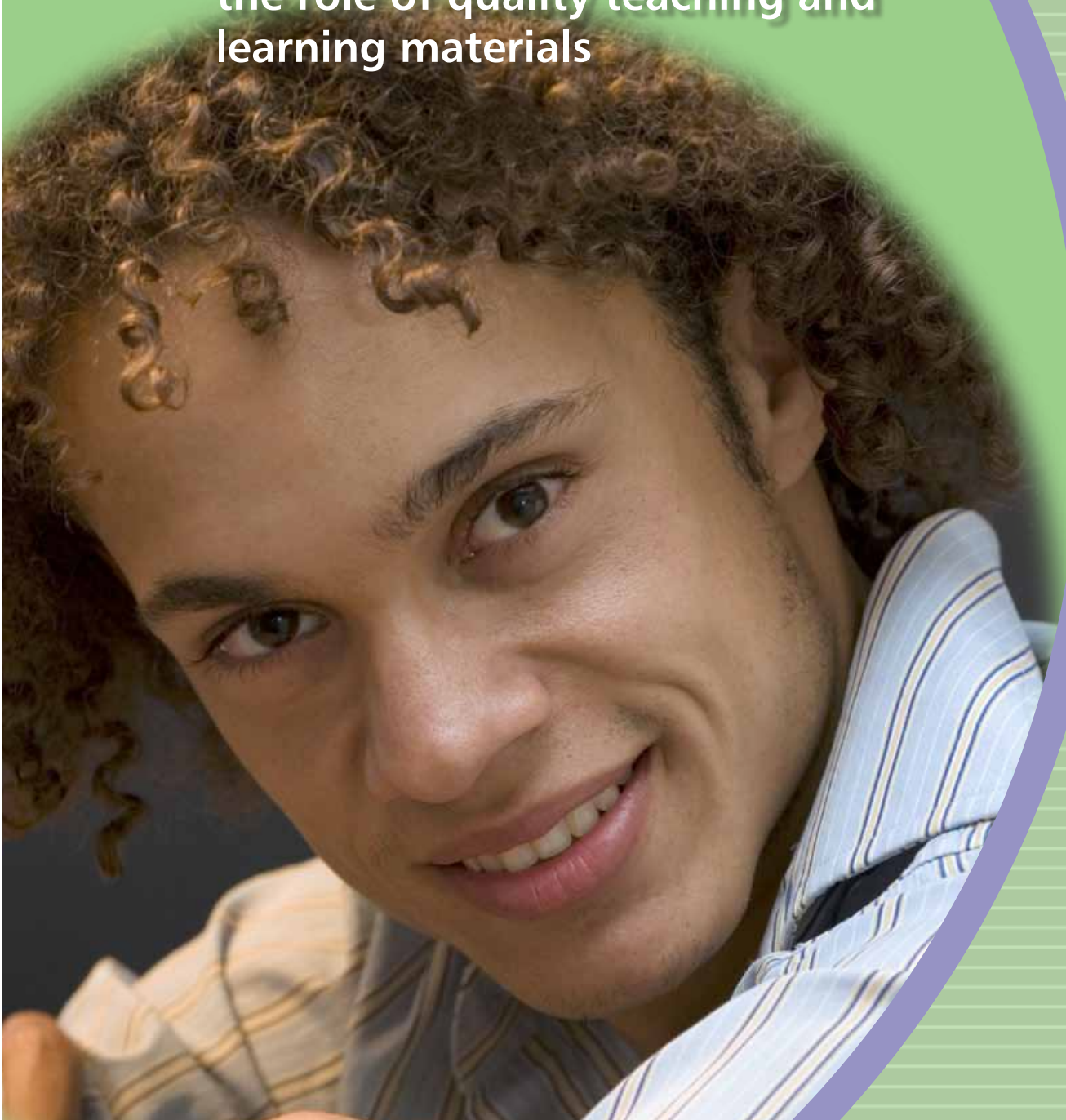# Keynote Address:

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Quality in higher education and the role of quality teaching and learning materials

Quality and Quality Assurance in Higher Education:
The Opportunities and Challenges of Open Educational Resources

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1. Gone with the wind...

