te Kura’s high-level IT systems design

As observed in Chapters 8 and 9, development, maintenance and improvement of the underpinning IT systems have become key issues for both finance and policy. However, the move into the online space has enabled a more personalised learning experience.

A diverse student population

Te Kura’s large student base, with its wide range of circumstances and needs, compels and encourages the delivery of a differentiated service where “one size fits one.” It involves making decisions about how to give effect to the national curriculum in ways that best address the needs, interests and circumstances of our students.

Many of these students are differently abled and have been referred to Te Kura by the Ministry of Education. These students all have a detailed individual learning plan developed in collaboration with their families and the ministry. In some instances, significant additional funding is attached to the student, which can be used to purchase appropriate assistive technologies and other learning support equipment as well as to employ teacher aids who support the students in their homes.

Māori students have been identified by the Ministry of Education as a priority and make up a significant proportion of Te Kura’s roll. To be successful as a school, Te Kura must be a place where Māori students feel comfortable, valued and able to achieve their potential. That means the curricula and teaching practices need to reflect appropriate Maori cultural contexts and be relevant to their future needs,
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giving them the foundation to contribute locally and globally. An important contribution to this is Te Kura's commitment to becoming a Maori/English bilingual organisation.

Pacific students are also prioritised. In recognising New Zealand's position as a South Pacific nation, Te Kura appreciates Aotearoa/New Zealand’s need to support Pacific students so they receive the education that will help them meet future challenges. Te Kura has a responsibility to ensure Pacific students, their families and their communities understand how to help them achieve the best possible educational outcomes. With a presence throughout the country, Te Kura works with regional and national-level Pacific groups to understand and respond to the needs of students and the needs of their communities. A recent initiative has been the implementation of Samoan language courses. Te Kura is also building its internal capability and understanding of protocols and cultures in Pacific communities to better engage with its Pacific students.

Another group of priority students are young adults. One in eight New Zealanders under the age of 25 are not in employment, education or training. As discussed in Chapter 1, this is a familiar situation in many countries where growing numbers of young people above the normal school-going age have not completed schooling or have done so but not well enough to progress further in their education or training. These circumstances raise real concerns for a cohort of young people who may feel they are alienated from society and have few means to improve their situation.

Te Kura has provided significant opportunities to improve outcomes for this cohort. Any young New Zealander between 16 and 19 years of age and not in employment, education or training can choose to enrol for free, providing Te Kura with the opportunity to have a positive impact on a large number of students. In 2019, Te Kura enrolled almost 6,000 young adult students across the full gamut of Te Kura offerings.

Because Te Kura's student population is increasingly diverse, learners come with multifarious educational needs. Many children and young people will receive additional learning support at some point as they move through their education pathway. Some children with long-term learning or behavioural difficulties, or physical or intellectual disabilities, may need ongoing scaffolding throughout their education to make progress. Others only require short-term help.

The need for a strong support system is critical given that almost 60% of Te Kura's full-time students are considered to be “at risk,” and that 3,000 children and young people are referred each year by the Ministry of Education because they have become disengaged, excluded or alienated from face-to-face schooling. These include students with psychological or psycho-social conditions, including depression, anxiety or a refusal to attend school, students with significant learning support needs, young parents, and students who have been referred by the Children's Ministry Oranga Tamariki or Youth Justice. Accommodating this diversity is complex and has significant resourcing considerations. Many of these students come to Te Kura with tagged additional resources. For the majority of students, a differentiated service model is informally applied, where students with high needs and low levels of family support are provided with a greater level of teacher time.

Te Kura continues to work alongside the governments and education leaders in New Zealand’s Realm nations through the facilitation of the Ministry of Foreign Affairs and Trade.

**Response to COVID-19**

While in lockdown, all schools were expected to provide online learning to their students. COVID-19 has highlighted how unprepared NZ schools are for delivering distance and online learning, and the need to give schools more support both technologically and pedagogically to deliver digitally and at a distance.

As an interim measure, Te Kura made available to the Ministry of Education its paper-based resources, which were provided to schools to download or to request hard copies if needed. While that was happening, a separate version of Te Kura’s learning management system (LMS), Brightspace, was constructed, all its courses/resources were transferred over, and they are now available to all secondary schools in NZ. This included over 100 senior secondary school complete year-long programmes. Te Kura has just completed transferring all its middle school programmes over and has almost completed the early childhood and primary programmes. For Te Kura teachers, delivering to their students from home has not been any different from business as usual except that face-to-face meetings have not been permitted.

Learners who successfully complete schooling or schooling-equivalent programmes through open and online learning will find new employment and educational opportunities open up to them. In addition to obtaining a recognised qualification or credential, they will have developed the independent study skills and dispositions that make it more likely they will choose open and online learning for any further technical or vocational education and training or higher education they may pursue in the course of their lifelong learning. The systems model introduced in the introduction to this publication should probably therefore be extended as illustrated in Figure 27. In the discussion that follows, we explore some of the ways this may be done.

![Figure 27: A resilient education system](image)

**Figure 27: A resilient education system**
The Open Polytechnic of New Zealand

The specialist national provider of open, distance and flexible learning (ODFL) at the post-school level is the Open Polytechnic of New Zealand (OPNZ), which operates in the vocational education and training sector. The organisation is currently engaged in a major and ongoing transformation programme as it seeks to redefine its teaching and learning and the learner experience. Given the ambitious nature and scale of the transformation in terms of ODFL organisation and practice, it is instructive to include a short overview here.

