POERUP South Africa Case Study

Overview

The **Republic of South Africa**, commonly referred to as *South Africa*, is a country located at the southern tip of Africa. South Africa's coast borders both the Atlantic and Indian oceans. It is divided into nine provinces: Limpopo, North West, Gauteng, Mpumalanga, KwaZulu-Natal, Free State, Northern Cape, Western Cape and Eastern Cape. To the north of South Africa lie Namibia, Botswana, Zimbabwe, Mozambique and Swaziland, while the Kingdom of Lesotho is an independent enclave surrounded by South African territory. The main cities are Johannesburg, Pretoria (administrative capital), Cape Town (legislative capital), Durban, Bloemfontein (judicial capital), and Port Elizabeth.

South Africa is ranked as an upper-middle income economy by the World Bank. It is known for its diversity, and eleven official languages are recognized in its constitution. English is the most commonly spoken language in official and commercial public life. The country has a population of more than 51 million people and a variety of cultures, languages, and religious beliefs. South Africa is ethnically diverse, with the largest Caucasian, Indian, and racially mixed communities in Africa. According to Census 2011, the country's population stands at 51,770,560 people, with a composition as follows: black 79.2%; white 8.9%; coloured 8.9%; Asian (Indian) 2.5%. In the 2011 census, 0.5% South Africans classified themselves as 'other'. Females comprise just over half (51.3%) of the population, and males 48.7%.

Although approximately 80% of South Africa's population is black, this category is neither culturally nor linguistically homogeneous, as they speak a number of different African languages, nine of which have official status. English is commonly used in public and commercial life.

Education in South Africa

The Bill of Rights, contained in the Constitution, 1996 stipulates that everyone has the right to a basic education, including adult basic education and further education, which the State, through reasonable measures, must progressively make available and accessible.[1] South Africa has one of the highest rates of public investment in education in the world. Education expenditure constitutes 7% of Gross Domestic Product (GDP) and accounts for 20% of total government expenditure.[2]

South Africa's education system is managed by the national Department of Education (DoE) and nine provincial education departments.[3] In 2009, the Department of Education was split into the Department of Basic Education (DBE); and the Department of Higher Education and Training (DHET). The DBE is responsible for all schools, from Grade R to Grade 12, as well as adult literacy programmes. The DHET is responsible for FET Colleges and universities.[4] Responsibility for management of schools is shared between national and provincial government. The national Department of Education is responsible for formulating policy, setting norms and standards, and monitoring and evaluating all levels of education. It also funds HE institutions through subsidies and by providing financial support to students through the National Student Financial Aid Scheme (NSFAS).[5] The nine provincial education departments set their own priorities and programmes in line with national policy determined by the national Department of Education. Power is further devolved to grassroots level via elected school governing bodies, which have a significant say in the running of their schools.[6]

School life spans 13 years or grades, from grade R, a pre-primary foundation year through to grade 12 to the year of matriculation, also known as 'matric'.[7] The General Education and Training (GET) stage is from Grade R to Grade 9. There is an equivalent Adult Basic Education and Training (ABET) qualification. The Further Education and Training (FET) stage begins at Grade 10 and is capped at Grade 12. The Higher Education (HE) stage consists of a range of degrees, diplomas and certificates up to and including postdoctoral degrees. Under the South African Schools Act of 1996, education is compulsory for all South Africans from the age of seven (grade 1) to age 15, or the completion of grade 9.[8] The National Senior Certificate examination takes place at the end of grade 12 and is necessary for tertiary studies, although some universities do set their own additional academic requirements.[9]

Primary schools comprise Grade 1 to 7 and secondary schools Grade 8 to 12. There are public and private schools which vary according to character, size, quality of education, and financial advantages.[10] Public schools are funded by, and receive teaching and learning materials from, the government, although parents have to pay some costs, such as uniforms and school fees. Public schools are classified according to quintiles, which denote poverty levels. Quintile 1 schools are

[1] South African Government Information. Education. Available at http://www.info.gov.za/aboutsa/education.htm#Nationalandprovincialdepartments
[2] South Africa Info. South Africa – Fast facts. Available at www.southafrica.info/about/facts.htm#
[3] Armstrong, C., de Beer, J., Kawooya, D., Prabhala, A., and Schonwetter, T. (eds). (2010). Access to knowledge in Africa – The role of copyright. UCT Press. Available at http://www.aca2k.org/attachments/281_ACA2K-2010-Access%20to%20knowledge%20in%20Africa-s.pdf
[4] The Department of Basic Education. Available at http://www.education.gov.za/TheDBE/tabid/54/Default.aspx
[5] South African Government Information. Education. Available at http://www.info.gov.za/aboutsa/education.htm#Nationalandprovincialdepartments
[6] Cortoos, N. South Africa – From Researching Virtual Initiatives in Education. Available at http://virtualcampuses.eu/index.php/South_Africa
[7] South Africa Info. South Africa – Fast facts. Available at www.southafrica.info/about/facts.htm#
[8] South Africa Info. South Africa – Fast facts. Available at www.southafrica.info/about/facts.htm#
[9] Wikipedia. South Africa. Available at http://en.wikipedia.org/wiki/South_Africa
[10] Wikipedia. Education in South Africa. Available at http://en.wikipedia.org/wiki/Education_in_South_Africa

those serving the most disadvantaged communities, in terms of financial resources, and quintile 5 those serving the most privileged. Some quintile 5 schools are very well-resourced and can be at par with some private schools.[11] The government is in particular targeting education for the poorest, with two notable programmes. One is fee-free schools (quintiles 1 and 2 schools): institutions that receive all their required funding from the state and so do not have to charge school fees. These have been identified in the country's most poverty-stricken areas, and made up 40% of all schools in 2007. The other is the National Schools Nutrition Programme.[12] In state-funded public schools, the average ratio of students to teachers is 31.5 to one, while private schools generally have one teacher for every 17.5 students. Illiteracy rates currently stand at around 18% of adults over 15 years old (about 9-million adults are not functionally literate), teachers in township schools are poorly trained, and the matriculation pass rate remains low. [13]

Within the schooling system, South Africa has a rate of repetition which is higher than that for other developing countries. In 2009, 9% of enrolled learners were repeating the previous year's grade. Repetition is higher in the advanced grades as a result of learners who have proceeded through the system without mastering basic concepts. To tackle this, the DBE has introduced Annual National Assessments (ANA), which are standardized language and mathematics assessments for Grades 4 to 6 and literacy and numeracy assessments for Grades 1 to 3. These assessments are aimed at measuring learner progress, and can be used for remediation to resolve apparent areas of challenge for learners.[14]

South Africa has a vibrant higher education sector, with public universities divided into three types: traditional universities, which offer theoretically oriented university degrees; universities of technology, which offer vocationally oriented diplomas and degrees; and comprehensive universities, which offer both types of qualification.[15] Currently, the country has 23 state-funded tertiary institutions, comprising 11 universities, six universities of technology, and six comprehensive institutions. In 2012, there were also 88 registered and 27 provisionally registered private higher education institutions (HEIs). In 2010, 127,969 people, including 46,579 academic staff, were employed in public HEIs. The HEIs enrolled 892,936 students, including 726,882 undergraduate and 138,610 postgraduate students.[16] Both public and private universities and colleges register with the Department of Higher Education and Training and are accredited by the Council on Higher Education (CHE).[17]

[11] Education and Training Unit. Education policy: School fees. Available at http://www.etu.org.za/toolbox/docs/government/schoolfees.html
[12] Cortoos, N. South Africa – From Researching Virtual Initiatives in Education. Available at http://virtualcampuses.eu/index.php/South_Africa
[13] Wikipedia. South Africa. Available at http://en.wikipedia.org/wiki/South_Africa
[14] Department of Basic Education. (2011). Annual National Assessments: Notice from the Department of Basic Education to all parents of learners in grades 2 to 10 at public schools, 8 February 2011. Available at http://www.education.gov.za/LinkClick.aspx?fileticket=FqR5CgbK1qM%3d&tabid=424&mid=1340
[15] Wikipedia. South Africa. Available at http://en.wikipedia.org/wiki/South_Africa
[16] Council on Higher Education. Higher Education in South Africa. Available at http://www.che.ac.za/heinsa/
[17] Wikipedia. South Africa. Available at http://en.wikipedia.org/wiki/South_Africa

e-learning

South Africa generally has an enabling ICT policy environment, and there is a specific policy addressing ICT in Education, the e-Education White Paper, 2004. This policy advocates the benefits of ICT for education, and maps out a vision for achieving a digitally enabled education system. The goal is that every learner in the primary and secondary school sectors should be ICT capable by 2013. It stresses the benefits of ICT for teachers, learners, managers and school administrators, but perhaps the most significant benefit advocated in it is that it can enhance the quality of the teaching and learning process.[18] However, the e-Education White paper does not reference OER, although it does note that it will initiate the collection and evaluation of existing digital, multi-media material that will stimulate all South African learners to seek and manipulate information in collaborative and creative ways. It highlights that digital content is critical to e-Education because it can be easily and randomly accessed, adapted and manipulated, and is accessible from many locations.

Other government strategies and plans (including the Electronic Communications Act, 2005; the Universal Service and Access Policy and Strategy, White Paper on Science and Technology, 1996; and the Public Service IT Policy Framework, 2001) are indicative of the government's determination to establish South Africa as an information society. The strategies and plans suggest that schools and other educational institutions in South Africa are set to improve ICT access and usage, which is likely to positively influence access to learning material in the country. South Africa has a wealth of accumulated experience from its wide range of projects and programmes in ICT in Education, introduced by government, communities, the private sector, civil society, and donor and development agencies. Many models have been tested focusing on ICT access, digital content development, teacher training and professional development.