Gone are the days when research findings were guarded treasures and the methods used were well kept secrets. Today, researchers publish their findings in journals very widely and dissemination of this information helps the other researchers in the same or related field of study to build on the work that has already been accomplished. Further, journal subscriptions are becoming more affordable and ICT has revolutionised quick access to information to the extent that access to information is almost instantaneous. Impact factor, citation index, commercial arrangements including commercially funded research, IP etc influence these developments in different ways but in general there is more openness to share the outcome of the research work. The centrality of peer review has also made an impact on making research findings more accessible. A number of free e-journals have emerged and nowadays researchers more readily discuss their work with other researchers and engage in constructive collaboration across the world. If we draw a parallel to these developments in the way learning resources are developed, shared and used that is where Open Educational Resources (OER) come into the picture.

With developments in ICT, more and more material of educational value is freely available to people. During the last ten years, due to the efforts of intergovernmental organisations such as UNESCO and COL, supported by donor funding, providing educational content to users freely has gained significant momentum. The number of institutions and consortia of institutions that make their learning resources free and the amount of resources that are made available are increasing. Massachuetts Institute of Technology (MIT), for example, has successfully run its OpenCourseWare (OCW) project since 2001/2002, by offering its course content online free. Its website provides free material for around 1900 courses. Many premier institutions including Yale and Carnegie Mellon have joined this movement. Here, in South Africa, I am aware of the work being done by the University of the Western Cape and the University of Cape Town through their membership in the Open-Courseware Consortium. It involves collaboration with more than 200 higher education institutions around the world to create and share free educational resources. The emphasis in these developments is 'free', 'open', 'collaborate' and 'share', and these are the defining words of the new movement called Open Educational Resources (OER).

2. Defining OER

UNESCO defines OER as educational materials (usually but not always digital) that are offered freely and openly for anyone to use and under some type of license to re-mix, improve and redistribute. In fact the UNESCO Forum (2002) on *The Impact of Open Courseware for Higher Education* was instrumental in coining and popularising this term. The *Second Global Forum on International Quality Assurance, Accreditation and the Recognition of Qualifications in Higher Education*, organised by UNESCO in 2004, elaborated the list of OER to include: 'learning resources; courseware, content modules, learning objects, learner support and assessment tools, online learning communities; resources to support teachers; tools for teachers and support materials to enable them to create, adapt and use OER, as well as training materials for teachers; and other teaching tools; and resources to assure the quality of education and educational practices.' This Forum acknowledged the potential of OER to increase the quality

of information and teaching but also cautioned that if OER is created in only a few countries and disseminated to the others, it might constitute a threat to cultural diversity.

3. Benefits of OER

The forums, workshops and online discussions facilitated by UNESCO, COL, OECD and IIEP during 2004-2007 have identified many benefits of OER and they are well accepted. The discussions have also identified risks and barriers. The list developed by OCED (2007) is comprehensive and self explanatory:

OER Incentives	OER Barriers
Individual Gaining access to good quality, flexible materials and enabling exchange with colleagues Reducing costs for students Keeping students/alumni up to date on self-study basis Outreach to disadvantaged groups Collaborating with a wider group Showcasing and promotion of work Ethical/moral duty	**Individual** Lack of time – heavy teaching schedules Lack of innovation in pedagogy Lack of capacity and knowledge, leading to fear of loss of control Lack of reward system and incentives Little management or peer support Lack of appropriate tools
Institutional Cost reduction, leverage of public funds Experimenting with new business models Creating alternatives to commercial materials Encouraging innovation Quality enhancement and diversity Public relations/showcasing Attracting future students Continuous education of alumni/students Ethical/moral duty	**Institutional** No clear OER policy Lack of capacity and financial resources Fear of competitors and loss of competitive advantage Difficulty in acquiring/implementing OER production Constraints of academic culture Constraints of existing production tools

Of the various benefits listed above, the cluster of benefits around public good needs attention due to the uncomfortable question it might lead to.