OPNZ is a government-owned provider that enrolls 30,000 learners per year and serves a primary constituency of part-time adult learners in the workforce, studying to upskill and reskill. It currently delivers over 100 programmes that lead to accredited and approved qualifications listed in the National Qualifications Framework (NQF). These range across Levels 1–7 on the NQF and from foundation studies to certificates, diplomas and degrees. While the organisation fulfils the traditional distance learning role of enabling access for people in rural and provincial areas who would not otherwise be able to study, the majority of its learners live in the four main urban centres and have a range of tertiary study options available. In other words, they are adult learners who actively seek flexible distance study and the “anywhere, anytime” benefits offered by OPNZ’s ODFL delivery model.

At its core, OPNZ’s transformation programme aims to make the best use of emerging digital technologies both to service the changing needs of its distinctive learner constituency and to increase the organisation’s flexibility in responding to changing external factors, whether of demand, funding, specific government priorities or industry need.

The transformation programme began in 2014, when OPNZ, which had been an early adopter and promoter of Moodle in New Zealand, resolved to invest in building its own digital learning platform; this became key to the polytechnic’s future strategy. The platform — iQualify — was specifically designed to support learner-centric online learning, both as a full distance learning experience and as the online component of blended delivery for partner organisations (the platform is also being marketed as a commercial product).

The iQualify development was the foundation for repositioning OPNZ as a fully digital ODFL organisation. Fairly quickly after the initial deployment, the decision was made to accelerate digital conversion of OPNZ’s entire, mainly print-based portfolio of content and programmes. Embarking on such a process is regularly cited as one of the major strategic and financial challenges facing established single-mode ODFL organisations. In OPNZ’s case, the resource and financial pressures were intense, but the conversion process is now complete.

Since 2014, OPNZ has continued to invest in the development of both the platform technology and the digital learning resources that are specifically designed and authored for platform publication. In this period, the iQualify platform has also attracted a significant number of partner organisations that use the platform for learning, training and professional development purposes in their own organisations.

OPNZ is now engaged in the next phase of its transformation programme, the objectives of which include further increase in organisational flexibility and
efficiency, and the enabling of greater learner agency and control of learning by moving to a fully flexible enrolment and assessment-on-demand model.

The programme has very intentionally brought about change to OPNZ’s organisational structure that ensures individual staff roles, their relatedness to one another, and the activities assigned to them are aligned with the ODFL educational delivery model that the organisation has designed.

A key underpinning element to achieve the desired changes involves further unbundling and enhancing the component parts of OPNZ’s value chain. The ODFL model is already based on disaggregated expert functions working together to design, develop and deliver effective learning at scale. The transformation programme aims to embed this logic more deeply in the organisation’s systems, processes, structure and roles.

A significant example is the academic staff role, which is now focused specifically on providing subject matter expertise, teaching and research, while other responsibilities that were previously wholly or partly included in the role are now fully unbundled and delivered by other expert functions. These include assessment, content creation and moderation, course administration and reporting, learning support and mentoring, and industry stakeholder engagement.

As part of this overall approach, a new specialist Assessment Centre has been established to progressively implement the changes required to enable flexible, scalable on-demand assessment. These include assessment design, managing and marking summative assessment activities, quality assurance and moderation, and operating systems for recognising prior learning.

Using data and analytics to improve learner success is another important dimension of OPNZ’s digitisation under the transformation programme. Learner analytics are based on flows of data from multiple systems that are synthesised and analysed to present useful perspectives on how the learner is engaging and progressing with their chosen learning activities. This, in turn, enables the early identification of learners who might need additional support and prompts a range of interventions.

**OPNZ and open schooling**

In a private communication, Standring (2020) observes the following:

> Along with nationwide delivery, Open Polytechnic’s approach to open learning and access includes maintaining a programme portfolio designed to ensure entry points for all learners, irrespective of prior educational background. Fee-free work and life skills programmes are offered at foundation and certificate level, and OPNZ’s learner base includes significant numbers of people who are unemployed and/or have no high school qualifications. The Polytechnic also delivers courses in prisons.

Open Polytechnic’s recent work in the Pacific includes hosting with the Commonwealth of Learning the 2017 Pacific Regional Consultation for OER and in the same year conducting a consultancy project with the support of the Suva based EUPaCTVET team to upskill workplace trainers and assessors in Niue. Pacific learners
also enrol in Open Polytechnic programmes from their home countries. OPNZ’s longstanding relationship with COL has previously included a partnership to deliver eLearning training for teachers and educators throughout the Commonwealth. This year OPNZ joined the International Partnership of Distance and Online Learning for COVID-19 launched by COL, initially contributing free courses in workplace digital skills, infection control and online teaching. In New Zealand during the pandemic OPNZ also made its iQualify online learning platform available free-of-charge to education and training organisations converting to online teaching during the lockdown period.

As noted at the start of this chapter, while open education is well established in New Zealand and is increasingly offered online, other island nations in the Pacific face various challenges, as discussed below.

**Open, Flexible and Technology-Enabled Learning in the South Pacific**

The South West Pacific region comprises more than a dozen small island nations that range from coral atolls (e.g., Niue, Kiribati and Nauru) to larger volcanic islands (e.g., Fiji and Solomon Islands). These island nations have been colonised by one or more imperial regimes, which brought along with them their education systems, largely addressing the primary and secondary school sectors. Opportunities for higher education in the region were non-existent until late in the 20th century (Latchem, 2018).

**The University of the South Pacific**

Although not working directly with out-of-school children and youths, the University of the South Pacific (USP) supports research in this area and has expertise and infrastructure that can be tapped into. The establishment of USP in the late 1960s sought to address the deficit in access to higher education. Set up with the support of the governments of the United Kingdom, Australia and New Zealand, this university was like none other in the world at the time. Foremost, it was and still is a regional university owned by and serving 12 island nations of the southwest Pacific region: Cook Islands, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu. USP has campuses in all member countries. The main campus, Laucala, is located in Fiji, where all but two of the schools are based; the School of Agriculture and Food Technology is situated at the Alafua Campus in Samoa, and the School of Law is at the Emalus Campus in Vanuatu. The University of the South Pacific’s region covers 33 million square kilometres of ocean, an area more than three times the size of Europe, while the total land mass in the region is about the size of Denmark. Population masses in the region vary in size from around 2,000 in Tokelau to more than 800,000 people in Fiji (Chandra, 2018).