As a result, all South African tertiary educational institutions (and a growing number of schools) have some form of ICT access. In an effort to achieve universal access to laptop ownership among teachers in public schools, the Teacher Laptop Initiative (TLI), managed by the Education Labour Relations Council (ELRC),[19] was officially launched in May 2009 through a policy specifying the conditions for educator participation in this initiative. The TLI is open to all permanently employed teachers, and sets out minimum specifications for teacher laptops to suppliers, as well as the minimum purchase price for those supplied.The government provides teachers on this scheme with a monthly allowance of R130 (about US$20), for assistance with repayment for their laptops, based on the cost of R195.83 a month for repayments.[20]

The government has also rolled out initiatives to provide the relevant hardware to support e-learning. For example, in 2009, 2,449 schools had computer centres that were adequately equipped, and 3,161 schools had internet connectivity.[21] Through the Dinaledi Schools initiative, focused on fostering centres of excellence in the teaching of and the performance in mathematics and science, 500 Dinaledi schools have been equipped with ICT.[22]

At the provincial level, Gauteng Online (GoL) is one of the Gauteng Provincial Government's flagship ICT projects that not only provides computer literacy, but also supports the delivery of quality basic education, thereby creating a sustainable e-learning environment in public schools where learners

[18] Department of Education. (2003). Draft White Paper on e-Education – Transforming Learning and Teaching through ICT. Available at http://www.info.gov.za/view/DownloadFileAction?id=68777
[19] Teacher Laptop Initiative. Available at http://www.teacher-laptop.co.za/#
[20] Department of Education. (2009). *Teacher Laptop Initiative Policy*. Government Gazette No 32007, 8 May 2009.
[21] Department of Basic Education. (2009). National Education Infrastructure Management System Report, 2009. Available at http://www.education.gov.za/LinkClick.aspx?fileticket=p8%2F3b6jxko0%3D&tabid=358&mid=1263
[22] Sibiya, S. (2009). Dinaledi school project performance report for the 2008 national senior certificate Mathematics and physical science. Available at http://www.thutong.doe.gov.za/Default.aspx?alias=www.thutong.doe.gov.za/dinaledischools

can maximise their potential.[23] The programme involves establishing a computer laboratory with 25 work stations, Internet and e-mail access, to be used for curriculum delivery in all Gauteng schools. [24] In 2010, GoL had 1,665 schools with fully functional computer laboratories.[25]

The Western Cape Department of Education (WCED) ran an initiative known as the Khanya Project, which started in April 2001.[26] The aim was to address the shortage of educator capacity and the need to deliver curriculum to schools through the innovative use of ICT. [27] However, the website has been discontinued and has been redirected to the WCED: Curriculum Development website.

These projects have also seen training provided on ICT integration – for example, SchoolNet South Africa has trained over 20,000 teachers on Microsoft PiL courses.[28] By 2010, GoL had trained 20,260 teachers on how to use the GoL laboratory,[29] and Khanya had trained 27,943 teachers in the Western Cape province on ICT integration.[30] SchoolNet South Africa (SNSA) is a non-profit educational organization that coordinates reputable courses that have trained many teachers in South Africa, through programmes such as Educators' Development Network (EDN) and Microsoft Partners in Learning. SNSA also coordinates the Intel Teach to the Future programme, which has been used the University of Johannesburg as part of its Bachelor of Education Degree Programme, the University of Pretoria as part of its Postgraduate Certificate in Education (PGCE) and the University of Fort Hare which uses Intel Teach as part of its staff development. The University of KwaZulu-Natal also provides ICT teacher education through its Advanced Certificate in Education (ACE) programme in ICT integration.[31]

The Department of Basic Education has invested in the development of a national portal for schools, the Thutong portal, which supports teachers by providing content and professional development, as well as administration and management tools. The portal offers a wide range of free educational resources, resources on teacher development, curriculum, legislation, educational policy, administration, as well as links to external resources on the internet. In 2010, the Thutong Portal provided over 14,000 digital content resources, had 10,000 registered users, and averaged 80,000 hits a month. There are 84 learning spaces on the portal, including a dedicated space for Matric support.[32]

South Africa is also involved in the New Partnership for Africa's Development (NEPAD) eSchools Initiative, a multi-country, multi-stakeholder, continental initiative that aims to impart ICT skills to young Africans in primary and secondary schools and improve the provision of education in schools through ICT applications and the use of the Internet. [33]

[23] Gauteng Online Media Briefing Statement. Available at http://www.gautengonline.gov.za/GPG-ICT-Summit/Pages/GautengOnlineMediaBriefingStatement.aspx
[24] Isaacs, S. (2007). Survey of ICT and education in Africa. South Africa Country Report. Available at www.col.org/colweb/webdav/site/myjahiasite/shared/docs/**infodev**_survey_of_**ict**_and_**education**_in_**africa**.pdf
[25] Gauteng Provincial Government: Department of Education. (2010). Gauteng Department of Education Annual Report and Audited Financial Statements 2009/10. Johannesburg: GDE.
[26] The PNC on ISAD. Available at http://www.pnc.gov.za
[27] Isaacs, S. (2007). Survey of ICT and education in Africa. South Africa Country Report. Available at www.col.org/colweb/webdav/site/myjahiasite/shared/docs/**infodev**_survey_of_**ict**_and_**education**_in_**africa**.pdf.
[28] SchoolNet South Africa. (2010). Empowering teachers through ICT integration. Available at http://www.schoolnet.org.za
[29] Gauteng Provincial Government: Department of Education. (2010). Gauteng Department of Education Annual Report and Audited Financial Statements 2009/10. Johannesburg: GDE.
[30] SchoolNet South Africa. (2010). Empowering teachers through ICT integration. Available at http://www.schoolnet.org.za
[31] Isaacs, S. (2007). Survey of ICT and education in Africa. South Africa Country Report. Available at www.col.org/colweb/webdav/site/myjahiasite/shared/docs/**infodev**_survey_of_**ict**_and_**education**_in_**africa**.pdf.
[32] Mosuwe, E. Progress on the implementation of ICT in education in South Africa. Presentation at SITA GovTECH 2010. Durban International Convention Centre, 5-8 September 2010.
[33] Isaacs, S.(2007). Survey of ICT and education in Africa. South Africa Country Report. Available at www.col.org/colweb/webdav/site/myjahiasite/shared/docs/**infodev**_survey_of_**ict**_and_**education**_in_**africa**.pdf.

There are also several other e-learning projects. Examples include:

- Internet Biology Education Project – the University of the Western Cape's Botany Department, the Western Cape Schools Network and the Western Cape education department collaborate to improve the teaching and learning of biology with online assistance. The primary aim is to create a network for better teaching-and-learning in Biology. The site hosts mailing lists and newsgroups, and contains a wide range of learning and teaching materials.
- SABC Education provides information via various educational programmes. For example, Matrics Uploaded have produced six DVDs covering content that supports the grade 10 to 12 curricula.
- Learnthings Africa produces of interactive learning materials and training related to the effective usage of these materials in South Africa and several African countries.
- The Telkom Foundation has been involved in various projects, with recent projects including ICT Schools Connectivity, Computer Laboratory, and the Internet Connectivity project in the Western Cape.
- Various corporations have historically provided ICT hardware, software, training and tools in the education sector through their social investment offerings. This includes the provision of training and teaching and learning resources through initiatives such as Intel Teach and Microsoft Partners in Learning.
- Media Works specialises in providing National Qualifications Framework-aligned training for Adult Basic Education and Training (ABET) and learnerships. They provide both face-to-face classes and computer assisted learning through multimedia programmes with workbooks and facilitator sessions
- iSchoolAfrica is an Apple project, aimed at bringing the best available education technology and practices to schools in South Africa. The Youth Press team project which started with the World Cup 2010 in South Africa involves teams in more than 20 schools across South Africa using the project to create newsworthy video content for television. iSchoolAfrica provides participating schools with one mobile classroom containing 12 MacBooks with preloaded software, 12 video cameras and 1 projector, allowing learners to make movies, music and develop websites.[34]

Because of the high penetration of mobile technology in South Africa, especially among the youth, South Africa is piloting projects that make use of mobile technology for learning. Piloted projects have capitalized on the popularity of the social networking platform MXit, to motivate learners to direct the use of this platform to educational purposes. An example of a mobile mobile phone project supporting tutoring is the Dr Math project, launched in South Africa in early 2007 by the Meraka Institute of the Council for Scientific and Industrial Research (CSIR). It explored whether or not secondary school pupils would use their personal mobile phones and their own airtime to discuss their mathematics homework with a tutor available through MXit.[35]

In another project, the South African Department of Education partnered with Nokia and Nokia Siemens Network in 2008 to pilot a mobile mathematics project for Grade 10. This project made use of MXit to disseminate mathematics quizzes, exercises, and theory and content for Grade 10 learners. To participate in this project, learners needed a mobile phone that could access the internet, and they had to register on the social networking programme MXit. Teachers had to have access to a computer to use Moodle to track learner usage, monitor performance, and diagnose areas for remediation.[36]

[34] iSchoolAfrica. Available at http://www.ischoolafrica.com/iSchoolAfrica.com/About_iSchoolAfrica.html

[35] Butgereit, L. (2007). Math on MXit: The medium is the message. Available at http://resourcespace.csir.co.za/dspace/bitstream/10204/1785/1/Butgereit/2007.pdf

[36] Vanska, R., & Roberts, N. (2010). Count on cell phones: Mathematics education in South Africa via cell phones and the web. Available at http://ictupdate.cta.int/en/Feature-Articles/Count-on-cell-phones

South African universities are also making use of mobile technologies to support academic administration and community work. At the University of Cape Town (UCT), in a project run by CET, mobile phones are used to enable students to text questions that they would otherwise not ask in a face-to-face session. These questions serve as feedback on learning to the practitioner. This project is designed with a web and mobile interface, where practitioners post announcements on a virtual notice board and students use SMS to access these. Academics also use SMS broadcast to send notifications about online resources and lecture scheduling.[37]

Mobile technology has also been used to support university community work. University of Pretoria students in the Faculty of Engineering, Built Environment and Information Technology volunteer 40 hours for tutoring maths as an option to a compulsory course on volunteer services to the community. These students are available as 'Dr Maths' tutors, and assist learners in primary and high school with maths homework after school. Learners use an instant message system MXit, which is much more affordable than SMS, to send maths questions to the Dr Maths tutors and receive help with these questions also via instant messaging.[38]

[37] Centre for Educational Technology. Projects. Available at http://www.cet.uct.ac.za/projects
[38] Butgereit, L. (2007). Math on MXit: The medium is the message. Available at http://resourcespace.csir.co.za/dspace/bitstream/10204/1785/1/Butgereit/2007.pdf

Quality procedures

Responsibility for assuring the quality of OER used in teaching and learning environments often resides with institutions.[39] But this may not be sufficient to create a sustainable quality assurance mechanism, and thus national quality assurance agencies may also need to take consideration of OER issues. However, national quality assurance agencies differ in their approaches to accepting new ways of teaching-learning.

In South Africa, educational levels and qualifications are informed by the National Qualifications Framework (NQF). The NQF is developed and implemented by a statutory body called the South African Qualifications Authority (SAQA). All qualifications and unit standards are registered on the NQF, which are reviewed every three years to ensure that they remain relevant.[40]

For general and further education and training, Umalusi monitors quality according to the National Qualifications Framework Act No 67 of 2008 and the General and Further Education and Training Quality Assurance Act No 58 of 2001. The Council is responsible for developing and managing a sub-framework of qualifications for general and further education and training and for the attendant quality assurance.[41] Umalusi monitors and improves quality in three main ways:

- It monitors and moderates the achievements of students, primarily through external examinations. On this basis, it issues certificates to students.
- It evaluates whether providers of education and training have the capacity to deliver and assess qualifications and learning programmes, and are doing so to expected standards of quality. This is done through an accreditation system, whereby educational institutions must meet criteria stipulated by Umalusi. Umalusi does not evaluate state schools, but only evaluates private schools, as well as colleges and adult education institutions. Umalusi also accredits assessment bodies, which then set the external examinations that are used to evaluate students.
- It evaluates the quality of qualifications. This mainly means looking at the curricula which belong to different qualifications, as well as the rules for how many subjects must be passed and at what level in order to obtain a qualification.