4. Serving the Public Good

OER increases accessibility of teaching-learning materials to anyone anywhere. This feature can help the expanding higher education systems of the developing countries that have to cope with the huge problem of providing for adequate learning resources of good quality. Even in well resourced countries, higher education institutions face significant challenges related to providing increased access to learning resources, while containing or reducing costs. OER may have a partial solution for them. Also, the benefits that the socially disadvantaged groups of the society such as women and rural population can get from open knowledge should not be under estimated.

As the UNESCO Forum pointed out 'Access to high quality educational materials is too often limited to those who can afford to attend an institution of higher learning or buy published materials outright. In contrast, a trend toward *open* knowledge and *free* availability of high quality teaching and learning materials will equalize access. Educators, including those in less-

advantaged areas where resources are at a premium, can capitalize on such materials to enhance their courses and improve their teaching, benefiting many students at a time'. Acknowledging these broad benefits, many institutions that are active in contributing to the OER initiatives consider their work as serving the public cause of higher education. It will in fact help institutions to demonstrate that they respond to governments' demands for accountability in terms of public investment in HE.

However, phrases around 'public good', 'free', 'open' etc associated with OER may raise an uncomfortable question: *How do we know that what is free and open is not second grade and substandard?*

5. Does 'Free' mean 'Second Grade'?

To be able to demonstrate that OER are of acceptable quality, we need to consider what quality assurance mechanisms can do to undo the appearance of being second grade. It's with this acknowledgement that the UNESCO/COL deliberation during 2005-2007 about 'The Way Forward' included priority in QA. It stated: "If the OER movement is to take hold widely, the resources must be – and be seen to be – of high quality. When information is taken from websites worldwide, the user often lacks a frame of reference for determining the quality of the information being accessed. The OER movement would benefit from an exploration of current international quality assurance mechanisms and general guidelines and, potentially, from linking with quality-assurance agencies.

UNESCO could establish a connection with the lead agencies for quality assurance in education on behalf of the members of the international community on OER, and promote the development of guidelines for OER quality assurance."

It is true that there would be more confidence in and acceptance of the content of OER if there is some quality assurance of OER. This has implications for quality assurance (QA) at two levels – internal institutional QA and external QA.

6. Implications for Internal Institutional Quality Assurance

There is no debate about the fact that attention to OER itself has made significant impact on the institutional members who have been a part of the OER initiative. The spirit of peer review that has a central place in research gets extended to learning resources through OER. Authors of OER become conscious of the fact that their materials are scrutinized and used by a large audience around the world and this pushes them to review and update their materials as necessary.

At the institutional level, the ones that have taken the OER initiative seriously have strengthened the internal institutional quality control. The OECD report notes that 'A policy of open sharing challenges institutions to put their houses in order – to better manage and archive materials, for example – which in turn will stimulate internal improvement, innovation and re-use (Final Report of the OECD Forum on OER, 2007).' As a result, institutional quality controls for development and review of learning resources take new dimensions.

But this is not enough to create a sustainable institutional quality assurance mechanism. In spite of the pioneering efforts by a number of higher education institutions, general awareness of current OER initiatives among institutional leaders and policy makers is not very

encouraging. Academia are not familiar with availability of material. Technology, although a facilitator, continues to be a barrier in many developing countries.

The current OER initiatives are still in the project mode and they require substantial funding either from the donors or from the institution that runs the project. When external funding stops, sustainability of the projects will become questionable and it is important to stabilise and consolidate these efforts before such a situation arises. The institution or consortia based OER initiatives should quickly move to embed the policies and support structures in the ongoing activities of the institution (s).