For island nations this widely spread and sparsely populated, a conventional campus-based educational institution was going to be inadequate for its educational needs. The Morris Report, which recommended the establishment of USP, saw open and flexible learning as not only an essential function of
the university but also critical to its future as a regional university. It noted that "the University should have an extra-mural Department to enable it to carry university studies to towns and villages throughout the region, and to promote understanding of and affection for the University in the people of distance areas" (Morris et al., 1966, p. 5).

These were bold aspirations, for there was little expertise and experience around at that time in how these open learning and teaching arrangements were going to be operationalised. Right from the start, the challenge was gigantic. The new university would have to be a respectable institution of higher learning, like many others around the world. Yet it would need to be different to serve not just one country and one community but several, with no substantial expertise or experience in formal tertiary education, let alone open education (Latchem, 2018).

While a select few of the region’s population were able to access educational opportunities provided by USP on its main campuses, there would be a very large number of potential students with unmet demands for higher education in all of the region’s island nations. Taking university learning to where these students were, in their communities and their homes, had to become a priority. Hence, soon after its establishment, attention was directed at teaching off campus using open and flexible learning methods. An extramural teaching department was set up in the School of Education, because the first programmes on offer in this mode were in teacher education. In subsequent years, as other programmes began to be offered in this mode, a department of Extension Services (precursor to the modern-day Centre for Flexible Learning) was established to administer the university’s flexible learning operations (Chandra, 2018).

The use of the term “extension” was intentional suggesting an effort by the university to “extend” credit-bearing learning opportunities beyond physical campuses and into the region that it served. Print technology and the postal service formed the backbone of this learning and teaching transaction. As ICT, including electronic mail, began to supersede the use of print and postal services, the concept of written correspondence via the postal service was no longer an adequate descriptor of this educational transaction. Distance education emerged as a term that better captured the nature of this learning and teaching transaction away from the physical campuses. However, that term also had issues as an accurate descriptor of this activity, as the concept of distance implied a physical separation, when that was not always the case. Therefore, as more options for engaging in a flexible learning experience became available to learners, and as students chose to take advantage of the opportunities that these choices afforded, the nature of the educational transaction changed as well. Depending on its focus, this form of learning and teaching transaction has been labelled variously as online learning, eLearning, blended learning, and flexible and distributed learning (Naidu, 2016a).

The regional nature of the University of the South Pacific required it to think about the learning and teaching transaction differently from that of a conventional campus-based educational setting. This involved rethinking not just the delivery of lectures and subject matter content in packaged forms, but also the remote student learning experience with and without the use of technology. Fortunately, the growing accessibility of ICT in the region offers USP enormous

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opportunities to distinguish itself from other higher education institutions there as well as those abroad. To address some of these opportunities, the university has developed and adopted policies designed to reform its learning and teaching practices (see Naidu & Roberts, 2018). Key attributes of this initiative are: (i) open access to learning opportunities without prerequisites and/or financial constraints; (ii) the adoption of open and flexible learning strategies that enable freedom from the constraints of the time, pace and place of study; and (iii) engagement with open scholarship, which is the open and free use of educational resources (Naidu, 2016b).

Figure 28: USPConnect (USP’s integrated eLearning architecture)
USPConnect relies on a strong IT infrastructure: a robust submarine fibre-optic cable network and earth stations on every campus of the university (see Figure 29). USP’s satellite network incorporates a hybrid C/Ku Band system utilising 20 MHz of satellite capacity. It supports two major backbone infrastructure systems. One is USPNet, a wide area network incorporating hybrid satellite and submarine fibre-optic technology that delivers Internet-based administrative and educational service to staff and students in the region, and the other is AARNet (Australian Academic Research Network), which offers USP access to a global education and research network, and a much wider range of resources.

Currently, USPConnect services around 700 courses each semester (approximately 30,000 students and 1,500 staff). It supports all modes of study, including face-to-face, blended, online and print modes, across the 12 member countries of the region as well as beyond. All USP courses have an online presence (on Moodle), and in the context of such a technology-rich learning and teaching environment, learning analytics is of increasing interest for how it can help decision making around learning and teaching. In addition to this infrastructure, the university supports a wide range of multimedia technologies, including digital photography, graphic design, video and screen casting, video captioning and subtitling, voiceovers, virtual and augmented reality, and educational gamification (see Naidu, 2017).

This kind of capacity and infrastructure supports a wide range of open learning and teaching activities. These include credit-based courses and programmes, as well as a wide variety of skills-based courses via Pacific Technical and Further Education, the Pacific Centre for Flexible and Open Learning for Development, and USP Global.

Figure 29: USPNet: satellite communication (left); Australian Academic Research Network (right)
Pacific Technical and Further Education (PTAFE)

PTAFE\(^49\) is a self-funding operation of the University of the South Pacific with the mandate to offer pre-university preparatory and skills-based courses and programmes throughout the southwest Pacific region. A key goal of this initiative is to provide students with entry-level educational opportunities and pathways for higher studies or employment. PTAFE operates under four colleges — Arts and Humanities, Business and Commerce, Tourism and Hospitality, and Science, Technology and Environment — as well as a Workforce Development Training Unit. The Fiji Higher Education Commission, under the Fiji Qualifications Framework, accredits programmes offered by PTAFE.