Umalusi is not directly involved in setting examinations, but checks the quality of exams that assessment bodies are responsible for. It currently works with two main assessment bodies – the Department of Education and the Independent Examinations Board. Umalusi has mainly focused on the National Senior Certificate, which learners write at the end of Grade 12. It also monitors adult education at the end of general education and training, and the college system, and issues certificates for college qualifications.[42]

Responsibility for monitoring the quality of schools currently rests with the Department of Education. The Department of Education also plays a direct role in monitoring educational quality. As discussed above, the Department of Education also organizes systemic evaluations in literacy and

[39] Butcher, N. (2011). A Basic Guide to Open Educational Resources (OER), the Commonwealth of Learning.
[40] Pitt, J.H. Quality Assurance in Education and Training in the South African context – A paper prepared for a Skills Development seminar in Kampala, Uganda. Available at http://www.edutel.co.za/uganda/pdfs/JPitt.pdf
[41] Umalusi's role in education and training in South Africa. Available at http://www.umalusi.org.za/Inveloper.asp?iP=74&iVctg=81&iS={114404C5-52F3-4603-9C94-E32491E5F941}&iSL=:2469:;:2557:;:2554:;:2572:;:2573:;:2571:;:2574:;:2416:;:
[42] Allais, S.M. (2009). Quality Assurance in Education. Issues in Education Policy, Number 5. Centre for Education Policy Development. Available at http://www.cepd.org.za/files/pictures/Quality%20Assurance%20in%20Education%202008.pdf

numeracy at the lower levels of the school system, to establish how much children in primary schools are learning.[43]

At the higher education level, the South African Council on Higher Education (CHE) is an independent statutory body responsible for advising the Minister of Education on all matters related to higher education policy issues, and for quality assurance in higher education and training. Its statutory responsibility for the promotion and assurance of quality in higher education is carried out by one permanent sub-committee, the Higher Education Quality Committee (HEQC). The HEQC is responsible for evaluating and reporting on the effectiveness of the quality management systems of higher education institutions in relation to assessment, short courses, certification arrangements, and recognition of prior learning (RPL). The Higher Education Act of 1997 states that the functions of the HEQC are to promote quality in higher education audit the quality assurance mechanisms of higher education institutions accredit programmes of higher education.[44] The HEQC:

- Conducts audits of higher education institutions (public and private);
- Conducts national reviews within specific disciplines or qualification areas;
- Accredits learning programmes;
- Promotes quality, which involves sharing information and knowledge about quality assurance with people in higher education institutions, as well as preparing individuals and institutions to participate in the three processes described above.[45]

The newly formed Quality Council for Trades and Occupations (QCTO) is responsible for QA of occupational qualifications on the Trades and Occupations sub framework.[46] They appear to still be in the early stages of operation and it is not clear whether any of their work would include open licensing.

There are also organizations which operate under the Minister of Labour – the Sectoral Education and Training Authorities (SETAs). The SETAs conduct quality assurance in education programmes which are directly aimed at preparing people to work in specific industries or sectors of the economy. Examples are the Mining Qualifications Authority, the Wholesale and Retail SETA, the Media, Advertising, Publishing, Printing and Packaging SETA, and the Banking SETA. One of the current responsibilities of SETAs is to conduct quality assurance within their sectors. The main way in which they do this is through an accreditation model – that is, they accredit institutions which offer educational programmes within their sectors of the economy. This is done largely within a quality management framework, whereby institutions must prove to the SETA that they have good quality management systems. Sometimes the SETAs also look specifically at the programmes offered by the institutions; this is referred to as programme approval. Sometimes the SETAs evaluate a sample of assessments conducted by the institutions in order to check that assessments are all of the same standard.[47] However, there does not appear to be any commitment from SETAs towards open licensing.

Similarly, professional bodies, which are often created by statutes of law, monitor educational programmes within specific areas. These bodies will sometimes play a role in evaluating and

[43] Allais, S.M. (2009). Quality Assurance in Education. Issues in Education Policy, Number 5. Centre for Education Policy Development. Available at http://www.cepd.org.za/files/pictures/Quality%20Assurance%20in%20Education%202008.pdf
[44] Higher Education Act 101 of 1997 (http://www.che.ac.za/documents/d000004/)
[45] Allais, S.M. (2009). Quality Assurance in Education. Issues in Education Policy, Number 5. Centre for Education Policy Development. Available at http://www.cepd.org.za/files/pictures/Quality%20Assurance%20in%20Education%202008.pdf
[46] South African Qualifications Authority. QCTO FAQs. Available at http://www.saqa.org.za/show.asp?include=docs/qcto/faqs.html
[47] Allais, S.M. (2009). Quality Assurance in Education. Issues in Education Policy, Number 5. Centre for Education Policy Development. Available at http://www.cepd.org.za/files/pictures/Quality%20Assurance%20in%20Education%202008.pdf

licensing institutions which offer courses within their area of specialty. For example, the Engineering Council of South Africa checks up on the universities which offer engineering degrees, and only recognizes them if they reach certain standards. Sometimes, professional bodies also set their own examinations, which must be passed by people wanting to join the profession. For example, the Institute of Chartered Accountants sets an examination that must be passed by anyone who wants to practise as a chartered accountant.[48] As with other QA bodies, there does not appear to be specific commitment to OER considerations for professional bodies.

There are also organizations which offer quality assurance services. For example, the Independent Quality Assurance Agency (IQAA) provides quality assurance through evaluation of schools, and encourages internal self-evaluation in schools. It is based in Cape Town, South Africa and operates throughout Africa. In the distance education field, the National Association of Distance and Open Education Organizations of South Africa (NADEOSA) plays an important role in developing awareness of quality in the South African distance education community, and has coordinated the development of a framework for Quality Criteria for Distance Education (NADEOSA, 2005). The HEQC has endorsed the NADEOSA quality criteria, and NADEOSA has collaborated with the HEQC to provide institutional capacity development and a guide for good practice. Within South Africa, a variety of institutions have taken up the challenge of internal self-evaluation using these Quality Criteria.

Generally, higher education institutions also operate their own internal QA processes, following the external national QA guidelines (the Council on Higher Education/HEQC criteria). At present it is not clear whether any of the universities include OER considerations explicitly in their QA processes, although this is likely to change as OER becomes more widespread. It is also likely that quality assurance bodies would take considerations of OER as policies supportive of OER such as the Green Paper for Post School Education and Training and Draft Policy Framework for the Provision of Distance Education in South African Universities are implemented (these papers are discussed in more detail below).

[48] Allais, S.M. (2009). Quality Assurance in Education. Issues in Education Policy, Number 5. Centre for Education Policy Development. Available at http://www.cepd.org.za/files/pictures/Quality%20Assurance%20in%20Education%202008.pdf

Internet in South Africa

The Department of Communications' mandate is to create a favourable ICT environment, ensuring that South Africa has the capacity to advance its socio-economic development goals and support the renewal of Africa and the building of a better world. It recognizes that broadband is an essential digital resource for accessing basic services, products, commerce and job creation. Given the strategic importance of enabling infrastructure, the Department of Communications, together with the ICT industry have committed to delivering 100% broadband penetration and delivering a million jobs by 2020.[49]

African Internet usage has trebled to more than 12 million since 2000.[50] South Africa has the largest Internet community on the continent.[51] The 6.8 million South Africans using the Internet at the end of 2010 increased to 8.5 million by the end of 2011. The number was projected to increase to more than 10 million people by the end of 2012. Penetration is approaching 20%. The study showed that 7.9 million South Africans accessed the Internet via their cell phones. [52] In recent years, South Africa has also witnessed tremendous growth in the mobile phone industry. Mobile penetration is estimated at more than 10%, which is one of the highest rates in the world.[53] These developments have been driven by policies to expand the use of Internet. For example, the Telecommunications Amendment Act, 2001, has enabled the liberalization of the telecommunications sector, with increased competition, reducing the cost of communications and encouraging growth of the sector[54]

However, despite the increase in Internet connection and in broadband speeds, according to the Q2 2011 Akamai report which provides statistics on Internet speeds across the globe, South African is still regarded as lacking true high speed connections and broadband services. While South Africa's average connection speed continues on its upward trend, it is still well below the global average connection speed of 2.6Mbps.[55]

The West African Cable System (WACS), the fifth submarine cable system to link South Africa to the rest of the world, was formally launched in May 2012, promising further improved bandwidth connectivity down the west coast of Africa. WACS was initiated by the South African Government as a collaborative effort of African governments and leading telecommunications operators. It is believed that this initiative will help the country meet its target of providing broadband connectivity to all South Africans who need it by 2020, and will further reduce the cost of telecommunications in the country. [56]

[49] South African Government Information. Communications. Available at http://www.info.gov.za/aboutsa/communications.htm#internet
[50] South Africa Online. Communications. Available at http://www.southafrica.co.za/about-south-africa/science-and-technology/communications/
[51] Armstrong, C., de Beer, J., Kawooya, D., Prabhala, A., and Schonwetter, T. (eds). (2010). Access to knowledge in Africa – The role of copyright. UCT Press. Available at http://www.aca2k.org/attachments/281_ACA2K-2010-Access%20to%20knowledge%20in%20Africa-s.pdf
[52] South African Government Information. Communications. Available at http://www.info.gov.za/aboutsa/communications.htm#internet
[53] South African Government Information. Communications. Available at http://www.info.gov.za/aboutsa/communications.htm
[54] SouthAfrica Online. Communications. Accessed 2 September 2011. Available at http://www.southafrica.co.za/about-south-africa/science-and-technology/communications/
[55] Muller, R. (2011). State of the Internet in South Africa. Available at http://mybroadband.co.za/news/broadband/36612-state-of-the-internet-in-south-africa.html
[56] South African Government Information. Communications. Available at http://www.info.gov.za/aboutsa/communications.htm#internet

The South African Government has also committed to accelerate broadband-infrastructure spending. In this regard, an initial R450 million has been allocated, over the Medium Term Expenditure Framework (MTEF) period to provide broadband services. The Department of Communications has also developed the ICT Rural Development Strategy, which will be implemented in the 2012/13 financial year. The strategy, over the MTEF period, focuses on establishing new access centres in the 161 priority areas across the country, as identified by the Department of Rural Development and Land Reform. The strategy also affirms government's commitment to connect all schools and health centres in the country.[57]

Internet in Education

The importance of Internet connectivity in Education is addressed by the e-rate, which was formalized in the Electronic Communications Act of 2005 to alleviate connectivity costs for schools. The act formalizes an e-rate for schools to access connectivity and pronounces that broadcasting activities cater for education. Further, the act specifies that schools can apply for money from the Universal Service and Access Fund for procurement of electronic communication services.[58] The Education Network is to be an entity that would network all public schools and education and training institutions. The e-rate allows discounted access to Internet services to education institutions in South Africa. Section 73 of the ECA states that Internet services provided to all public schools and all public FET institutions must be provided at a minimum discounted rate of 50% of the total charge levied by the licensee. The discount includes, but is not limited to, any connectively charges for access to the Internet, charges for any equipment used for or in association with connectivity to the Internet, and all calls made to an ISP.[59]