For example, it is agreed that OERs have the potential to change teaching-learning practices since they change the way educational materials are developed, selected, modified and made available to students. It is also well established that new collaborative learning practices are emerging with free availability of quality materials and that they facilitate educators towards developing and learning new pedagogical models. But how do these changes influence the teaching-learning policies of an institution? How are they considered in identifying priorities for faculty development, technological updates, assessment guidelines, curriculum review etc? In other words, the institution will have to ask itself a number of policy questions on the place it wishes to give to OER, the importance it wants its faculty to attach to OER, the amount of resources it is willing to invest in supporting OER etc.

At this juncture, we need to note that OER initiatives vary a lot in the way they operate and the internal quality controls they have.

7. Variation in the Internal Quality Controls

At one extreme, OERs are just learning materials with educational value added to a repository of materials that are made available to people to use, adapt and share. The OER platform does not give any guarantee for the quality of the materials available. At the other extreme the materials have a well established structure and built-in quality controls. There are projects that are built around courses offered in an institution and the materials made available in that model may comprise the course content or materials used for teaching certain courses in that institution. OERs of that category would allow a peer in any part of the world to see how the selected courses are offered in the institution that provides the OER materials. The materials would provide information to the users about the difficulty level of the material, pre requisites, and expected learning outcomes. The course material undergoes the regular quality controls of the university.

For example, MIT OpenCourseWare (OCW) learning materials are organized as courses. MIT faculty create these materials for their classroom teaching and then offer them for worldwide publication on OCW. For any given course, the materials convey the parameters of the course's subject matter and pedagogy, and ideally represent a substantially complete set of all the materials used in the course. This is not how the other projects work.

The Multimedia Educational Resource for Learning and Online Teaching (MERLOT), another well known OER initiative functions as a repository of learning objects. Its strategic goal is 'to improve the effectiveness of teaching and learning by increasing the quantity and quality of peer reviewed online learning materials that can be easily incorporated into faculty designed courses'. Therefore, it does not offer the full course content online for free, but provides materials that can be used for the courses.

The quality control at MERLOT is through the Editors Council and the 18 Editorial Boards, one Editorial Board for each discipline community. The Editors Council is made up of the Editor from each discipline community within MERLOT. Currently there are 18 Editorial Boards, with more planned for the near future. All MERLOT Editorial Board Members are faculty and they lead the development of MERLOT's 18 Discipline Communities. These boards are comprised of Peer Reviewers, Associate Editors and Editors. (http://taste.merlot.org/whoweare.html)

Carnegie Mellon University and Rice University follow slightly different approaches built around development of courses and course materials. The former follows a model where courses are developed by teams composed of learning scientists, faculty content experts, human-computer interaction experts, and software engineers. They are then available online to both students registered with the University as well as to independent learners. Those who would like to receive credits for completing course, have to register to do the course with an instructor.

Rice University follows another model where tools and author guidelines help authors to choose building blocks from the project website and build their own courses. The materials thus developed are then added to the OER repository called 'Connexions'. The repository has quality markers called 'Lenses' that 'enable both organizations and individuals to give their stamps of approval to content in the repository, allowing for user-driven quality control of modules and collections. Through these lenses, users can provide their own tags and comments for items in the repository.' Lenses are available in different forms and for example, the 'Endorsement Lenses' are Organizations, such as professional societies and they 'can create endorsement lenses containing content they have carefully reviewed and deem to be of high quality. Organizations use their own criteria for endorsement and are encouraged to describe their selection process on the lens home page.' (http://cnx.org/lenses)

For the question on quality control and identifying quality material, Connexions states: '... In order to help users find the materials they need, we are developing a system that enables anyone (individuals, institutions, professional societies, and so on) to set up their own review process that sifts through the entire repository and directs users to the content judged to be high quality. It is basically analogous to the "peer review" systems used in academic journals, but more scalable. We are currently experimenting with a range of different approaches, including ......" (http://cnx.org/help/faq).