Pacific Centre for Flexible and Open Learning for Development (PACFOLD)

PACFOLD\(^50\) is a joint initiative of the University of the South Pacific and the Commonwealth of Learning (COL). Its goal is to promote the adoption and application of ODL methods and technologies to the challenges that confront the Pacific Island nations and their people. One of these challenges, as identified in the United Nations 2030 Agenda for Sustainable Development, is to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.”\(^51\)

The achievement of this objective requires the adoption of multiple strategies, especially non-traditional approaches such as ODL methods and technologies. PACFOLD activities seek to strengthen the use of ODL in formal, non-formal and informal learning, specifically in skills development, gender equity, education and agriculture. Typically, these programmes include: (i) the design, development and implementation of human resources capacity building in technology-enhanced learning; (ii) professional development of youth workers in the region; and (iii) the design and implementation of MOOCs on issues of popular interest, such as climate change, literacy, numeracy and public health.

USP Global

USP Global\(^52\) is a USP initiative through which programmes such as these (especially in subject areas where USP is particularly strong) are accessible from beyond the region. It provides alternative learning opportunities and pathways to a global audience, including first-time learners and lifelong learners, for just-in-time learning, learning on demand and micro-credentialing from a reputable and digitally enhanced institution with a strong record of accomplishment in educational provision for transformative change. Current USP Global initiatives include skills development via ODL in the Pacific region in public health, aviation law, climate change, functional numeracy, and ICT.

USP’s response to the COVID-19 pandemic

As a result of the COVID-19 crisis, USP had to shut down its learning and teaching activities. But this shutdown, which was confined to its face-to-face teaching operations, was short-lived. From Semester 2 of 2020, all USP programmes have been made available online. This has not been uncharted territory for USP, as it has a strong pedigree and a long, successful track record in open, flexible and

\(^{49}\) https://www.usp.ac.fj/index.php?id=20065
\(^{50}\) http://pacfoldlearn.org/about/welcome/
\(^{52}\) https://learn.uspglobal.usp.ac.fj/
technology-enhanced learning that has been the envy of educational institutions worldwide. Hence, moving to online learning and teaching did not have a significant impact on the university's operations. Online learning is a form of flexible learning that is central to the ethos and character of USP, and a trajectory on which it has been since its establishment 50 years ago. The university has taken in stride a ramping up of its online learning and teaching activities.

As can be seen from the discussion so far, despite the challenges inherent in having diverse populations spread over many small islands in the island states of the Pacific region, there are examples of practice at schooling, post-schooling/TVET and higher education levels that provide useful lessons of experience. In the final three short case studies in this chapter, we will explore three further recent examples of open education at the schooling level.

Flexible open and distance education in Papua New Guinea

Flexible open and distance education (FODE) in Papua New Guinea provides opportunities for children and youths who have been unable to access schooling, or who have dropped out of schooling, to complete their studies using an alternative open and distance learning model. FODE's motto — “We are your school, anywhere, anytime” — resonates with the earlier discussion not only in this chapter but also in the book as a whole. FODE had previously adopted a print-based and contact-supported model, with face-to-face support offered in 22 support centres distributed around the country. However, in recent years, the high costs of printing and distributing printed materials, as well as access to sufficient classrooms for face-to-face contact, became major challenges. FODE therefore explored the provision of subsidised tablet PCs so that students would be able to access all content and engage in some online discussions in a more distributed and flexible way. This has proven quite popular with students, but sustaining the provision of affordable devices and Internet access remains a challenge for scaling. Nonetheless, the combination of digital resources, tablets and limited, physically distanced contact at centres ensure a nimble response to the challenges of education provision during the COVID-19 pandemic (KTF, 2020; The National, 2018).

Open schooling in Vanuatu

Schooling is not compulsory in Vanuatu, but enrolment rates are high. However, the gap between the gross enrolment rate and the net enrolment rate in early childhood care and education and in primary education, and the number of overage students in both levels, is still significant. The percentage of out-of-school children aged four to five years old dropped from 56% in 2016 to 16% in 2018. In primary schools, the percentage of out-of-school children dropped from 13% in 2016 to 8% in 2018. However, as more children pass through primary levels, the demand on secondary levels increases. While the total number of secondary schools grew from 93 in 2016 to 104 in 2018, of the 98,488 students enrolled in 2018, 19,983 were in Years 7+. The geographically dispersed population (Vanuatu comprises an archipelago of some 83 islands) means it is not financially viable to offer traditional brick-and-mortar, face-to-face schooling for all learners.
The ministry has therefore begun to explore open and innovative schooling (OIS) as a way to augment capacity. The OIS model is ultimately intended to address the global challenge of out-of-school youths and adolescents. It is also able to address access to additional resources for teaching and learning in conventional schooling. Four areas have been identified for the successful implementation of the OIS model in Vanuatu:

- well-trained teachers/trainers
- quality learning resources
- appropriate use of technology
- good management of open schools

The model is based on the argument that if the above four pillars are in place, then learning is more likely to improve students’ performance and attainment of the necessary skills for sustainable livelihoods.

The COL programme to support the OIS model in Vanuatu started in 2016. The model was positioned within the Ministry of Education and Training (MoET). Content development for junior secondary and selected TVET subjects started in 2016 and continued to 2019 (MoET, 2019). Over this period, 62 group members developed and shared 1,524 curriculum-based OER on the Notesmaster platform.53

In January and February 2020, school/centre managers and teachers received in-country training on the management of open schooling and in the use of COL’s Aptus device to share digital OER and support resource-based learning (Louw, 2020; Saide 2020a). The model was to involve children in after-hours/outside hours classes offered by government day schools or other education providers.

However, the model has yet to be piloted. As noted in a response to a survey conducted in July 2020, multiple factors have delayed the roll-out of the model from content development to piloting:

The multiple disasters affecting Vanuatu in 2020, like COVID 19, TC Harold, Volcanic ASHFALL in schools, and drought have impacted negatively on schooling. These disasters have resulted in the shelving of Open Schooling programmes and activities that had been initiated in 15 pilot schools. All schools throughout the country have closed their doors for over 3 months, making it difficult to implement open schooling activities. (Saide, 2020b, p. 6).