In addition to this, through the State Information Technology Agency (SITA) Act, 88 of 1998, SITA is mandated to help the DBE to access technologies in a manner that 'leverage economies of scale to provide cost-effective procurement.' [60]

As highlighted above, there are various national and provincial initiatives to ensure that educational institutions have Internet access. Additionally, during the 2012/13 financial year, government has prioritized the provision of broadband connectivity to 1,650 schools in all provinces as the initial phase of implementation of the National Connectivity Plan for schools. This initiative is a legacy project of the 2010 FIFA Soccer World Cup™. The broadband connectivity will enable schools to have access to the Internet, e-mails and hosting services.[61]

Internet use via mobile phones is also increasing. A study by two youth marketing agencies (Student Village & Interact RDT) indicates that 78% of South African students access the internet via their cell phones.[62]

South Africa maintains a sophisticated and advanced environment for ICT in higher education, with many higher education institutions maintaining their own strategies for the inclusion of ICT into the

[57] South African Government Information. Communications. Available at http://www.info.gov.za/aboutsa/communications.htm#internet
[58] Government of South Africa. (April 2006). Electronic Communications Act, No. 36, 2005. Government Gazette No. 28743. Available at http://www.info.gov.za/view/DownloadFileAction?id=67890
[59] Cortoos, N. South Africa – From Researching Virtual Initiatives in Education. Available at http://virtualcampuses.eu/index.php/South_Africa
[60] State Information Technology Agency (SITA) Act, 88 of 1998. 2005. Government Gazette No 28021, p.16
[61] South African Government Information. Communications. Available at http://www.info.gov.za/aboutsa/communications.htm#internet
[62] POERUP Referata. South Africa. Available at http://poerup.referata.com/wiki/South_Africa

research and learning environment. These institutional strategies are guided by the Department of Science and Technology Strategic Plan for Fiscal Years 2011-2016. This is a comprehensive plan outlining how South Africa will reinforce building an innovation economy. ICT and higher education are central pillars of this strategic framework, and particular emphasis is given to investing in cyber-infrastructure to promote research and development, investing in human capacity and skills in ICT areas so that innovation and development can occur through funding fellowships and bursaries, and the importation of skilled workers who can transfer knowledge in industry and institutions of higher education.[63] The South African Department of Science and Technology contracted CSIR Meraka Institute to design and implement National Research and Education Network (NREN), known as SANREN. In November 2011 Meraka handed over operational responsibility for SANREN to the Tertiary Education and Research Network (TENET).[64] This initiative has seen a real improvement in internet accessibility and speed particularly since connecting to the SEACOM cable. The establishment of SANREN has had a positive impact on volume and pricing of bandwidth for universities. TENET has now embarked on a programme reaching out to schools at lower level. The intention is to work on this through SchoolNet South Africa.

The South African government's commitment to accelerate broadband infrastructure, promote the access to and use of ICT, and the various efforts to ensure that education institutions are part of the expansion indicates that the transformative effect of the Internet is being recognised in the South African education systems. However, it is only with increased bandwidth speed at cheaper costs that the marginalised (due to gender, ethnicity, socioeconomic class, remoteness, etc.) will be able to overcome challenges associated with accessing knowledge and acquiring learning tools.

[63] Republic of South Africa. (2011). Department of Science and Technology Strategic Plan for Fiscal Years 2011-2016. Available at http://www.dst.gov.za/publications-policies/strategies-reports/DST_STRAT_PLAN_2011.pdf

[64] University of Cape Town Information and Communication Technology Services. Available at http://www.icts.uct.ac.za/modules.php?name=News&file=article&sid=5533

Copyright law in South Africa

Copyright in South Africa is governed by the Copyright Act No. 98 of 1978 and its various amendment acts, and administered by the Companies and Intellectual Property Commission in the Department of Trade and Industry. [65] The Copyright Act grants owners of copyright (authors and other creators of intellectual property) the right to:

- Reproduce the work;
- Create derivative works based on the original work;
- Distribute copies of the work;
- Perform the work, or
- Display the work in public. [66]

However, subject to certain conditions and within specific limits, the Act and Regulations allows teachers and students the right to make copies of copyrighted works without obtaining permission.[67]

South Africa is a party to the Berne Convention and the TRIPS Agreement. It has signed, but not ratified, the WIPO Copyright Treaty.[68]

Section 2 of the Copyright Act, defines nine classes of original works are eligible for copyright protection in South Africa: literary works, musical works, artistic works, sound recordings, cinematograph films, broadcasts, programme-carrying signals, published editions and computer programs.[69]

The Copyright Act automatically protects works created by South Africans or in South Africa.[70] South Africa has, for the most part, implemented the standard protection terms required by the Berne Convention and other relevant international treaties and agreements. [71] South Africa is not a party/signatory to the other relevant international copyright treaties such as the Universal Copyright Convention of 1952; the 1961 Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations; the Geneva Convention for the Protection of Producers of Phonograms Against Unauthorised Duplication of Their Phonograms; or the Brussels Convention Relating to the Distribution of Programme-Carrying Signals Transmitted by Satellite.[72]

For a work to be eligible for copyright, it must be original, and it must have been written down or recorded in some way (except for broadcasts and programme-carrying signals, which must have been broadcast or transmitted, respectively). “Originality” requires the work to have been produced by the exercise of skill and effort by the author(s). [73]

[65] Wikipedia. Copyright law of South Africa. Available at http://en.wikipedia.org/wiki/Copyright_law_of_South_Africa
[66] Rhodes University Library. SA Copyright Law. Available at http://www.ru.ac.za/static/library/infolit/copyright.html
[67] Rhodes University Library. SA Copyright Law. Available at http://www.ru.ac.za/static/library/infolit/copyright.html
[68] Wikipedia. Copyright law of South Africa. Available at http://en.wikipedia.org/wiki/Copyright_law_of_South_Africa
[69] Armstrong, C., de Beer, J., Kawooya, D., Prabhala, A., and Schonwetter, T. (eds). (2010). Access to knowledge in Africa – The role of copyright. UCT Press. Available at http://www.aca2k.org/attachments/281_ACA2K-2010-Access%20to%20knowledge%20in%20Africa-s.pdf
[70] Wikipedia. Copyright law of South Africa. Available at http://en.wikipedia.org/wiki/Copyright_law_of_South_Africa
[71] Armstrong, C., de Beer, J., Kawooya, D., Prabhala, A., and Schonwetter, T. (eds). (2010). Access to knowledge in Africa – The role of copyright. UCT Press. Available at http://www.aca2k.org/attachments/281_ACA2K-2010-Access%20to%20knowledge%20in%20Africa-s.pdf
[72] Armstrong, C., de Beer, J., Kawooya, D., Prabhala, A., and Schonwetter, T. (eds). (2010). Access to knowledge in Africa – The role of copyright. UCT Press. Available at http://www.aca2k.org/attachments/281_ACA2K-2010-Access%20to%20knowledge%20in%20Africa-s.pdf
[73] Wikipedia. Copyright law of South Africa. Available at http://en.wikipedia.org/wiki/Copyright_law_of_South_Africa

For literary, musical and artistic works, except for photographs, the copyright term in South Africa is fifty years from the end of the year of the author's death, or fifty years from publication if it is first published after the author's death. Copyright in other works such as photographs, films and computer programs, the term is fifty years from first publication, or fifty years from creation if not published within fifty years. For sound recordings, broadcasts, programme-carrying signals and published editions, copyright is fifty years from first publication or transmission.[74]

Anonymous works are protected for the shorter of fifty years from first publication or fifty years from the year when it is reasonable to presume the author is dead. In instances of works with multiple authors, the fifty years from death are calculated from the death of the last author to die. Government works are protected for fifty years from first publication. [75]

The Copyright Act Regulations contains specific provisions for libraries and archives. Section 3 of the Copyright Regulations stipulates that a library or archives depot (or any of its employees acting within the scope of their employment) may reproduce a work and distribute a copy if:

- The reproduction or distribution is made for non-commercial purposes;
- The collections of the library or archive depot are open to the public or available to researchers; and
- The reproduction of the work incorporates a copyright warning.

The library/archive reproduction rights in Section 3 of the Regulations are, in many cases, subject to the provisions of Section 2, which require that the reproduction must be of a 'reasonable portion' of the work and must 'not conflict with the normal exploitation of the work'.[76]

The Intellectual Property Rights from Publicly Financed Research and Development Act 51 of 2008 was prepared with the intention of facilitating better use of intellectual property emanating from publicly financed research and development and to establish a National Intellectual Property Management Office (NIPMO), an Intellectual Property Fund and technology transfer offices at relevant institutions. These institutions include universities and public research institutes such as the Medical Research Council, the Human Sciences Research Council, the South African Bureau of Standards and the Water Research Commission. Salient points under the Act are:

- A recipient has a choice regarding retention of ownership of intellectual property emanating from publicly financed research and development. If electing not to retain ownership, subject to certain conditions, it will fall into the hands either of NIPMO, or a private organization that provided funding, or the creator.
- Closure duties including ensuring that intellectual property emanating from the aforementioned funds is appropriately protected before the results of such research and development are published or publicly disclosed by other means as per Section 5(b).
- A recipient must assess the intellectual property to determine whether it merits statutory protection and, where appropriate, apply for and use best efforts to obtain statutory protection.
- A recipient has the duty to license and otherwise transfer rights in respect of the pertinent intellectual property, as well as manage commercialisation of the intellectual property.
- Affected institutions must establish technology transfer offices.

[74] Wikipedia. Copyright law of South Africa. Available at http://en.wikipedia.org/wiki/Copyright_law_of_South_Africa
[75] Wikipedia. Copyright law of South Africa. Available at http://en.wikipedia.org/wiki/Copyright_law_of_South_Africa
[76] Armstrong, C., de Beer, J., Kawooya, D., Prabhala, A., and Schonwetter, T. (eds). (2010). Access to knowledge in Africa – The role of copyright. UCT Press. Available at http://www.aca2k.org/attachments/281_ACA2K-2010-Access%20to%20knowledge%20in%20Africa-s.pdf

- Creators and their heirs are granted specific rights to portions of revenues accrued to the institution.
- There is a preference for non-exclusive licensing and licensing to Broad-Based Black Economic Empowerment (BBBEE) entities;
- For intellectual property relevant to the health, security and emergency needs of South Africa, the state must be granted an irrevocable and royalty-free licence authorizing the state to use the intellectual property anywhere in the world; and
- For offshore transactions, NIPMO must be satisfied that there is insufficient capacity in South Africa to develop or commercialize the intellectual property locally and South Africa will benefit from such offshore transaction.[77]

It has been argued that the Intellectual Property from Publicly Financed Research and Development Act, whilst intending to provide for more effective use of intellectual property emanating from publicly funded research, would have allowed greater access to knowledge had works resulting from government-funded research been mandated to be in the public domain or, publicly available at no charge within a reasonable time frame. [78]

It has been noted that copyright law is only beginning to be recognized as an important aspect of development policy. As a result, copyright law in general and, more specifically, the correlation between copyright law and access to knowledge/learning materials, are under-explored in South Africa's (legal) secondary literature. Very few books are entirely devoted to South African copyright law, and it is often briefly discussed in single chapters in textbooks dealing with commercial law. Whilst mention is typically made of the legitimate interests of users safeguarded by copyright exceptions and limitations, access to learning materials is usually not specifically addressed in these chapters. [79]

Creative Commons South Africa offers Creative Commons licences tailored for the specifics of the legal system in South Africa.[80] The focus is to promote Creative Commons licensing in the continent.