In summary, the OER initiatives vary in their purpose, deployment, internal quality controls and the assurance they provide about the quality and comprehensiveness of the material they make available.

8. Implications for External QA

Given this situation, how will external QA consider OER? Will it be one of the hundred and one things the QA body has to check? Will it be along the lines of investigating the role of 'library and information centre' or 'flexible and blended learning' in quality teaching-learning? What sort of questions will it ask?

At a broad level, building on the objectives of OER, the questions would be like: What are the purposes of your OER initiative? What are your plans to achieve your purposes? How do you implement those plans? How do you know that your implementation is effective? How do you monitor progress? How do you make improvements?

More specific questions would be on:
- Is there an efficient institutional model for OER development: Is it realistic?
- Is the model backed by a sound institutional policy? Are the responsibilities and accountabilities clear?
- What resource has the institution invested or will continue to invest for the OER initiative? Is it sustainable?
- Is there a shared understanding of the initiative among the stakeholders and is there overall support?
- What are the support systems in place for students and how effective are they? (There are OER initiatives where users can ask questions or request clarification from the course instructor or other users through e-mail or discussion forums.)
- Are the communication channels and feedback mechanisms working well in the OER initiative? What does the user feedback analysis indicate? How has the institution acted on the feedback?
- How does the institution satisfy itself that the OER initiative's outcomes are of good quality?
- Who is involved in monitoring achievement of targets?
- What are the development opportunities for staff who are involved in this initiative?

It is difficult to move beyond this generalisation without a fuller appreciation of what the OER initiative is all about in a particular institutional context. In spite of the variation in the models and quality controls, the successful OER initiatives have one thing in common (apart from the 'free' and 'open' characteristics) - these projects do not lead to credits or qualifications or awards. That raises the next question – Does 'no certification' mean no (confidence in) quality (of OER)'?

9. Does 'no certification' mean 'no quality'?

Until a few years ago educators clearly said that OER is about making quality educational content freely available. The expectation was that the users will exercise high level of autonomy and choose the materials that would be appropriate to their purposes. The purpose was not to offer a formal qualification or certification. But today there are mixed signals about considering a certification.

In 2002, when OER movement received a lot of attention there was clarity among the pioneers that '...OER is not a degree-awarding strategy – no one has suggested that OER take the place of institutionally supported open and distance learning' (Johnstone, 2002). However, in recent years there have been queries about the possibility of certification or validation.

Those who are not comfortable with this idea point out that this will lead to rampant certification and eventually will breed mistrust between employees and employers. They argue that, for people eager to learn, the utilitarian view of certified education is not important. Supporters of certification for OER education argue that there should be institution-issued certificates for people who have finished courses through OER projects. However, institutions that run these projects explain why that is not possible.

For example, the MIT website states that:
- 'OCW is not an MIT education.
- OCW does not grant degrees or certificates.
- OCW does not provide access to MIT faculty.

- Materials may not reflect entire content of the course.' (http://ocw.mit.edu/OcwWeb/web/about/about/index.htm

Connexions require users who seek certification to register with an instructor and it has financial implications for the users. If institutions that offer OER are not ready to provide certification, will new institutions emerge to provide certification?

A number of media articles in the early stages of the OER projects wondered whether OER will affect the enrolment to regular courses and whether it will affect the revenue to the institution. Those doubts have been proved to be wrong; institutions have used their OER projects to serve public cause as well as to raise their visibility and branding. As a result, the revenue generation capability of the institutions only increased. Will certification related doubts come under this category of misplaced caution?

OER has a long way to go before this debate needs to be resolved but if there is a possibility of taking that road to certification there is no doubt that it would involve more quality assurance. Internal quality controls need rigorous approaches and external QA will have to consider the challenges along the way as the system develops.

