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## About This Issue

A special issue on opening educational resources; plus regular features

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# The Other End of the Telescope: Opening Educational Resources in a South African University

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*South Africa*

This article explores the question of opening educational resources in the context of an educational technology unit, the Centre for Educational Technology at the University of Cape Town, in South Africa. It describes the impact of a high level of policy intervention for the transformation of higher education and of a diverse, multilingual student body, many with apartheid-inherited deficits in academic preparedness. In this context of very particular needs, the article questions the appropriateness of a focus on content alone, rather than educational process as it addresses particular contexts. Where content does become important is in the need to grow the volumes of Africa-relevant content, something that is inhibited by traditional publish-or-perish policies.

## Introduction

It has been MIT's bold and visionary move to open its courseware to the world at large that has framed the understanding of what is meant by open educational resources (OER). First of all, the emphasis is on content. Next comes the recognition of the contribution to global educational development that can be made through the expense and effort of putting course materials online.

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However, I write from an African perspective, and there are dilemmas posed to African countries by the success of ventures such as this one. The dominance of developed countries over the production of OER risks relegating developing countries to the role of mere consumers. Is there a risk that well-meaning development initiatives will end up by exaggerating the knowledge divide even further? How does an African country find its own voice in this arena? What perspectives on knowledge are privileged?

In this article I want to look at the question of opening educational resources (the progressive tense is important) from the other end of the telescope. What does this look like from the perspective of a small educational technology unit in a 22,000-student campus-based university on the southernmost tip of Africa? This offers an interesting case study, as South Africa's status as a middle economy country with its very wide wealth disparities means that the university combines its access to sophisticated technology with a need to address very serious issues of social and economic disadvantage.

When it comes to higher education policy, this manifests itself in an emphasis on the universities' central role in fostering the use of information and communication technologies (ICT) to build South Africa's place in the global information economy, even as national higher education and research policy stresses the need for universities to contribute to the redress of past inequalities and address national development goals. Paradoxically, this perspective on the one hand challenges the centrality of content as the focus of open educational resources, while at the same time raising very forcefully the need for more African content in both research and learning—the burning issue of the global knowledge divide.

What emerges is that the opening up of the educational process is as important as opening content and, in the second instance, the development of ICT for higher education raises issues about the range of publication outputs the university would need to support if it is to advance the knowledge commons.

## A South African Case Study: The Centre for Educational Technology

This article explores the ways in which this dynamic environment has impacted on the question of opening educational resources as it has been encountered in the Centre for Educational Technology (CET) at the University of Cape Town (UCT). CET was established in 2005 following five years of operation as the Multimedia Education Group (MEG). MEG was supported by external funding, predominantly from the Andrew Mellon Foundation, and when CET was established in 2005 it was a result of the university's decision to fund a larger unit with institution-wide responsibilities in recognition of the importance of ICTs for education as a core function

of the institution.

In common with a handful of other South African universities, CET is situated, not in a technology department, but in the Centre for Higher Education Development. This is evidence of the transformative role that the university perceives for the use of ICT in education. CET is involved in the development of a next-generation learning environment, and is a partner in the Sakai open source collaborative framework. The UCT version of Sakai, named Vula, was launched at the beginning of the 2007 academic year. CET supports Vula and other educational technologies for teaching and learning, working in partnership with the university community. It enables, promotes, and investigates the integration of learning technologies in teaching and learning at the University of Cape Town and in higher education, and works in curriculum development, staff development, and research.

### **Transformation in South African Higher Education**

The context in which CET operates is a challenging one. Only 13 years on from the devastation wrought on South Africa's education system by the implementation of apartheid ideologies, the keyword that continues to dominate policy and practice in universities is 'transformation.' Higher education policy in the first decade of democratic government has aimed at the rationalisation and consolidation of the higher education institutions, combined with redress in the form of increased access for black students, resulting in transformation not only of the racial profile but also of the dominant culture of the universities. As a result, the higher education institutions have encountered and continue to encounter high levels of uncertainty and change.

As the universities face outwards into the community, they are under pressure to contribute towards the social and economic development of a rapidly-changing country through their research and their output of suitably qualified graduates. Within the institutions, higher education policy exerts considerable pressure for the university system to redress past inequalities, both in transforming the demographic profile of students and staff and in becoming more responsive to the needs of a diverse student body and the social realities that this diversity reflects.

The policies that have framed this transformation process emphasise the need to foster an Afro-centric approach while at the same time meeting the demands of global competitiveness. Considerable importance is placed on the need to align policy with changing ICTs in a global knowledge economy. As the 1995 White Paper on Science and Technology states, 'the ability to maximise the use of information is now considered to be the single most important factor in defining the competitiveness of countries as well as their ability to

empower their citizens through enhanced access to information.' Sentiments such as these are repeated in higher education policy, making it clear that the universities are expected to fulfil a crucial role in contributing to the development of an information society in South Africa, through research and teaching.