This case study highlights the challenge of the digital divide for the provision of open schooling. Currently, the relatively high costs associated with devices and Internet access prevent offering open schooling fully online in most contexts (although as noted in Chapter 7, provision by NIOS in the Indian context is a notable exception). However, a centre-based model still presents learners with the twin challenges of geographic access and travel costs (although potentially to a lesser extent, because attendance need not necessarily be so regular). When centres then close because of pandemics, natural disasters or for other reasons, they close for both day scholars and open scholars.

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Responding to school closures in Fiji

As noted in Chapters 1, 4, 5 and 7, key issues for the delivery of open schooling include the development and provision of open content, and training for teachers and managers in the facilitation of open content and the appropriate use of appropriate technology. When COL received a request from the Ministry of Education in Fiji to support teachers with continuity of learning during school campus closures due to COVID-19, these key elements came together in a short course, *Using Open Educational Resources for Online Learning: An Introduction*. The course was the product of a collaborative project between COL and the PACFOLD Learn initiative, hosted by the University of the South Pacific.

The course was designed to support teachers with guidelines and resources for coping with school campus closures by using available online resources and applications. The focus of the course was on practical ways to address the challenge in the short term by:

- scaffolding independent use of existing prescribed resources
- supplementing prescribed resources with OER
- using appropriate technology to support communication and learning
- providing appropriate assessment and feedback

COL’s MOOCs for Development website was used to host the course. Topics in the MOOC were introduced by short videos, followed by content-based activities embedded in downloadable PowerPoint presentations. Each activity was linked to a discussion forum. Participants were also directed to additional reading materials and/or web resources. Assessment included active participation in discussion forums, a quiz and an assignment comprising a lesson plan using OER, which could be taught without requiring teachers and learners to be in the same place at the same time. Support for discussion forums was provided by regional mentors over the four weeks of the course, which ran from Friday, 15 May to Sunday, 24 June 2020. While most of the 1,695 participants were teachers from Fiji, teachers from 25 other countries also participated.

Ogange (2020) reports that by the close of the course, a total of 75 participants had posted reflections on ways in which the OER4OL course had impacted their teaching during COVID-19. Using a Reflection Guide, they also shared stories about their plans for future classroom practice.

The course had given the participants an opportunity not only to learn during the COVID-19 crisis but also to draw motivation from the collaborative learning experience that the platform had made possible:

> The best decision that I took in 2020 was to take this course. It has been so fulfilling and enjoyable. I have started to use all the skills learnt in preparing my worksheets and using OER so wisely, ensuring that it is not copied but open for use. The research guides, quizzes and portfolios were best part of learning. In addition, knowing more from other students was so meaningful and motivating. There wasn’t a time when I felt like giving up. This course inspired me to become better teacher.

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54 https://www.mooc4dev.org/OnlineTeaching
Many of the participants felt that the course would improve their opportunity for promotion:

Yes. I hope to get my professional development hours in my FESA which is a plus point. I hope to get myself recognised for taking up this course in future for my promotion if I apply in future.

***

Yes, because now I have the skills to upload teaching materials online, using Zoom and Skype apps for online teaching and preparing online assessment.

***

The ministry had encouraged teachers to register and participate in this course thus our professional development hours will be updated. The MOOC seemed to have given the participants a sense of global visibility and pride in their teaching career. Some also felt better prepared for any future school closures that would come about due unforeseen disasters:

I want the world to know that I am a teacher who can competently teach online.

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Saying that the world is very small has come true. I have interacted and learnt something worthwhile with so many new and unfamiliar learners from different parts of the world.

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This closure of schools has taught me to prepare well for online teaching and I need to educate my learners accordingly. (participant quotations from COL, 2020)

**Conclusion**

As noted from the case studies provided here, and as could be anticipated from the discussion in Chapter 4, technology-enhanced/enabled learning is playing an important role in opening access to learning opportunities in the Pacific region, which is characterised by highly distributed populations. However, it is important also to observe that while many common technical issues need to be addressed, each solution must be carefully tailored to suit the diverse cultural (Flavell, 2020) and socio-economic (Heimuli, 2020) contexts of provision.

**Acknowledgement**

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Naidu, S. (2017). How flexible is flexible learning, who is to decide and what are its implications? Distance Education, 38. https://doi.org/10.1080/01587919.2017.1371831


Open schooling has traditionally addressed the needs of children and youths who have been unable to access, or who have dropped out of, the traditional school system. However, the closure of school campuses due to COVID-19 created an increased demand for self-study learning resources and guidelines for teachers in how to support learning continuity at a distance or online. Countries that already had established open schools (for example, the National Institute of Open Schooling, in India,55 the Namibian College of Open Learning,56 the British Columbia Open School,57 in Canada, and Te Kura,58 in New Zealand) were able to leverage these existing resources in support strategies for disrupted campus-based provision.

As noted by one of the reviewers of this publication, however, there is a very real danger that the focus on addressing the needs of campus-based learners will result in a lack of attention being paid to the learners who have never been able to access campus-based provision anyway, or who have not fared well in the campus-based system. It is the poorest and most marginalised learners who tend to be neglected. Therefore, it is important to reiterate at this point that the primary targets of open schooling are out-of-school children and youths, and to recognise that globally, these tend to be children and youths from the poorest sections of society, often located in rural areas, often girls and often also disabled. We cannot continue to fail these children, and open schooling can help.

The chapters in Part A of this book have outlined some of the models and approaches that could inform practice in open schooling, while the chapters in Part B provide insight into what is currently happening and therefore possible.