10. Challenges to External QA
(a) Black Cat in a Dark Room
There still isn't a great clarity about what good OER initiatives should look like. It is a very young and still growing innovation. What can the QA agencies expect if they want to bring OER into their attention? With all good intentions, will they end up searching for a black cat in a dark room while such a cat does not exist at all?

(b) Is it as simple as it appears?
If we move a little beyond the black cat, what can we see? Some think that OERs have a very exciting role to play in promoting access to quality material. Others think that the present mechanisms of quality assurance around OER are not adequate to assure acceptable levels of quality. Both perceptions are true to varying degrees in different contexts.

Whether offered by the conventional institution-based projects or by communities of practice or by consortia of institutions dedicated to promoting OER, it is true that OER introduces new structures to the higher education environment. The range of new variables associated with OER poses potential challenges for the validity of the traditional method of quality assurance. How differently do we have to apply the quality assurance processes on OER aspects? Are they as simple as they appear to be?

(c) The Due Place
OER should make a respectable place for itself. Do we know what that is now and how that is likely to change in the next few years?

OERs can be used for many purposes. All the purposes listed in the table in page 3 are worthy of support. If QA agencies start noticing these purposes, that itself will generate significant changes in institutional cultures. External QA can ask the right questions about the institutional policies for the development of OER, faculty time and development, etc but will still have to locate its questions in the institutional context and the place the institution gives to OER. Is there clarity now about the 'due place' for OER in the institutional context?

Locating OER in the institutional context is similar to understanding the institutional policies for professional development programs. Institutions vary in the way they support their staff for professional development. Some institutions have professional development units with full-time staff who have the expertise to design and deliver professional development programs. Some are not big enough to have dedicated professional development units; they might have a policy to identify the needs of the staff and then they make provision to sponsor staff to externally organised activities. Both approaches are acceptable and their effectiveness depends on the institutional context. This is true for OER as well. Institutions might decide to promote just the use of OER or they might encourage staff to become active contributors and invest on an institution-based OER project. There are no right or wrong steps in making these choices.

While talking about the due place for OER, one should also be aware of the variations in the national context and its influence on the perspectives of the QA agency. QA agencies differ in their approaches to accepting new ways of teaching-learning. There are examples of progressive QA bodies accrediting online institutions using fully online investigations. There are also very traditional QA bodies that insist on physical infrastructure such as building area for online programs. Some QA agencies have very strict requirements about student-staff ratio even for online programs. In spite of the wonderful impact ICT has made in flexible and blended learning, the reality is that in these QA systems the argument that, more students can be supported effectively with less number of teachers in a technology enhanced environment, will not sell. These agencies will find it difficult to give OER its due place. But then, these are the QA bodies that have a differential response to DE as well and they consider DE as a poor cousin, a second rate educational option, although DE is well accepted as main stream delivery in most other countries. The countries that haven't yet accepted DE as quality education need some more time to experience the positive benefits of OER.

(d) Growing together
External QA is built on internal institutional QA and in fact they should grow together. Unless the institutions are able to spell out what they want to achieve, how they want to go about, for what end results and how they propose to monitor progress, external QA will have difficulty in judging whether the institutional claims and intentions related to OER are in the right track.

While scoping the 'what do I want to be?', 'Blue sky' thinking is good but institutions need to have their feet on the ground. Not all institutions can afford to be in the frontline of OER developments and at any given time an institution should plan its targets in a phased manner and decide what position it wants to take w.r.t. creating and or using OER in the next three to five years, and accordingly develop its plans. This realistic picture is essential for external QA to be successful in innovative areas like OER. For the more traditional areas there are well established norms and expectations but for innovative areas such as OER, the understanding of the innovators and their efforts to achieving the goals are important and external QA has to start from what the institution sets forth to do.

QA agencies have a number of roles; they assure, control, and promote quality. To assure quality, both parties need to know what is it they want to achieve. To control quality, both parties need to know what should be avoided. To promote quality they should know what the good practices are. In all the three roles, it's the academia who contribute to developing

policies and principles for both sides and it's the academia who are involved as peers in implementing those policies. Therefore, institutions through their academia have that advantage of shaping and developing QA the way they want to go. It is a question of consensus and reflecting on the collective stand.