Copyright law in Education

The issue of access to learning materials has started to attract more attention in recent years in the South African copyright arena. However, only a few legal academics have participated in the discussion so far. The majority of the (few) legal academics dealing with copyright law and the issue of access to knowledge and learning materials appear to favour a less stringent copyright protection regime in South Africa in order to facilitate access to learning materials and foster education.[81]

[77] Armstrong, C., de Beer, J., Kawooya, D., Prabhala, A., and Schonwetter, T. (eds). (2010). Access to knowledge in Africa – The role of copyright. UCT Press. Available at http://www.aca2k.org/attachments/281_ACA2K-2010-Access%20to%20knowledge%20in%20Africa-s.pdf

[78] Armstrong, C., de Beer, J., Kawooya, D., Prabhala, A., and Schonwetter, T. (eds). (2010). Access to knowledge in Africa – The role of copyright. UCT Press. Available at http://www.aca2k.org/attachments/281_ACA2K-2010-Access%20to%20knowledge%20in%20Africa-s.pdf

[79] Armstrong, C., de Beer, J., Kawooya, D., Prabhala, A., and Schonwetter, T. (eds). (2010). Access to knowledge in Africa – The role of copyright. UCT Press. Available at http://www.aca2k.org/attachments/281_ACA2K-2010-Access%20to%20knowledge%20in%20Africa-s.pdf

[80] Creative Commons (2005). Creative Commons Copyright Licenses Launch In South Africa. Available at http://creativecommons.org/press-releases/entry/5460

[81] Armstrong, C., de Beer, J., Kawooya, D., Prabhala, A., and Schonwetter, T. (eds). (2010). Access to knowledge in Africa – The role of copyright. UCT Press. Available at http://www.aca2k.org/attachments/281_ACA2K-2010-Access%20to%20knowledge%20in%20Africa-s.pdf

Copyright law in South Africa permits the making of limited numbers of copies without copyright permission for the purpose of research or private study, or for personal or private use. It is generally accepted that the copying of the whole or a major portion of the work in question is not reasonable and not compatible with fair dealing. Reproduction for Education **Section 12(4)** of the Act allows a work to be used without permission for teaching purposes:

> *"The copyright in a literary or musical work shall not be infringed by using such work, to the extent justified by the purpose by way of illustration in any publication, broadcast or sound or visual record for teaching: provided that such use shall be compatible with fair practice and that the source shall be mentioned as well as the name of the author if it appears on the work."*

Regulation 7 of section 13 of the Act allows for multiple copies for classroom use, not exceeding one copy per pupil per course.[82] Regulation 8 allows the making of a single copy by or for a teacher for the purpose of research, teaching or preparation for teaching in a class. Reproductions are permitted only if not more than one copy of a reasonable portion of the work is made and 'if the cumulative effect of the reproductions does not conflict with the normal exploitation of the work to the unreasonable prejudice of the legal interest and residuary rights of the author'. Additionally Section 12(11) of the Act deals with translation and states that translation of works for the purposes of educational use is allowed. [83]

It has been argued that the educational exceptions provided for in the Regulations present a few challenges. First, it is unclear what constitutes a 'reasonable portion', and thus students would often be unsure of how much they could lawfully photocopy. Furthermore, copies may not be made for purposes other than classroom use. This would prevent distance learning, where learners are not in possession of the original copy in order to exercise the right granted under the Regulations. [84]

It has also been argued that the Copyright Act does not properly cover the digital environment and its challenges. Furthermore, the current set of copyright exceptions and limitations, particularly in relation to educational uses of copyright-protected materials, are vague, fragmentary and in many instances outdated. The use of modern technologies for educational purposes, for example in distance education, remains largely unconsidered.[85]

In 2007, the South African Cabinet approved a policy and strategy for the adoption in government of free and open source software (FOSS). All new software developed for or by the government will be based on open standards and government will migrate all current software to FOSS. While the Policy refers specifically to the adoption of FOSS in government, it is believed that it will encourage all entities engaging with government to use compatible software. By endorsing open source software and open standards, this may lower barriers for schools' and libraries' access to ICT.[86]

[82] Rhodes University Library. SA Copyright Law. http://www.ru.ac.za/static/library/infolit/copyright.html
[83] Armstrong, C., de Beer, J., Kawooya, D., Prabhala, A., and Schonwetter, T. (eds). (2010). Access to knowledge in Africa – The role of copyright. UCT Press. Available at http://www.aca2k.org/attachments/281_ACA2K-2010-Access%20to%20knowledge%20in%20Africa-s.pdf
[84] Armstrong, C., de Beer, J., Kawooya, D., Prabhala, A., and Schonwetter, T. (eds). (2010). Access to knowledge in Africa – The role of copyright. UCT Press. Available at http://www.aca2k.org/attachments/281_ACA2K-2010-Access%20to%20knowledge%20in%20Africa-s.pdf
[85] Armstrong, C., de Beer, J., Kawooya, D., Prabhala, A., and Schonwetter, T. (eds). (2010). Access to knowledge in Africa – The role of copyright. UCT Press. Available at http://www.aca2k.org/attachments/281_ACA2K-2010-Access%20to%20knowledge%20in%20Africa-s.pdf
[86] Armstrong, C., de Beer, J., Kawooya, D., Prabhala, A., and Schonwetter, T. (eds). (2010). Access to knowledge in Africa – The role of copyright. UCT Press. Available at http://www.aca2k.org/attachments/281_ACA2K-2010-Access%20to%20knowledge%20in%20Africa-s.pdf

Additionally, in 2012 the Department of Higher Education and Training (DHET) released the Green Paper for Post School Education and Training which indicates commitment to consider an Open Licensing Framework for all education stakeholders.[87]

Copyright and licensing issues permeate discussion and debate on creation and reuse of OER and are therefore are at the heart of OER as they have important implications for creators, users and institutions. These recent policy positions are thus promising as it indicates greater attention to open licensing and commitment to increasing access to learning materials. This is discussed in more detail in the next section.

[87] Republic of South Africa. (2012).Green Paper on Post-School Education and Training. Department of Higher Education. Available at http://www.agriseta.co.za/downloads/Green_Paper_PDF_Final.pdf

OER Initiatives in South Africa

In South Africa, as mentioned in the above discussion of the copyright policy environment, the government has approved a policy and strategy for Free and Open Source Software (FOSS). Open Source Software is also proposed to enable South Africa to develop content and programmes in education using local languages. By September 2009, more than half of government departments had FOSS implementation plans; about 25% of the departments used FOSS servers, 40% used FOSS at the back end, and 12% on desktops.[88]

The Department of Higher Education and Training (DHET) has recently released the Green Paper for Post School Education and Training which emphasizes improving access to ICT through enhancing infrastructure and developing high quality learning resources that are based on OER models.[89] It specifically notes:

> *The DHET will support efforts that invest a larger proportion of total expenditure in the design and development of high quality learning resources, as a strategy for increasing and assuring the quality of provision across the entire post schooling system. These resources should be made freely available as Open Educational Resources (OER) for use with appropriate adaptation. This would be in line with a growing international movement, supported heavily by organizations such as UNESCO and the Commonwealth of Learning (CoL) that advocate the development of OER. (p.59)*

The key motivators for adopting OER are its potential to reduce costs and to improve quality. The paper highlights that the DHET will identify ways to support institutions in producing and sharing learning materials, and will consider the adoption of an appropriate Open Licensing Framework for use by all education stakeholders, within an overarching policy framework on intellectual property rights and copyright in higher education, in line with national needs. [90]

The Ministry of Higher Education (MHET) has also prepared a Draft Policy Framework for the Provision of Distance Education in South African Universities. The policy notes the influence of the growing international OER movement, and indicates interest in considering the extent to which investments in developing high-quality learning resources – applied as a national strategy – can make a contribution to improvement in the overall quality of higher education across all modes of teaching and learning. It provides for the establishment of a Task team who will be responsible for the following:

> 1. *Review existing national policies to assess the extent to which they make specific provision for supporting institutional investments in ongoing curriculum design, creation of effective teaching and learning environments within courses and programmes, and development of high quality teaching and learning materials.*
> 2. *Determine ways to provide support for the production and sharing of learning materials as OER at higher education institutions*
> 3. *Consider the adoption or adaptation, in accordance with national needs, of an appropriate Open Licensing Framework for use by all higher education stakeholders, within an overarching policy framework on intellectual property rights and copyright in higher education.*

[88] Webb, A. (2009). Where is FOSS today. WITS FOSS Awareness Event September 2009. Available at http://presentations.wits.ac.za/usrfiles/webpresent/gen13Srv42Nme14_5006_1251975494/gen13Srv42Nme14_5006_1251975494.pdf

[89] Republic of South Africa. (2012).Green Paper on Post-School Education and Training. Department of Higher Education. Available at http://www.agriseta.co.za/downloads/Green_Paper_PDF_Final.pdf

[90] Republic of South Africa. (2012).Green Paper on Post-School Education and Training. Department of Higher Education. Available at http://www.agriseta.co.za/downloads/Green_Paper_PDF_Final.pdf

4. *Play an awareness-raising and advocacy role around the use of OER, helping all higher education stakeholders to understand issues surrounding intellectual property rights and copyright, as well as how these are being challenged and re-shaped by the rapid digitization and online sharing of information and resources.*[91]

In addition, there is also a policy decision, through the process of the Integrated Strategic Planning Framework for Teacher Education Development (2011-2025), that courses and materials for professional teacher and whole school development should be developed as OER.

On a broader level, the Shuttleworth Foundation together with the Open Society Foundations convened a meeting in 2007 to accelerate efforts to promote open resources, technology and teaching practices in education. Participants discussed ways to broaden and deepen their open education efforts by working together. A concrete outcome of the meeting was the Cape Town Open Education Declaration, a global initiative to promote open resources, technology and teaching practices in education.[92] The declaration urges governments and publishers to make publicly funded educational materials available freely over the Internet and encourages teachers and students around the world to use the Internet to share, remix and translate classroom materials to make education more accessible, effective and flexible.[93] In November 2012, 2,372 individuals and 245 organizations had signed the declaration. Of these, 329 were signatories from South Africa.[94]

Several initiatives provide free educational resources. Through this, South Africa is witnessing a growth in the OER movement, where educational resources are made available under open licences. While not all materials being freely and openly made available are labelled as OER or have open licences, many are effectively OER because they are available for re-use by others free of charge.