55 https://www.nios.ac.in/
56 https://www.namcol.edu.na/
57 https://www.openschool.bc.ca/
58 https://www.tekura.school.nz/
Until recently, outside of India, much open schooling (OS) took the form of after-hours classes at day schools. In these models, provision has been impacted by campus closures in the same way as for day school provision. However, open schools are now beginning to work towards the use of digital OER accessible on mobile devices. This serves to overcome the costs of buying and distributing printed materials. But high Internet costs as well as irregular Internet access and power supply have meant that a centre-based model is still needed to enable students to download content in many developing contexts. In these situations, the use of mobile forms of communications, such as individual and group calls, bulk SMS, and social media, using text or voice messages, which require less data usage, can help to reduce the need for face-to-face contact. There is also a resurgence of interest in the use of broadcast media such as radio and television to reach those without mobile connectivity.

As a result of COVID-19, more countries have seen the need to move further into the online space. There is a growing recognition of the need for government intervention to increase public access to free or affordable connectivity, coupled with the possibility of transferring the costs of textbook purchases to mobile devices already pre-loaded with curriculum-based digital content. This enables offline reading, complemented with semi-synchronous sessions online for discussions, assignments, etc. As indicated in the introduction, distance learning in the form of blended learning centred on school campuses, and open schooling, which may make use of school campuses after-hours and/or other centres or online platforms, are likely to be key features of new, more resilient integrated schooling systems.

We must revisit issues of policy, inclusive education practices, curriculum flexibility, the use of OER and OEP, M&E, TEL and supportive financing if new models are to be designed, developed and implemented effectively.

At any one time, significant curriculum-based content development is in process in multiple institutions and countries. Formerly, the content was usually print based, and subsequently shared online digitally (e.g., through a repository such as COL’s OAsis\(^59\)) as a print-behind-glass offering. Increasingly, however, the content involves multimedia components. This has raised course content file sizes from a few MBs to multiple GBs, the implications of which need to be borne in mind for institutions (e.g., server size and backups; size of SD cards for Aptus and other devices; and implications for curriculum updates) and for learners (in terms of Internet costs and speed, for example). It is better to break audio and video media down into shorter, more focused elements that make the best use of the medium chosen (for example, demonstrations of processes rather than talking-head lectures). However, when content is used effectively and integrated with appropriate assessment and feedback, as illustrated in Figure 30, it should be possible to facilitate greater engagement and deeper learning.

Figure 30 suggests that much content will continue to be text based but that we can also develop audio or video versions of text to assist learners with visual or aural impairment. Video can also be used very effectively to illustrate systems, processes and places that it would be difficult to experience or visit in person, for example, while audio podcasts may be used to support teachers and learners.

\(^{59}\) http://oasis.col.org/
unable to access online or broadcast content. As observed in Chapters 2 and 4, making an appropriate choice of what content to include and in what formats requires a conscious design process informed by the learning needs of target communities and the technology profiles of users and institutions. And as noted in Chapter 3, a growing body of quality OER content is available to use, reuse, revise, remix and/or redistribute. It is also important to realise that learners will be more motivated to engage with approved content if the content is related to the assessment strategy.

The question then arises: How is it best to use the content once it’s created?

At the very least, a model for using the content in an open schooling context must answer the following three key questions:

- How will learners access the content?
- What learning support will be provided to help turn access into success?
- How and when will learning be assessed?

Currently, there seem to be five main possible models of provision, each with its own emphasis but none of which excludes the others. All the models can use the same core learning resources, and all may be needed to address the diversity of learning needs and context. The following models may be considered:

1. the heutagogic/self-directed learner model
2. the centre-based provision model
3. the blended provision model
4. the fully online model
5. the MOOC model

These five models are discussed in the tables that follow.
Table 21: The heutagogic/self-directed learner model

| Access | The content is made openly available. The content can be accessed at any time from a website using the learners’ own Internet-connected device, or the learner can visit a centre and download a copy of the content onto a flash drive or onto their own device. Or they can pick up printed study material. Some institutions provide the content already saved onto a device such as a tablet or phablet, the cost of which is included in the course fees. |
| Support | No support is provided. It is up to the learners to manage their own studies and to apply for examination when they feel ready. |
| Assessment | Learners apply to write national exams once a year alongside day scholars. OR The exams are digitised and available on demand whenever the learner feels ready and able to visit an approved centre. |
| Discussion | This model assumes a high level of learner autonomy and hence high levels of independent time management and study skills, as well as high-level literacy and digital fluency skills and continuous access to a device (but not necessarily continuous access to the Internet, since digital content can be downloaded for use offline). However, it’s a relatively low-cost model for learners and extremely flexible, especially if paired with on-demand exams, which can be mediated online or at a centre. For example, a day scholar may spend 3 hours a week for 30 weeks learning a subject in a classroom and may also do 2 hours of homework and revision per week as well — a total of 150 learning hours. Freed of timetables and the need to attend a physical venue, an autonomous unemployed learner could easily complete those 150 hours of learning over a 3-week period. Assuming, though, that such a learner needs also to attend to other activities, a more reasonable estimate could be to complete one subject every 6 weeks. However, the ability to focus on only one subject at a time over a short period, rather than 8 to 10 subjects over an extended period, will probably result in higher success rates. It will usually be necessary to develop some form of “how-to-study” guide. This model might be appropriate for older learners in conflict zones or in nomadic communities where regular access to physical venues or online services might not be possible. The model can also augment the traditional school system. Day scholars might access the content for revision purposes, to supplement classroom learning in areas they find difficult, or to prevent falling behind due to absence from school because of illness, pregnancy or other reasons. The model can be usefully supported by radio and television broadcasting. |