(e) Good Practices
If contributing to OER is accepted as a good practice by all higher education institutions, then external QA processes will redefine their scope and boundary and require institutions to show that they are adhering to relevant good practices. While identifying good practices, a shift in focus towards embedding the creation and use of OER in the institutional culture and monitoring the integration through internal QA can be expected.

Successful OER initiatives have proved how quality can be sustained. Dissemination of this information to those who would be involved in external quality assurance is important because many experts in higher education who are likely to be involved in external QA may not be familiar with what could be achieved in successful OER initiatives.

There are many members in the higher education community who still look at distance education as a poor cousin to mainstream education. They would extend that image to OER as well. The task of changing that stereotypic image is going to be a big challenge. The concept that learning resources 'should be tightly controlled' and are deficient in so far as they deviate from this norm, has to be removed from the minds of everyone associated with the QA of OER. At the same time it should not lead to dilution of standards and setting lower expectations for OER. This calls for a well-informed group of experts, comfortable with the way OER works, to be involved in external QA.

(f) A new monster?
The QA outcome or the label or certification is something that gives teeth to QA in many contexts. What type of monster will it be to have that certification role in OER? What will it certify? Quality of OER or effectiveness of the QA processes of the OER developers? Will it certify the achievement of the users of OER (output)? Will it monitor 'the information provision' (process) and try to 'ensure some minimum threshold level' of the materials (input)?

Will there be more players in the certification – OER institutions to certify the achievement of the OER users and QA agencies to look at the QA processes of these OER institutions (OER developers or a new brand of institutions)? Will new Open Education Institutions (OEI) evolve in the future? We don't know. All these are possible scenarios.

(g) Transnational Qualifications Framework
The TNE Qualifications Framework of COL that has been developed to facilitate the Virtual University of the Small States might have some useful lessons to consider if a group of OER institutions or a consortium would like to consider how the certification might work.

11. Where to from here?
Given the early stages of development of the OER movement but considering the positive impacts it can make in serving public good, we can recommend the following actions:
- Institutions should spell out the place they propose to give to OER in the institutional context.

- Institutions should develop an institutional perspective, policies and procedures that augur well for that positioning.
- OER related policies and procedures should become mainstream and be embedded in the institutional culture.
- Internal institutional quality assurance w.r.t. OER should be strengthened and made explicit.
- Guidelines and manuals to disseminate the information to various stakeholder groups are necessary.
- Good practices that have worked well in OER should be identified and popularised.
- Faculty development programs and student support systems for OER should be given priority.
- Resource implications and sustainability issues should be given a serious reflection.
- Consortia of institutions might explore the possibility of developments similar to the *Transnational Qualifications Framework* to recognise the work completed by the users.
- Above all, promote the concept that 'certified education' should not be the target for innovation such as OER.

Questions for Discussion
1. Make a realistic assessment of what your institution can contribute to the OER movement and how you can benefit from OER.
2. What reasons would you give for your institution's participation or proposed participation in an OER project?
3. How will you promote OER among the various stakeholder groups of your institution?
4. To make OER an integral part of your institution's teaching-learning strategy, what are the challenges you will have to face?
5. What are your views about the institution-based certification for OER users?

Further Reading

OECD Forum on Open Educational Resources, Final Report, 2007

UNESCO (2002) Forum on the Impact of Open Courseware for Higher Education in Developing Countries: Final Report, Paris.

UNESCO (2004) Second Global Forum on International Quality Assurance, Accreditation and the Recognition of Qualifications in Higher Education: 'Widening Access to Quality Higher Education', Background Document, Paris.

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http://cnx.org/help/faq (accessed on 13 April 2010)

http://cnx.org/help/authoring/authorguide (accessed on 13 April 2010)