### **Scaffolding Learning for a Diverse Student Body**

In this dynamic context, the impact of the transformation process manifests itself in a number of ways in the classroom: as a result of economic and social disadvantage and of the inadequacies inherited from the apartheid education system, many students entering higher education have deficits in academic preparedness; there is great diversity in language background in a country with 11 official languages; and, compounding these challenges, large classes are a feature of undergraduate courses. This, in turn, influences the ways in which the use of ICT for educational purposes is both conceptualised and managed, making the question of openness more complex than it might be in a more homogenous cultural context.

An educational environment as demanding as this one requires from an educational technology unit such as CET a primary focus on providing scaffolding for learning delivery, and, while this varies across disciplines and at different educational levels, both the content and its framework need to be geared to very specific needs. In these circumstances, 'content' cannot be narrowly defined as simply subject matter, and opening educational resources becomes more than placing learning material online; rather, the question of openness relates to learning and knowledge at a deeper level. Everything is context-laden and driven by the purpose of a particular intervention; this requires deep intellectual engagement with the nature of learning. The issues that have to be addressed are fitness for purpose, context, and effective integration. When it comes to opening and sharing resources, the value that emerges from a context such as this relates to the interface and techniques being developed in order to teach particular concepts, rather than content alone.

### **Opening Resources**

The motivation for driving openness exists in CET, as a result both of its role in Sakai and as a result of the conditions of its genesis and early history. The donor funding that supported MEG, as an earlier incarnation of CET, gave it an explicit mission to report findings and make its learning open and transparent, releasing resources and making its findings open to the community. The commitment to openness has been carried over into CET, although the changed context of a university academic department raises interesting questions about the creation of open content resources within the policy

context of a South African university.

There is a gap between the community-focussed discourse of a reflective practitioner required in opening up educational resources and the theorised and individualised discourse imposed by policies for academic advancement. These make promotion dependent on publication in international (read Northern) journals and monographs in a global academic publishing environment that is all too effective in isolating and marginalising voices from developing countries. South African research publication policy, driven by such publish-or-perish metrics, places considerable pressure on academic staff to keep up a high level of output in scholarly journals, predominantly in the global North. This policy framework, built as it is on the idea of individual effort and 'originality,' also works against the collaborative development in communities of practice that is an important component of ICT-driven education and is also reflected in research policy at a national level.

### **Bridging the Knowledge Divide: Impact of the Sakai Community**

Looked at through this lens, the question of content becomes very important. The African continent generates only 0.4% of global online content and this drops to 0.02% if South Africa is excluded. There is a fundamental need to develop policies and strategies that could grow the output and effective dissemination of Africa-based research in and from Africa, for African development, and in the most appropriate media and formats. A change is needed in policy and global politics to enhance the dissemination of African research as the reservoir of locally relevant content that could feed into open educational resources and balance out the current dependency on imported content.

However, there are possibilities emerging from the creation of courses on the Vula platform. This has generated an explosive growth in ICT-assisted courses: over 500 course sites have been set up, with more being added every day. At present more than 60% of registered students have access to courses on Vula, while on a busy week day more than 5000 unique visitors log in. The very positive student reaction has resulted in pressure on departments to provide online learning resources, and there is evidence of independent student creation of online content. In a lively presentation at the Sakai conference in Amsterdam in June 2007, Joseph Hardin charted the considerable potential that he saw in the worldwide Sakai community for the generation of open courseware, outlining developments at the University of Michigan for creating a courseware publishing tool in Sakai. What is of particular interest is what he calls the 'long tail of education' where students are active participants in courseware development.

This tallies with what is happening at UCT, where some of the most striking potential for the growth of open courseware comes from participatory programmes that rely on a high level of student participation. Specific examples include a simulation exercise in Public International Law, in which students are contributing to an African perspective in a field in which the cases are predominantly African, yet there is little or no published material from an African perspective. Another is the use of a wiki for the creation of a collaborative classroom resource in the History of Economic Thought.

### **Conclusion**

From a South African perspective a successful approach to the opening up of educational resources would thus involve awareness-raising in the higher education sector and in government of the need to develop policies and strategies that address opening up of the dissemination of African knowledge from scholar to scholar and from scholar to learner and back again. A project to explore this potential at UCT, funded by the Shuttleworth Foundation, commenced in mid-2007. This will explore how ICT is changing scholarly communication; how both research outputs and open educational resources can be fostered and grown, and how best to combine content and process in producing effective educational resources. □

### **References**

- Benkler, Y. (2006). *The wealth of networks: How social production transforms markets and freedom*. New Haven & London: Yale University Press; [http://www.benkler.org/wealth\\_of\\_networks/index.php?title=Download\\_PDFs\\_of\\_the\\_book](http://www.benkler.org/wealth_of_networks/index.php?title=Download_PDFs_of_the_book) .
- Bloom, D., Canning, D., & Chan, K. (2005). Higher education and economic development in Africa. Washington, World Bank; [http://siteresources.worldbank.org/EDUCATION/Resources/278200-1099079877269/547664-1099079956815/HigherEd\\_Econ\\_Growth\\_Africa.pdf](http://siteresources.worldbank.org/EDUCATION/Resources/278200-1099079877269/547664-1099079956815/HigherEd_Econ_Growth_Africa.pdf) .
- Castells, M. (2000). *The rise of the networked society* (second edition). Oxford: Blackwell.
- Chan, L., & Costa, C. (2005). Participation in the global knowledge commons: Challenges and opportunities for research dissemination in developing countries. *New Library World*, 106(1210/1211), 141–163.
- Czerniewicz, L., & Brown, C. (2005). Access to ICT for teaching and learning: From single artefact to inter-related resources. *International Journal of Education and Development Using Information and Communication Technologies*, 1(2), 42–56.
- Czerniewicz, L., & Brown, C. (2006). The Virtual Mobius Strip: Access to and use of Information and Communication Technologies (ICTs) in higher education in the Western Cape Cape Town, Centre for Educational Technology, University of Cape Town.
- Czerniewicz, L., & Carr, A. M. (2005). Growing communities of practice among educational technology researchers and practitioners in development-oriented contexts: Linking