Table 22: The centre-based model

| Access | The content is made openly available. However, learners who do not have access to the Internet can visit a centre to download the content to their own flash drive or device or to pick up a printed copy. Learners who do not have a device must access the content in a computer lab at the centre. |
| Support | Support may be limited only to providing technical access — in a dedicated centre, probably within an extended time (for example, 8am to 9pm). However, most learners will probably need some additional learning support to be successful. Centre-based support can be informal, e.g., a tutor is always on duty during open hours to provide general support, such as with accessing the content, time management, study skills, etc. Learning support that is subject specific probably needs to be scheduled to ensure appropriately qualified teachers are available. Most commonly, this takes the form of after-hours support from a day school, for example, from 5:30pm to 8:30pm. Given the limited time available, it follows that teachers cannot cover everything in the same way they do with day scholars. So to make best use of the time, it is probably necessary to plan the curriculum so that learners work through most of the content in their own time, and the contact time is then used to focus only on problem areas or practical components, such as science experiments. Essentially, this is then a flipped classroom approach. |
Assessment

Learners apply to write national exams once a year alongside day scholars.

OR

The exams are digitised and available on demand whenever the learner feels ready.

In addition, regular contact sessions create an opportunity for interim assessments and feedback after completion of significant portions of the curriculum. Typically, in distance education, two to three such assignments precede the final exam and count towards the final mark.

Discussion

This model assumes that most learners will require additional support for high levels of retention, success and progression.

The model is appropriate for areas with limited or no Internet access.

The model can also be used to augment the traditional classroom for learners requiring additional support in a particular subject, for learners who have progressed but need to repeat a subject, and for learners wanting to include a subject that is not offered in the day school curriculum.

Centre managers and teachers need to be trained in appropriate strategies to support non-traditional learners.

Marketing needs to make clear how the model differs from traditional schooling.

Table 23: The blended learning model

Access

The content is accessed through an LMS, so a separate repository is needed to make the core content available even to learners not registered for the programme. The content is organised into units or weeks of learning. Most of the content can be downloaded and worked through offline. Assessment tasks can be completed offline and then uploaded. Provision is made for semi-synchronous online discussions, but these are not necessarily compulsory.

Support

Feedback on assignments and student questions are mostly managed within the LMS and possibly with telephonic, email, WhatsApp, Skype or similar applications for additional support.

Contact support may or may not be offered and may or may not be compulsory.

Support may be limited only to providing technical access — in a dedicated centre, probably within an extended time (for example, 8am to 9pm).

However, to be successful, some learners may need learning support in addition to the online forums and assignment feedback built into the LMS-based course. This can take the form of a limited number of optional contact sessions in decentralised centres — for example, one Saturday a month in schools, colleges, community centres, church halls, etc. that have been rented for the day for this purpose.

Assessment

Learners apply to write national exams once a year alongside day scholars.

OR

The exams are digitised and available on demand whenever the learner feels ready.

In addition, two to three assignments submitted and assessed online will usually precede the final exam and count towards the final marks.

Discussion

This model assumes that most learners will require additional support for high levels of retention, success and progression.

The model is appropriate for areas with some Internet access but where the access is unreliable or expensive.

The model can also be used to augment the traditional classroom for learners requiring additional support in a particular subject, for learners who have progressed but need to repeat a subject, and for learners wanting to include a subject that is not offered in the day school curriculum.

Centre managers and teachers need to be trained in appropriate strategies to support non-traditional learners.

Both learners and teachers need training and support in using the LMS.

Marketing needs to make clear how the model differs from traditional schooling.
Table 24: The fully online model

| Access | The content is accessed through an LMS, so a separate repository is needed to make the core content available even to learners not registered for the programme. The content is typically organised into units or weeks of learning. Most of the content is integrated into online learning activities, so learners need to be constantly online while learning. Assessment tasks also need to be completed online and often involve group activities. Provision is made for semi-synchronous as well as synchronous online discussions, and participation is often, but not necessarily, compulsory. In many online programmes, participation in online forums earns credits towards the final assessment. There is usually a definite start and end date, but it is not necessarily tied to the school year. For example, for a school programme comprising 8 subjects, a continuous enrolment process could be used:

- Month 1 cohort 1 start with Subject 1, followed by subjects 2, 3, 4, 5, 6, 7, 8, but Month 2 cohort 2 start with Subject 2, followed by subjects 3, 4, 5, 6, 7, 8, 1. In this model, the institution needs to support only one subject every 3–6 weeks, as follows:

  - Cohort 1: 1,2,3,4,5,6,7,8
  - Cohort 2: 2,3,4,5,6,7,8,1
  - Cohort 3: 3,4,5,6,7,8,1,2
  - Cohort 3: 4,5,6,7,8,1,2,3 etc. |

| Support | Feedback on assignments and student questions are managed within the LMS but possibly with a range of additional social media and ICT outside of the LMS. For example, nonparticipation may result in automated reminders from within the system, which are then escalated to a call centre support desk:

  “We note that you have not accessed the course for the past two weeks. Are you having a problem we can help you with?”

  Face-to-face support is not offered, and most learners will never visit the offices/campus of the provider. |

| Assessment | Two to three assignments are submitted and assessed online prior to the final summative assessment, and they count towards the final marks. The final summative assessment may involve some form of proctored online examination but more likely perhaps instead will involve more authentic assessments, such as projects, portfolios, or video presentations, in which learners need to demonstrate what they can do with what they have learned. The latter is more likely in systems that have adopted outcomes- or competency-based curricula. |

| Discussion | The model is appropriate for areas with reliable and affordable Internet access. The model can also be used to augment the traditional classroom for learners requiring additional support in a particular subject, for learners who have progressed but need to repeat a subject, and for learners wanting to include a subject that is not offered in the day school curriculum.

  There is a need to train managers (e.g., of the platform and of supporting call centres) and to train teachers in appropriate strategies for supporting non-traditional learners.