National OER initiatives

As highlighted earlier, the Department of Basic Education, through the Thutong portal, provides a comprehensive array of free educational resources, policy information, and interactive services concerning all aspects of the South African Schooling Sector.[95] At the core of Thutong is a database of shared resources. These include lesson plans, worksheets, tests, examinations, policy documents and official communiqués and forms from the DoE and some Provincial offices. For example, the Curriculum and Examination section allows educators and learners to access and download various workbooks for different areas of the curriculum. The portal also encourages users to create and share resources in the different learning areas.

The Department of Science and Technology has funded an Academy of Science of South Africa (ASSAf) initiative to make a number of premier South African journal publications open access and online. The Scientific Electronic Library Online (SciELO) is an open-access searchable full-text journal database in service of the South African research community. The database covers a selected collection of peer-reviewed South African scholarly journals.[96]

[91] Department of Higher Education and Training (2012) Draft Policy Framework for the Provision of Distance Education in South African Universities, May 2012, p.27
[92] The Cape Town Open Education Declaration. Available at http://www.capetowndeclaration.org
[93] Armstrong, C., de Beer, J., Kawooya, D., Prabhala, A., and Schonwetter, T. (eds). (2010). Access to knowledge in Africa – The role of copyright. UCT Press. Available at http://www.aca2k.org/attachments/281_ACA2K-2010-Access%20to%20knowledge%20in%20Africa-s.pdf
[94] The Cape Town Open Declaration. View signatures. Available at http://www.capetowndeclaration.org/list_signatures?indorg=all&keyword=South+Africa
[95] Thutong. About Us. Available at http://www.thutong.doe.gov.za/tabid/243/Default.aspx
[96] SciELO South Africa. Available at http://www.scielo.org.za/

The Departments of Communication, Health and Education have invested significantly in the development of openly distributed educational content by Mindset Network.[97] Mindset Network, an NGO founded in 2002, develops and distributes high quality and contextually relevant educational resources for free use in the schooling, health and vocational sectors. Materials are distributed through various technology platforms including broadcast and datacast. The materials are made available in video, print and in computer-based multimedia formats. Mindset Network has three primary projects specifically targeted for the education sector:

- Mindset Learn – The target for this programme is high school learners and teachers from Grades 10 to 12. Curriculum-aligned video content for English, Mathematics, Physical Sciences, Information Technology, Mathematical Literacy, and Financial Literacy is broadcast via satellite television, with supporting multimedia material in print and on the internet. The content is also available on the Mindset website. Mindset Learn has also created a series of teacher development videos. Users are able to download past-year examination papers that are hosted on the Department of Education's website. Furthermore, Mindset has a helpdesk where learners have the opportunity to ask questions (via Mxit, Facebook, email or telephone) to a panel of experts who will respond within 48 hours.
- Mindset Cabanga – This programme is for primary school learners and teachers, with a focus on Grade 4 Natural Science, Mathematics, and Technology. The material is available in video, computer multimedia, and print format.
- Mindset Health – Although specifically focused on healthcare workers, patients and the general public, the valuable information provided on this programme is also good educational material for school learners and university students. Mindset Health's main and initial content focus is HIV and AIDS, tuberculosis (TB), and child survival, and other intended content focuses are malaria, injection safety, and healthy lifestyles. The Health content is also distributed in video, computer-based multimedia and print formats and is available in English, Afrikaans, isiXhosa, isiZulu, and seSotho.[98]

Mindset transmits content directly to the following communities:

- Over 2 million households in sub-Saharan Africa
- Over 1200 secondary schools throughout South Africa
- Over 307 health clinics and hospitals in South Africa
- 50 primary schools throughout South Africa.[99]

The Shuttleworth Foundation has also funded a number of educational projects focussed on free and open use. An example of this is the Yoza Project, originally known as the m4Lit (mobile phones for literacy) project which focused on providing mobile novels or m-Novels (m-Novels are short stories published on mobile phones) for free. This project was initiated in response to evidence that 'teens do not read, teens do not write enough, and teens love their phones', and that there are no leisure books in 51% of South African Households.[100] The project aimed to contribute to the understanding of mobile literacies, and teen reading and writing using their mobile phones. The MXit platform was used for this project because of its popularity among youth, and because it has a low cost for mobile data.[101] Readers were encouraged to leave comments and vote on issues. Stories

[97] Mindset. Our partners. Available at http://www.mindset.co.za/partners/content
[98] Mindset Network – programmes. Available at http://www.mindset.co.za/about
[99] Mindset Network brochure. Available at http://www.mindset.co.za/sites/files/u1/Mindset_Network_Brochure2008.pdf
[100] Vosloo, S. (2010). M4Lit (mobiles for literacy) project findings. Research developed and conducted in collaboration with Ana Deumert and Marion Walton (both University of Cape Town). Available at http://m4lit.files.wordpress.com/2010/03/m4lit_project_findings_svosloo_2010.pdf
[101] Shuttleworth Foundation. M4Lit. Available at http://www.shuttleworthfoundation.org/projects/m4lit/

on Yoza are published under a Creative Commons Attribution Share Alike 2.5 South Africa licence.[102] From September 2009 to September 2010, the m-novels on the site were read more than 60,000 times while readers posted more than 40,000 comments and submitted more than 10,000 competition entries.[103] The project also encouraged using mobile phones for writing, which involved hosting a competition for the best comment left on any Yoza story. This was part of Readathon which, for the first time, included mobile phones in its writing competitions.[104]

Formerly seeded by the Shuttleworth Foundation, the Siyavula project focuses on working with teachers to develop teaching and learning materials collaboratively and share them through an open licence agreement. This includes a focus on Mathematics and Science web books which have been enriched with appropriate videos, simulations and PowerPoint presentations. Siyavula also offers additional support services which aid learners in mastering Mathematics and Science.[105] It also offers tools, platforms and support services for educators looking to incorporate technology and a sense of openness into their teaching.[106]

Siyavula has recently completed a set of openly licensed books: 'Grade 4-6 Natural Sciences and Technology with the Thunderbolt Kids'. The books have been completed, laid out, translated, and shared with the Department of Basic Education (DBE). The books have been released under an open copyright licence that grants educators the freedom to copy and distribute them freely.[107]

In 2011, the DBE approached Siyavula to align Grade 10 Maths and Physical Science textbooks to the curriculum. In 2012, the DBE printed and began distributing these books to all government schools across South Africa.[108] The Free High School Science Texts project, also funded by the Shuttleworth Foundation is aimed at developing and disseminating free and open textbooks and supporting materials for use in the teaching of Science and Maths for grades 10-12, based on the South African school curriculum. The vision of the founders was to write the textbooks in a collaborative way using contributions from many volunteers which would also contributed to a more cost-effective product.[109] The books are now freely available on the web, as Everything Science and Everything Maths. The licence (CC-BY-ND) governing use of the materials is accompanied by a clearly articulated statement of what is allowed: The books provide a rich resource, with the conventional PDF/print text supplemented by video materials, for students and teachers, links to support services and to a wide range of open resources. This provides a level of interactivity absent from conventional textbooks and potentially a higher level of support. [110] Siyavula continuously strives to make their Everything Maths and Everything Science textbooks accessible to learners in a variety of formats such that they can be used on devices like laptops, tablets, projectors and mobile phones. For example, Siyavula's books are now available and accessible via Mxit. By having the textbooks

[102] Yoza Cellphone stories. Available at http://www.yoza.mobi/static_pages/view/14/
[103] Vosloo, S. (2010). mLearning in Africa-Lessons from the m4Lit project. Presented at Mobile Technologies for Learning and Development Summit, Universitat Oberta de Catalunya, Barcelona, October 2010 http://m4lit.files.wordpress.com/2010/10/m4lit_unesco_barcelona_oct2010_2.pdf
[104] Vosloo, S. (2010). Beyond the Printed Word. Available at http://www.mg.co.za/article/2010-09-10-beyond-the-printed-word
[105] Siyavula. Technology Powered Learning. Available at http://projects.siyavula.com/technology-driven-learning/
[106] Siyavula. Technology Powered Teaching. Available at http://projects.siyavula.com/technology-powered-teaching/
[107] Siyavula. Natural Sciences and Technology Workbooks Gr 4-6, Update on the workbooks project. Available at http://projects.siyavula.com/naturalsciences/2012/10/24/update-on-the-workbooks-project/
[108] Siyavula. Everything Maths and Everything Science available on Mxit. Available at http://projects.siyavula.com/blog/2012/07/10/everything-maths-and-everything-science-available-on-mxit/
[109] Armstrong, C., de Beer, J., Kawooya, D., Prabhala, A., and Schonwetter, T. (eds). (2010). Access to knowledge in Africa – The role of copyright. UCT Press. Available at http://www.aca2k.org/attachments/281_ACA2K-2010-Access%20to%20knowledge%20in%20Africa-s.pdf
[110] Open UCT Initiative. OER in the Mainstream – South Africa takes a leap into OER Policy. Available at http://openuct.uct.ac.za/oer-mainstream-%E2%80%93-south-africa-takes-leap-oer-policy

available on Mxit, learners are able to take textbooks out of the classroom providing unlimited and unrestricted access, thus allowing learners freedom to take control of their own learning.[111]

Siyavula has also partnered with the OER pioneer, Connexions, to extend its education portal to serve as the foundation for Siyavula's community of educators.[112] Siyavula has over 4,500 Grade R to 12 OER in English and Afrikaans, with some materials translated into Xhosa, aligned to the South African curriculum, accessible from the Connexions portal.

Another notable national initiative is the VUMA! portal, targeted at university students. The purpose of the portal is to provide university students with support in adjusting to university. The online interactive space gives students the opportunity to engage with their peers on various aspects of their personal and university lives. Of note is the Skills Zone, an online learning space for students focused on strengthening and building critical skills in areas such as study skills, language/writing skills, number skills, computer skills and life skills. Developing and bringing together a collection of suitable open source learning materials, a coherent learning package has been created in the form of 20 – 45 minute tutorials on various topics. These online tutorials were designed as self-contained resources and the set of tutorials do not constitute an accredited online programme or course. However, educational providers could include the online tutorials in a formal foundation course or an informal orientation and support programme for students.

South African History Online (SAHO) is a non-partisan people's history project, established in 2000 as a non-profit organization. It aims to address the biased way in which the history and cultural heritage of South Africans was represented in educational and cultural institutions, with a mission to create the most comprehensive online encyclopedia of South African history and culture.[113] It offers alternative perspectives of history, focusing on untold stories and giving learners a chance to construct their own oral histories. The Classroom section provides online learning resources designed specifically for teachers and students. The resources available on The History Classroom are carefully selected and aligned with the school history curriculum from Grade 4 to Grade 12.[114] The site also provides information for teachers, and an illustrated section on arts and culture. Additionally, SAHO and the DBE jointly run the annual Chief Albert Luthuli Young Historians' Prize. This is a national Oral History project, which invites learners and educators to undertake oral history projects on people who fought for freedom and those who are promoting democracy in their communities.

