

Quality improvement of the use of OER in higher education - challenges and consequences

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A paradigm shift is emerging in universities especially regarding how personalized and collaborative mobile learning should be addressed. Recently three international benchmarking projects on quality of e-learning in higher education have been carried out by Lund University in Sweden. These showed that quality has to be valued from a holistic perspective and to a higher extent from learning dimensions and the learners' perspectives. Benchmarking was emphasized as a powerful strategic tool to assist decision-makers in improving the quality and effectiveness of organizational processes and thereby striving for excellence in the higher education arena. The studies also showed that other quality dimensions have to be considered, since web 3.0 and collaborative learning will radically extend learning environments. The classroom will move out into the world, instead of (as in earlier technical revolutions) the technology being integrated into the traditional classroom. Furthermore a recent Swedish project on OER in universities indicated that the issue of resource sharing opens up much wider questions of a structural and cultural nature. Collaborative, ubiquitous-/open learning and cloud learning environments in addition to demands from millennium learners entering universities will profoundly impact on the current university arena. This paper will elaborate on challenges and consequences on the emerging OER movement, especially regarding quality from the learners' perspective and the needs of a changing cultural educational paradigm towards openness, personalisation and collaboration and encouraging benchmarking in the use of OER and search for good practice.

Keywords benchmarking, collaborative learning, e-learning, oer, open learning, quality

Introduction

Major changes are taking place in European higher education today. The key challenges universities have to face are due to increased globalisation, openness and awareness of sustainability. Probably one of the strongest driving forces concerns the use and consequences of rapidly developing technology. In higher education a paradigm shift is emerging that mainly concerns the shift in how universities should address personalized and collaborative mobile learning with learning in focus. There are strong needs for changes in pedagogical and didactic approaches and where content can be reached with openness, networking and collaborative learning (UNESCO-COL, 2011a). Quality in education and research is the key to support innovation, creativity and excellence. Enhanced quality, increased openness and transparency are strong driving forces behind competition and collaboration in education and research. Universities have to both collaborate and compete in the international educational arena (HEFCE, 2010; Ossiannilsson & Landgren, in press). They are required to be competitive not just in terms of their educational, social, managerial and technological aspects, but they are also called to work globally as drivers for innovation and to contribute to sustainable development (HEFCE, 2010; Ossiannilsson, 2011, in press; Ossiannilsson & Landgren, in press). In this context, enhancing the performance of universities

and modernizing university must be on the agenda for all universities and decision-makers in Europe (Bates, 2010a) and internationally.

Findings from research on international benchmarking on e-learning in higher education indicate that quality in e-learning has to be valued in a holistic perspective and to a higher extent from the learners' perspectives and from learning dimensions (Ossiannilsson, 2011, in press; Ossiannilsson & Landgren, in press). In these projects benchmarking was emphasized as a powerful strategic tool to assist decision-makers in improving the quality and effectiveness of organizational processes and thereby reaching the position of the best international player in the higher education arena. The studies also showed that other quality dimensions have to be considered, since Open Educational Resources (OER), web 3.0 and collaborative learning will radically extend the extended learning environment. The classroom will move out into the world, instead of (as in earlier technical revolutions) the technology being integrated into the traditional classroom (Ossiannilsson 2011, in press; Ossiannilsson & Creelman, in press). Studies by Kroksmark (2011) and Kjällander (2011) indicate the same, i.e. that learning has to be considered in an extended learning environment and as stretched learning. Collaborative, ubiquitous-/open learning and cloud learning environments as well as demands from the millennium learners entering higher education will profoundly impact on the current university arena. In addition the global knowledge-based sustainable society will be of utmost importance (Ossiannilsson & Creelman, in press). The issue of resource sharing opens up much wider questions of a structural and cultural nature.

Within the above contexts reusable open content will be extremely important for educational institutions. They will have to support and plan, in a systemic manner, the development and improvement of curricula and course design, the development of quality teaching and learning material, the design of assessment tools for diverse environments and the organization of interactive contact sessions for students. OER can make a significant contribution to this process (UNESCO-COL, 2011a, b, c). Paralleled development on quality indicators can be foreseen with the use of OER, which is why the following subchapters discusses OER, culture of sharing, changing roles, rethinking international university education and beyond, quality and benchmarking and experiences on benchmarking e-learning. The paper ends with a discussion and conclusions.

Open Educational Resources - OER

OER was first introduced as a concept initiated by UNESCO (Hylén, 2005; OECD, 2007; UNESCO-COL, 2011a, b, c) as part of the millennium goals¹ and education for all.² The OER movement is today rapidly developing in most countries. In fact it started in 2002 at the UNESCO forum. Initially OER was defined as by The Hewlett Foundation, responsible for an extensive program on developing and dissemination of digital learning resources OER are:

Teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or re-purposing by others (Atkins, Brown & Hammond, 2007 p.3).