  Both learners and teachers need training and support in using the LMS.

  Marketing needs to make clear how the model differs from traditional schooling. |
Table 25: The MOOC model

| Access | A complete subject and level can conceivably be packaged as a standalone MOOC. The original content is accessed through the MOOC, so a separate repository is needed to make the original core content available even to learners not registered for the MOOC. However, for a constructivist kind of MOOC, the content might grow organically — so, for example, an outcomes-based school-level history MOOC might well have different learners, or groups of learners, doing projects on different historical eras/events/projects as they work towards achieving the outcomes that each learner wishes to strive for. |
| Support | Although many mediated MOOCs have clear start and end dates, like most online learning programmes, a MOOC doesn’t need to be time-bound in any way. MOOCs that are mediated by a tutor of some kind usually have clear start and end dates, though, and support will then typically be a mix of tutor and peers engaging in asking questions and constructing responses. However, a MOOC is not necessarily mediated in this way. It is possible to offer a MOOC that assumes many users working independently through guided activities and using self-assessment rubrics or automated feedback (as in Khan Academy, for example). Such learners start and end whenever it suits them. Arguably, a more powerful use of a MOOC is one that assumes peer interaction between whichever learners happen to be active at any one time. A record of all current and past interactions may be maintained. |
| Assessment | For an xMOOC, which tends to be driven by video lectures and assumes a fixed body of content, like a more traditional online programme, assessment tasks will probably be optional and take the form of quizzes. For a cMOOC, with a more constructivist, activity-based approach and more open-ended content, assessment will likely be optional and/or can take the form of open-ended projects with self-assessment rubrics that help learners decide for themselves whether they have learned what they hoped to learn. |
| Discussion | The model is appropriate only for areas with reliable and affordable Internet access and assumes high levels of learner autonomy and digital fluency. The model can also be used to augment the traditional classroom — for example, for learners who feel overly constrained by the limited scope of the official school curriculum. There is a need to train managers (to maintain the platform on which the MOOC is based) and teachers (to design the MOOC and possibly to mediate it in some circumstances). COL is currently offering a MOOC in Functional Numeracy in partnership with the University of the South Pacific, while a recently offered MOOC in Physics reached 43,000 learners. Although some learners will be able to work through well-scaffolded learning resources independently, most will require support from peers and/or tutors in the process. The emerging open schooling model therefore begins to look like Figure 31. |
Of course, practice in open schooling needs to be guided by appropriate policy, and vice versa. The policy framework needs to be strongly focused on ensuring the quality and sustainability of the learning experience, and the support mechanisms need to make this possible for the diverse learners and teachers involved, as illustrated in Figure 32 and as discussed in Chapters 1, 5, 6, 8 and 9.

The case studies of practice in the developing contexts of Africa, Asia, the Caribbean and the Pacific indicate that diverse needs can be met and diverse challenges overcome by using OER content (Chapter 3), employing ODeL methods and supporting OEP (Chapter 7). However, we will need to use a variety of approaches, including broadcast media, print and an agile array of digital technologies, as well as a diverse array of support mechanisms. We’ll also need to
advocate for supportive policy frameworks and funding if we are to ensure that all learners can access and succeed in schooling. We will need to provide support at staff, institutional and national levels to make all this possible. In addition, where regions share similar challenges and curricula, it should be possible to find shared solutions. Learners also need to know that the schooling qualifications they obtain will be recognised and valued internationally in a global knowledge economy, where training and work often occur across national and regional boundaries. Thus, while learners and learner needs should be at the heart of decisions about open schooling provision, it is necessary to adopt institutional, regional and global perspectives when exploring ways to address these needs, as illustrated in Figure 33.

Figure 33: The lenses that must be brought to bear when addressing learning needs

If we are to address the learning needs of the 300 million children who struggle to access traditional schooling, we need to offer more affordable, flexible and open schooling opportunities. The resources and strategies we create to enable open schooling can then also be used to support learners who need to move to “remote” learning due to an enduring pandemic or other reasons, learners who are in traditional schooling but not learning, as well as youths and adults who dropped out of schooling and who need a second-chance opportunity. We foresee open schooling becoming an integral component of education systems in the future.
ADDRESSING THE LEARNING NEEDS OF OUT-OF-SCHOOL CHILDREN AND YOUTHS THROUGH THE EXPANSION OF OPEN SCHOOLING

At any one time, about 300 million children of school-going age are not in school. Experience indicates that when schooling is disrupted, whether by a pandemic, a natural disaster or other factors, not all children return to the classroom. In addition, most countries have growing numbers of young people who have not completed schooling, or have not done this well enough to progress, and who find themselves neither in employment nor in further education or training. Open schooling can create learning opportunities for those not in school, those who left school and those who are in school but not learning effectively.

There is no single model for open schooling provision that might offer a complementary or alternative curriculum, or both. However, all models can benefit from greater use of open educational resources, open, distance and flexible methods, and open educational practices. In this way, it is possible to sustainably address issues of access, quality and affordability.

Addressing the Learning Needs of Out-of-School Children and Youths through the Expansion of Open Schooling makes a case for open schooling to be an integral part of future-looking education systems that will be more resilient to changing contexts and needs.

The nine chapters in Part A of the book explore the need for and nature of open schooling, as well as cross-cutting issues related to curriculum, open educational resources, technology-enabled learning, monitoring and evaluation, finance, open and distance learning methods and open educational practices, as well as gender and policy. The first four chapters in Part B then explore open schooling practice in Africa, Asia, the Caribbean and the Pacific. In the final chapter, the editors summarise the key issues that policy and practice need to address.

This book offers guidelines and examples that will be of use to teachers, managers, policy makers and education leaders interested in ensuring that the education system meets the needs of all children and youths.