- local and global debates. *International Journal of Education and Development Using Information and Communication Technologies*, 1(2), 3–24.
- Czerniewicz, L., Ravjee, N., & Mlitwa, N. (2006). Higher Education Monitor: ICTs and the South African higher education landscape. Pretoria, Council for Higher Education.
- Department of Arts, Culture, Science, and Technology. (1996). White Paper on Science and Technology; [http://www.dst.gov.za/publications/white\\_papers/Science\\_Technology\\_White\\_Paper.pdf](http://www.dst.gov.za/publications/white_papers/Science_Technology_White_Paper.pdf) .
- Department of Education. (2003). *Policy and procedures for measurement of research output of public higher education institutions*. Pretoria: Government Publications Department.
- Gevers, W., & Mati, X. (Eds.). (2006). *Report on a strategic approach to research publishing in South Africa*. Pretoria: Academy of Science of South Africa.
- Gray, E., Bruns, K., & van Schalkwyk, F. (2004, Sept.). Digital publishing and open access for social science research dissemination: A case study. Paper presented at the Codesria Conference on Electronic Publishing and Dissemination, Dakar; [http://www.codesria.org/Links/conferences/el\\_publ/grey.pdf](http://www.codesria.org/Links/conferences/el_publ/grey.pdf) .
- Gray, E. (2007). Achieving research Impact for development: A critique of research dissemination policy in South Africa. A policy paper produced for the International Policy Fellowship programme, 2006–2007. Open Society Institute, Budapest; <http://www.policy.hu/gray> .
- Hall, M. (2005, March). Freeing the knowledge resources of public universities. Unpublished conference paper: Knowledge to Address Africa's Development Challenges. University of Cape Town.
- Hardin, J. (2007, June). Open courseware—pedagogy, social practice, and tools. Paper delivered at the 7th Sakai conference, Amsterdam; <http://confluence.sakaiproject.org/confluence/x/SKk> .
- Jaffer, S., Ng'ambi, D., & Czerniewicz, L. (2006). The role of ICTs in higher education in South Africa: One strategy for addressing teaching and learning challenges. Paper presented at the e/merge 2006 online conference, University of Cape Town.
- Jenkins, H. (2007). *Convergence culture: Where old and new media collide*. New York & London: New York University Press.
- Rip, A. (2000). Fashions, lock-ins, and the heterogeneity of knowledge production. In A. Kraak (Ed.), *Changing modes: New knowledge production and its implications for higher education in South Africa*. Pretoria: Human Sciences Research Council.
- Teferra, D. (2004). Knowledge creation and dissemination in African universities with special reference to ICT. In P. T. Zeleza & A. Olukoshi, *African universities in the twenty-first century, vol. II, knowledge and society*. Dakar, Codesria.
- Van Ameringen, M. (1995). *Building a new South Africa vol. 3: Science and technology policy: A report from the mission on science and technology policy for a democratic South Africa*. Ottawa: International Development Research Centre.
- Zeleza, P. T. (1997). *Manufacturing African studies and crisis*. Dakar: Codesria Book Series.

# The Virtual University Becomes a Reality

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This article describes a network among the Commonwealth's 28 smallest countries created to enhance the professional capacity of educators, developing new course materials, and enabling the transfer of courses and qualifications across borders. The focus is on topics such as entrepreneurship, tourism, professional development of educators, life skills, disaster management, and a range of technical and vocational subjects. The transfer of courses and qualifications among countries requires having in place an agreed framework of quality assurance and unit standards. Workshops, or "boot camps," are run by a group of team leaders selected from the participating countries. After feeling "left behind," these countries are now putting the Internet to use in connecting themselves with other small states, sometimes more than 10,000 km away.

"Create a network of educators that spans 28 of the world's smallest countries and, in some cases, the world's most remote countries," could have been the way Ministers of Education made their request to the Commonwealth of Learning ("COL") in 2000.

Ministries of Education in small and island states, led by Seychelles, The Gambia, Mauritius, Namibia, Samoa, and St. Lucia expressed their concern in 2000: With the rapid growth of the Internet and eLearning, our countries might be left behind. COL was asked to conduct a review of possibilities these countries could implement to help advance their education systems and increase their course offerings. Since 2003, when Commonwealth Ministers of Education approved COL's recommendations, COL has worked to engender a

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