Atkins, Brown & Hammond (2007) have identified the benefits of OER by the concepts *equalize access* in relation to the learning and access to material, *understand and stimulate use sponsor* i.e. to understand and to stimulate the use of learning resources, *sponsor high-quality open content* i.e. foster quality in OER and finally *to remove barriers*. One of the main strengths of OER is developing learning resources

¹ <http://www.un.org/millenniumgoals/>

² http://www.unesco.org/education/efa/ed_for_all/

that can be used and reused for different learners, different purposes and in different contexts. Kanwar, Balasubramanian and Umar (2010) defines OER as:

*The phenomenon of OER is an **empowerment process**, facilitated by technology in which **various types of stakeholders** are able to interact, collaborate, create and use **materials and pedagogic practices**, that are freely available, for enhancing access, reducing costs and improving the quality of education and learning at all levels.*

The production of OER is not enough, more important is to develop practice and culture in the use of OER and gain from the benefits of OER from the learner's, teacher's and management's perspectives. There is a need to see a radical change in educational practice before any real change can be achieved and so the focus is shifting towards Open Educational Practices (OEP) and Open Educational Culture (OEC) (ICDE, 2011; OPAL 2011). OER can lead to major changes in teaching and learning but this can only take place in organizations that make conscious choices. Without policies and strategies from those in authority the mere existence of OER will not in itself lead to lasting change (UNESCO-COL, 2011a b c). According to UNESCO-COL governments play a crucial role in the development and implementation of OER. Given this role, governments are ideally positioned to encourage or mandate higher educational institutions to produce educational resources in open formats and with open licenses. In this context it is suggested that governments shall:

...support the use of OER through the revision of policy regulating higher education...contribute to raising awareness of key to OER issues...review national ICT/connectivity strategies for higher education...consider adapting open licenses framework...consider adopting open formats standard...support institutional investments in curriculum design...support the sustainable production of sharing learning materials and [sic] to collaborate to find effective ways to harness OER... (UNESCO-COL, 2011a, p. 7-8).

Open Educational Resources (OER) are defined by the OPAL project (ICDE, 2011; OPAL 2011) towards a practice orientation:

OEP are defined as practices which support the (re)use and production of OER through institutional policies, promote innovative pedagogical models, and respect and empower learners as co-producers on their lifelong learning path. OEP address the whole OER governance community: policy makers, managers/ administrators of organizations, educational professionals and learners (OPAL, 2011, p. 12).

OEC is understood as the entire concept of sharing and establishing sharing as default practice. Within the use of OER, which by per definition concerns free educational resources, there are licenses for use and reuse. Creative Commons (CC) licenses,³ the most common tool, provide simple, standardized alternatives to the *all rights reserved* paradigm of traditional copyright. With a CC - license, the copyright always belongs to the author, who always will be credited, but with CC allowance resources can be used for copying, distributing and also for commercial issues but only on the conditions specified and decided by the producer, using the four CC symbols in combinations. The principle of cc is *some rights reserved*.

³ <http://creativecommons.org/>

International initiatives

Over the past few years a significant number of initiatives and projects have emerged to support the development and sharing of OER. The concept of OER has its foundation and base in connectivism theory (Siemens, 2005) and can thus also be understood in the light of the movements on collaborative education and learning (Downes, 2011). Initiatives to be mentioned as examples are such as Peer-to-peer University (P2PU)⁴ University of the People (UoP),⁵ MOOC (Massive Open Online Course),⁶ the OER University (Macintouch, 2011), The OPAL project (ICDE, 2011), the OLCOS project (Geser, 2007) and DoItYourself (DIY) (Kamenetz, 2011) where the use of open and shared resources is fundamental to the course structure. OER Glue,⁷ provides an attractive and user-friendly framework for linking together OER into a course platform. Teachers are thus able to build their own course with OER. More commercial initiatives like Udemy⁸ offer similar opportunities for teachers to build courses with OER. UNESCO-COL has published proposals for policies and guidelines for the urgent implementation of OER around the world (UNESCO-COL, 2011a b c).

Culture of sharing

The development of open learning will make radical demands on teachers, students, leaders of educational organizations and policy makers (Holmes 2006). A culture of sharing course material will demand new structures of course design, course delivery and assessments as well as an increased focus on pedagogy and development of teaching and learning. Adoption of OER forces a radical review of how universities deal with these issues. Fully adopting OER and moving towards OEP and OEC will require teachers to relearn teaching and students to relearn learning. A culture of sharing and collaborative learning will thus become the new educational and learning paradigm (Ossiannilsson & Creelman, 2011).