The South African Institute for Distance Education (SAIDE), based in Johannesburg established the pan-continental OER Africa initiative, which supports and promotes the development of OER in Africa. OER Africa is involved in numerous projects supporting the adoption of OER in higher education institutions across Africa. With seed funding from the Hewlett Foundation and a wide variety of projects and partnerships running across Africa, OER Africa is regarded as providing a unique opportunity to deploy African expertise to harness the concept of OER to the benefit of education systems on the continent and around the world. Their vision is as follows:

> *Our vision is that of a vibrant and sustainable African education systems and institutions that play a critical role in building and sustaining African societies and economies through free and open development and sharing of common intellectual capital.* [115]

[111] Siyavula. Everything Maths and Everything Science available on Mxit. Available at http://projects.siyavula.com/blog/2012/07/10/everything-maths-and-everything-science-available-on-mxit/
[112] Shuttleworth Foundation. Siyavula. Available at http://www.shuttleworthfoundation.org/projects/siyavula/
[113] South African History Online. Available at http://www.sahistory.org.za/
[114] South African History Online: History classroom: http://www.sahistory.org.za/classroom/index.htm
[115] OER Africa. About OER Africa. Available at http://www.oerafrica.org/aboutoer/AboutUs/tabid/113/Default.aspx

Their approach is to build relationships with, and provide support to, existing networks of educational organizations and/or individuals in areas of policy engagement, development/adaptation of OER for education programmes and courses, and supporting collaborative networks.[116] Their website not only allows access to African-developed resources, but also allows users to follow a documented process of how the materials were created.

The ACEMaths project began in 2006, with the aim of piloting a collaborative process for the selection, adaptation and use of OER materials for teacher education programmes in South Africa. The focus of this project was to:

- Locate existing Maths materials;
- Adapting these materials rather than in developing new materials;
- Pilot the idea of increasing collaboration between institutions in material development;
- Make resources available for institutions to use and adapt for various courses. [117]

The ACEMaths material is based on content developed by the University of South Africa (UNISA), which provided permission for the use and adaptation of materials. The team of developers included mathematics and inclusive education specialists from eight South African higher education institutions offering teacher education programmes. There were two phases to the project: selecting and adapting the materials; and using the pilot version of the adapted materials in a variety of programmes. Both phases were managed through a series of workshops and via email contact between participants.

Participating institutions were: SAIDE, University of South Africa, University of the Witwatersrand, Rhodes University Mathematics Education Project, University of Kwa-Zulu Natal, Cape Peninsula University of Technology, Nelson Mandela Metropolitan University and University of Venda for Science and Technology. Once the materials were piloted and used, take-up research in six of the eight participating institutions was conducted. This resulted in the materials being revised and the materials are now available for downloading and adaptation from the OER Africa website.

Another notable project is the African Health OER project, a three-year effort to develop a sustainable and scalable OER programme to support health education. The project is a collaboration of institutions seeking to develop a sustainable and scalable model for the systematic rollout of OER to support health education on the continent. This collaborative effort was embarked on by University of Michigan, OER Africa, Kwame Nkrumah University of Science and Technology (KNUST), the University of Ghana (UG), the University of Cape Town (UCT), and the University of the Western Cape (UWC), with support from the Hewlett Foundation. The OER materials produced in this initiative are made freely available to students, faculty, and self-learners around the world through a Creative Commons licence. [118]

Following the success of this inter-institutional health project, the African Health OER Network was developed to strengthen the intellectual and policy infrastructure within and between African institutions. The objective is to systematically draw in more African and, eventually, global participants to create, adapt, share, and use OER to the benefit of health education in Africa, while developing models of collaboration and sustainability that can be replicated in other regions of the

[116] OER Africa. About OER Africa – Our Operational Approach. Available at http://www.oerafrica.org/aboutoer/OurOperationalApproach/tabid/250/Default.aspx

[117] OER Africa. ACE Maths. Available at http://www.oerafrica.org/acemaths/ACEMathsProjectHome/tabid/132/Default.aspx

[118] Adam, L., Butcher, N., Tusubira, F.F.T., and Sibthorpe, C. (2011). Transformation-Ready: The strategic application of information and communication technologies in Africa – Education Sector Study. Prepared for the African Development Bank, the World Bank and the African Union. Annex 4

world. The network seeks to enable participants to develop, adapt, and share health education resources to augment limited human and other resources in the health sector and impact positively on overall health provision in Africa and beyond. The mission of the Network is to advance health education in Africa by using OER to share knowledge, address curriculum gaps, and support communities around health education.[119] The African Health OER Network, focused on health resources developed by African higher education institutions, and also featuring a comprehensive repository of resources from reputable health education institutions and networks, for example MedEdPORTAL.[120] Additionally there is a Health OER Request Facility, which creates an opportunity to request materials that users have a specific need for, as well as to respond to specific requests for content should this material be available. The Network is co-facilitated by OER Africa and the University of Michigan.[121]

Another notable initiative is the Skills for a Changing World Programme, which was developed by the Free State Higher Education Consortium (FSHEC) and Mindset, with the support of the Ford Foundation. The Skills for a Changing World Programme sought to provide educational opportunities for those who are excluded from post-schooling education both at FET and the HE levels. The need for such a programme flowed from project planning for three campuses by the Free State Higher Education Consortium (FSHEC) in 2005. The consortium consisted of three member institutions at that time – University of Free State (UFS), Central University of Technology (CUT) and the Free State School of Nursing (FSSON). A needs analysis done by FSHEC revealed that the core skills students lacked when they started university or began work were literacy, numeracy, life skills, dealing with diversity, and consciousness of the world around them. The consortium therefore decided to develop a programme focusing on these core areas in recognition of the need for such skills for people to function effectively in the world of work. The project, which ran in 2007, has the developed resources available on the OER Africa website.

A further noteworthy initiative is the African Teacher Education OER Network (ATEN), which encourages understanding, use, and sharing of OER to support teacher education and development in Africa. Several South African universities are involved in this initiative, including the University of Fort Hare, University of South Africa (UNISA), University of KwaZulu-Natal and University of Pretoria. The initiative, in collaboration with the Teacher Education in Sub-Saharan Africa project, has the goal of assisting African teacher educators to inform and influence policy in their own institutions in respect to OER, and share expertise, experience and resources to improve teacher education in local contexts. Thus far, several network meetings have been held in order to promote the initiative and grow the network.

Saide has also embarked on the African Storybook Project (ASP) will build and maintain a free website of appropriate African children's storybooks. The heart of the African Storybook Project will be a website, which will provide free full-colour digital picture storybooks for new African readers (all released under a Creative Commons, Attribution licence). This library, besides being free to all, it will facilitate re-versioning, new book creation, easy uploading, and collaborative workspaces to form new literacy communities. It will thus foster an open community, encouraging contributions from all who are willing to participate. The website is currently being developed and is due to go live in 2013.

[119] African health OER Network. Available at http://www.oerafrica.org/healthoer/Home/tabid/1858/Default.aspx
[120] African Health OER Network. Available at http://www.oerafrica.org/healthoer/Home/tabid/1858/Default.aspx
[121] African Health OER Network. About Us. Available at http://www.oerafrica.org/healthoer/Home/AboutUs/tabid/1870/Default.aspx

Of note, is that Saide has developed an OER Policy which is strongly is strongly aligned to and supportive of Saide's mission statement and its core aims. SAIDE has since inception tried to make as much of its work freely available. For example:

- Managing ICTs in South African Schools: A Guide for School Principals was published in 2005. The Department of Education has printed it and disseminated over 20 000 copies of the resource to schools in the country.
- Being a Vocational Educator: A Guide for Lecturers in FET Colleges was published in 2005 and made freely available on the Saide website.[122]
- Resources to create 'caring schools' were developed out of a research project during which the Saide team visited schools across seven of the nine provinces in South Africa and recorded the examples of good practice. The findings of the research informed the production of a guide and an accompanying toolkit. It is hoped that this will serve as a practical guide to help school principals and their management teams (SMTs) to manage the health and social needs of children infected and affected by HIV and AIDS or made vulnerable for other reasons. See Creating a Caring School: A Guide for School Management Teams, and Creating a Caring School: Toolkit

Institutional OER initiatives

There are several universities which are actively producing OER.

At the University of Cape Town (UCT), the Centre for Educational Technology (CET), a unit responsible for a wide range of activities (mostly mandated in terms of the university educational technology policy), is involved in running several educational technology projects including OER.[123] One such project is the OpeningScholarship project funded by the Shuttleworth Foundation. Its main aim is to explore the opportunities that ICT and open dissemination models could offer for enhanced communication and more effective knowledge dissemination at UCT.[124] In exploring how UCT is responding to the use of ICTs, new communication channels and open and collaborative approaches for knowledge dissemination within the university community, nationally and internationally; one of the outcomes of the project was a paper that explored the emergence of OER at UCT.[125] It reviewed interest and exploration in OER at various levels at UCT and highlighted factors that appear to motivate, enable or hinder sharing teaching and learning materials beyond the institutional lecture halls and tutorial rooms. The emergence of OER appeared to be centred on a number of individual champions or groups of students and academics supporting the notion of increased openness of teaching and learning materials and/or processes. Examples of these included conference papers, competitions, and the development of open access textbooks. The paper identified various visions of open education, enabling and constraining policy issues and gaps, existing or missing organizational structures, supportive or obstructing procedures, and isolated OER practices. These largely individual efforts were made more noticeable when UCT signed the Cape Town Open Education Declaration, which also provided some sense of strategic direction for the university. Finally, the paper also raised

[122] Saide. Areas of Work. Available at http://www.saide.org.za/AreasofWork/OpenEducationalResources/tabid/1457/Default.aspx

[123] Czerniewicz, L., and Carr, T. (2011). Growing Educational use of Technology in a Fast Changing Environment. Presented at Conference of Rectors, Vice Chancellors and Presidents of African Universities (COREVIP) from May 30 to June 3, 2011 in Stellenbosch, South Africa.

[124] Centre for Educational Technology. The OpeningScholarship Project. Available at http://www.cet.uct.ac.za/OpeningScholarship

[125] Hodgkinson-Williams, C. (2009). Institutional report 2: Sketching the terrain: Open educational resources for teaching and learning at the University of Cape Town. Cape Town: Centre of Educational Technology, University of Cape Town. Available at http://www.cet.uct.ac.za/files/file/OS%20Institutional%20report2%20_%20%20Final%20typeset.pdf

some strategic, organizational, technical, financial and legal issues that needed to be addressed if OER is adopted on an institution-wide basis.[126]

The OER UCT project which ran from March 2009 to February 2010, also with support from the Shuttleworth Foundation, showcases the OER created by UCT academics and students.[127] The project created a central UCT-branded searchable OER directory and provided process and infrastructure support to UCT staff to facilitate the sharing of open and potentially open teaching resources as OER. It promoted the visibility of UCT-published OER on appropriate search engines (such as Google/Creative Commons) in well-known OER aggregators (such as OER Commons) and amongst appropriate target communities (for example, disciplinary-based educator communities). [128] A directory listing the UCT Collection of OER went live in February 2010 – see UCT OpenContent directory.

The OpenUCT Initiative, funded by the Andrew Mellon Foundation is involved in advocacy, hosting events, undertakes research and provides some support. Its key objectives are to make freely available as many as possible of UCT's research, teaching and community-focused scholarly resources via the Internet, and to engage with the higher education openness agenda, from the perspective of the global south.

Also at the University of Cape Town, the Faculty of Health Sciences have been actively involved in the production of Health OER as part of the Health OER Inter-Institutional project, , a collaboration of institutions seeking to develop a sustainable and scalable model for the systematic rollout of OER to support health education on the continent. This collaborative effort is driven by the OER Africa initiative of the South African Institute for Distance Education (Saide) and the University of Michigan.[129] The OER materials produced in this initiative are made freely available to students, faculty, and self-learners around the world through a Creative Commons licence.[130] See http://www.healthedu.uct.ac.za/elearning/healthoer/ for more details.

Furthermore, UCT recently updated its Intellectual Property (IP) policy so that it now specifically covers issues relating to the creation of OER resources and licensing processes that need to be followed. Section 9.2 of the policy provides support for publication of materials under Creative Commons licences:

> *UCT supports the publication of materials under Creative Commons licences to promote the sharing of knowledge and the creation of Open Education Resources. UCT undertakes certain research projects that seek to publish the research output in terms of a Creative Commons licence.*
> *9.2.1 Author(s) of Copyright protected materials that are listed in clauses 8.2[131] and 8.3[132] is free to distribute their material under a Creative Commons licence.*

[126] Hodgkinson-Williams, C. (2009). Institutional report 2: Sketching the terrain: Open educational resources for teaching and learning at the University of Cape Town. Cape Town: Centre of Educational Technology, University of Cape Town. Available at http://www.cet.uct.ac.za/files/file/OS%20Institutional%20report2%20_%20%20Final%20typeset.pdf
[127] Centre for Educational Technology. OER UCT, Available at http://www.cet.uct.ac.za/oer
[128] Hodgkinson-Williams, C. (2009). Institutional report 2: Sketching the terrain: Open educational resources for teaching and learning at the University of Cape Town. Cape Town: Centre of Educational Technology, University of Cape Town. Available at http://www.cet.uct.ac.za/files/file/OS%20Institutional%20report2%20_%20%20Final%20typeset.pdf
[129] Harley, K. (2011). 2010 – 2011 African Health OER Network, Phase 2 Evaluation: Consolidation and Sustainability. Research Report. Available at http://www.oerafrica.org/healthproject/HealthProjectHome/tabid/956/Default.aspx
[130][130] Adam, L., Butcher, N., Tusubira, F.F.T., and Sibthorpe, C. (2011). Transformation-Ready: The strategic application of information and communication technologies in Africa – Education Sector Study. Prepared for the African Development Bank, the World Bank and the African Union. Annex 4
[131] UCT automatically assigns to the author(s) the copyright, unless UCT has assigned ownership to a third party in terms of a research contract, in:
• Scholarly and literary publications

> *9.2.2 Author(s) of Copyright materials that are listed in clause 8.1[133] should seek permission from RCIPS, who on behalf of UCT, may grant permission for the material to be distributed under a Creative Commons licence.* [134]

The policy also indicates that an IP Advisory Committee is to be established to manage processes relating to IP for UCT. The policy focuses on adoption of open licences as a default for research and teaching related to software development at the university. Notable aspects of the updated policy also include IP related to the creation and licensing of films as a teaching learning medium/tool.[135]

The success of technology projects to date, is in part attributed to the success of the work at CET, senior level support in the form of policies and resourcing, and an institutional culture which enables innovation and supports departmental champions. However, this was also due to external funding that supported new areas of work and made experimentation possible. For example, academics have been incentivized through the provision of small grants. Support provided by CET includes the provision and support of online learning environments, staff development for teaching with technology, curriculum partnerships with educators, an open educational resource project, researching the use of educational technology, and teaching postgraduate courses on ICT in Higher education.[136]

The University of South Africa (UNISA) has also shown intent to embrace OER, and is in the process of developing an institution-wide OER policy. There are already several approved strategies, policies and plans which include OER. For example, In UNISA's Institutional Operational Plan 2012-2013, one of the action points under the goal of positioning UNISA as a leading ODL institution highlights the plan to 'develop a policy position on OER and migration plan'. The institution's ICT-enhanced teaching and learning strategy 2011-2015 notes that UNISA has mandated the increased use and production of OER as an integral part of being an ODL institution. Additionally UNISA's Curriculum Policy (November 2010) indicates its commitment to critically evaluating the appropriateness and availability of OER before prescribing text books.

• Paintings, sculptures, drawings, graphics and photographs produced as an art form
• Recordings of musical performances and musical compositions
• Course materials, with the provision that UCT retains a perpetual, royalty-free, nonexclusive licence to use, copy and adapt such materials within UCT for the purposes of teaching and or research
• Film.

[132] UCT assigns the copyright in a Student's thesis, to the Student author (or in the case of a work of art that is submitted for examination purposes to the IP Creator of the work of art), subject to UCT retaining a royalty-free right to publish a thesis in any form. Whilst the Student has the right to enter into agreements with the publishers who may wish to publish the thesis in whole or in part, the Student shall ensure that UCT's rights are acknowledged by the third party and maintained and shall with the consent of their supervisor(s) ensure that such publication is not in conflict with any past, or planned future, assignment of rights to another publisher, e.g. of a journal article, or other literary publication.

[133] 8.1 UCT holds copyright in:
• Banks of multiple choice test and examination questions
• Syllabuses and curricula
• Computer software developed at, or commissioned by UCT to support academic or research administrative processes or the general operational management of UCT
• All UCT produced publications (e.g. but not limited to The Monday Paper, Varsity, Research Report, etc.) including electronic media and content on the UCT websites
• Photographs and digital images taken by Employees for UCT media or publicity or specifically commissioned by UCT
• Specifically commissioned works and course materials that fall outside the scope of normal academic work
• Computer Software developed as part of a research project, unless assigned by research agreement to another party.

[134] University of Cape Town (2011). University of Cape Town Intellectual Property Policy.pp.15-16. Available at http://www.uct.ac.za/downloads/uct.ac.za/about/policies/intellect_property.pdf

[135] University of Cape Town (2011). University of Cape Town Intellectual Property Policy. Available at http://www.uct.ac.za/downloads/uct.ac.za/about/policies/intellect_property.pdf

[136] Czerniewicz, L., and Carr, T. (2011). Growing Educational use of Technology in a Fast Changing Environment. Presented at Conference of Rectors, Vice Chancellors and Presidents of African Universities (COREVIP) from May 30 to June 3, 2011 in Stellenbosch, South Africa.

> *The sourcing and adaptation of OERs are a standard and supported part of the module design and materials development process. UNISA further commits itself to make materials, tools and management resources available to its staff, using the different licence types as proposed and governed by a range of OER providers….UNISA creates and supports processes for the identification and review of potential UNISA OERs and markets and celebrates its OER releases (for example in an open institutional portal)." (p.16).*

This commitment is further entrenched in the implementation plan for the Curriculum Policy: Implementing the Unisa Curriculum Policy (November 2011) , which addresses issues such as how due recognition is granted using both OER and copyrighted material.

The directives provided by these policies and strategies have seen the creation of OER at Unisa. UNISA Open is a portal to help students, staff and any OER users and producers worldwide to source high-quality resources. It provides a space for conversation and a starting point for those just making their acquaintance with OER. It also provides a showcase for the OER work being conducted at Unisa. UNISA Open contains UNISA's Institutional repository (UnisaIR), an open digital archive of scholarly intellectual and research outputs of the University of South Africa. The UnisaIR contains and preserves theses and dissertations, research articles, conference papers, rare and special materials and many other digital assets. UNISA OpenCourseware comprises a number of colleges and sections involved in OER production at Unisa. Unisa is also an anchor partner in the OER university (OERu) project. As part of the collaboration Unisa is developing one of the prototype courses Critical Reasoning.[137]

The University of the Western Cape (UWC) initiated the Free Courseware project and passed a Free Content, Free/Open Courseware Policy in 2005, aimed to remove institutional obstacles to the publication of OER.[138] However, there is little evidence that the policy has gained traction amongst faculty as the repository does not appear to have been updated since 2008 and there are only nine courses available. UWC also developed their own free software learning management system (KEWL) and in 2008 UWC was elected onto the Board of the OpenCourseware Consortium.

Regenesys Business School, a management and leadership higher education institution, is the first business school in the world to offer free business education from Certificate, Diploma, and Bachelors Degree up to an MBA level. The institution is making all its learning materials available online.[139]

South African institutions are also involved in other global and continental OER initiatives. For example, South African members of the OpenCourseWare Consortium (OCWC) are the University of Cape Town, University of the Western Cape and OER Africa[140] UCT has contributed 193 courses to the OCWC. See http://www.ocwconsortium.org/en/courses/browsesource/browse/source/2000 .

Another project which South African institutions are involved in is the Teacher Education in Sub-Saharan Africa (TESSA) initiative, a research and development initiative creating OER and course design guidance for teachers and teacher educators working in Sub-Saharan African countries. The TESSA initiative aims to achieve the MDGs and EFA goals and ensure that by the year 2015, every

[137] UNISA Open. About OER. Available at http://www.unisa.ac.za/default.asp?Cmd=ViewContent&ContentID=27755
[138] Keats, D. (2005). A Free Content and Free and Open Courseware implementation strategy for the University of the Western Cape. Available at http://ics.uwc.ac.za/usrfiles/users/8990060109/Strategies/freecourse-0.4.pdf
[139] Regenysys. November 2012. South African Business School launches free MBA education to the world. Available at http://regenesys.co.za/2012/11/south-african-business-school-launches-free-mba-education-to-the-world/
[140] OpenCourseware Consortium. Members in South Africa. Available at http://www.ocwconsortium.org/en/members/members/country/ZA

African child should have access to Primary education. In order to achieve these stated goals, Sub-Saharan African countries need four million trained teachers which cannot be achieved with the present conventional ways of teacher training. The TESSA initiative therefore stands on three pillars:

- Affordability and accessibility of ICT;
- OER philosophy which allows materials to be put the net and accessible to all for free;
- Research studies in cognitive science which gives current information on how learning takes place.

The University of Pretoria, the University of Fort Hare and University of South Africa University are part of the TESSA network.[141]

Thus, it is evident that OER is gaining much traction in the South African education context as awareness of OER grows. The work of organizations such as Siyavula, the Shuttleworth foundation and Saide appears to have been influential in driving OER uptake. Furthermore, institutions such as UCT and UNISA are particularly promising in the higher education space and will hopefully encourage other institutions to adopt similar approaches. Finally, government support for open initiatives through the various policies is likely to spur further developments.

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