The changes do not simply concern technical innovations or a technical revolution but more ongoing cultural educational and organizational innovation in new learning environments (Ehlers, 2010). Kroksmark (2011) and Kjällander (2011) refer to the new learning paradigm calling more for extended learning environments i.e. learning takes place in any environment and formal and informal learning are not separated, but integrated. Kroksmark (2011) even argues for stretched learning and stretched learning environments. The changing paradigm is expressed as more of a revolution than just a paradigm shift (Bates, 2010c; Bonk, 2009, Conole, 2011; Ehlers & Schneckenberg, 2010; Thomas & Brown, 2011). Wheeler (2011) more powerfully expresses it as *Doing Battle*. The battle referred to means that first there is a need to examine what education actually means, the word comes from Latin *educere* and means draw out from or to tap in some one's potential, not to control. Secondly new and emerging technology can liberate learners by extending, enriching and enhance learning opportunities, which also was articulated by Kroksmark (2011). Thirdly, stop managing learning and hand it over to the learners as with the P2PU, MOCC and the DoItYourself (Kamenetz, 2011) initiatives. *Doing battle* will radically change the teachers and the educational organizations and thus the educational and learning culture. Thomas & Seely Brown (2011) introduces the provocative and important new conceptual paradigm as *a new culture of learning*. At first glance it may seem simple, but they highlight how digital technology will profoundly change the future and the competitive edge. They also draw attention to the fact that the needs for a new culture of learning raise serious consequences; the only constant is that we are living in a world of constant change and we have to face the challenges. Success factors for collaborative learning are often highlighted as critical friends, communication, equality, ownership and

⁴<http://p2pu.org/>

⁵<http://www.uopeople.org/>

⁶<http://www.youtubr.com/watch?v=eW3gMGgcZQc>

⁷<http://blog.oerglue.com/>

⁸<http://www.udemy.com/>

intelligence gathering (Ossiannilsson, in press). Read underlines the OER movement as cultural and organizational drivers or as change agents (2011). The same scenarios are pointed out by Lane and McAndrew (2010) who discuss if OER are systematic or systemic change agents. Ossiannilsson (2011, in press) and Ossiannilsson & Creelman (in press) argue towards the same direction that the challenges facing higher education today mean that many of today's fundamental educational concepts must be questioned and some phased out as we move towards a greater emphasis on collaborative net-based learning and within cultural change and cultivating imagination for a World of constant change (Thomas & Brown, 2011). Thus, quality has to be considered and discussed within new lights and dimensions as will be in the next subchapter.

Changing roles

The concept of openness and all it entails questions some of the most fundamental traditions and beliefs in education and demand a thorough reassessment of the whole system. The teacher/university is no longer the only source of information nor the ultimate authority as the focus shifts from teaching to learning and the facilitation of learning. New roles are evolving for the university, the teacher, the student and even for the fundamental element of traditional education, the course.

The role of the university

Previously the prize possession of the university was its assembled knowledge. That was what students paid to gain access to. Of course this is still largely true today but a vital element has changed. The growth of OER and open courseware, in particular among some of the most prestigious institutions, shows that universities are prepared to freely share what was once seen as their most important assets. Today anyone can listen to lectures by top professors from Harvard, MIT, Oxford or Yale on a mobile device whenever and wherever they want. Teachers at smaller institutions are able to weave together courses using lectures and other resources from other universities. Students can access content from an unlimited bank of resources reflecting a greater diversity of information sources, viewpoints and research than would ever have been available from one single university. The reason for such prestigious universities freely distributing their content is of course not solely philanthropic. Many see the production of OER as strategic marketing and public relations investments and high profile initiatives like MIT's Open Course Ware have won international acclaim. Channels like iTunes U can awake worldwide interest in the university and this is particularly important to universities trying to create a global brand with affiliated universities around the world (OECD, 2007). Today content is everywhere and traditional quality filters such as publishers are no longer able to decide what we can read. In an age of content overload, context is king. Universities are discovering that their future role is to provide context and an arena (physical or virtual) for reflection, debate and research. By offering course content free online major universities are focusing on the ability of the teaching staff to provide context and guidance and that is what students will pay for. This is by no means a completely new role but it represents a major focus shift. By largely eliminating the need for traditional one-way input in the form of the lecture and focusing more on the learning process and collaboration universities need to even rethink the design of the campus. The concept of "flipping the classroom" means that lectures can be watched any time and that class time must be devoted to practice, coaching and experiment.

*Teacher Karl Fisch has flipped teaching on its head - he uploads his lectures to YouTube for his students to watch at home at night, then gets them to apply the concepts in class by day.*⁹

A clear example is how teachers are using the material on Khan Academy¹⁰ to enable teachers to spend less time lecturing and more time helping those with difficulties. The growth of OER leads to a redefinition of campus; fewer lecture halls and classrooms, more collaborative learning spaces, ubiquitous net access etc.

The role of the teacher

The teacher as a transmitter of knowledge is a deeply engrained concept in society. Teachers have always been highly self-sufficient and taken great pride in *my class*, *my course* and *my material*. Consequently they may view the use of open resources with suspicion, as it demands a completely new approach to teaching. As stated in Ala-Mutka, Redecker, Punie, Ferrari, Cachia and Centeno (2010) teachers need much more support and training to be able to fully exploit the opportunities of digital resources. Furthermore they argue that educational institutions need to support innovative teachers and provide incentives for creativity and innovation. Since OER and OEP build on a connectivist, collaborative view of learning, the role of the teacher becomes that of a mentor/facilitator/advisor and less of a knowledge source (UNESCO-COL, 2011). Encouraging students to shape their own learning and find their own sources of inspiration and knowledge is a new skill for many teachers and will demand a major investment in competence development in the coming years. Teachers will need to become lifelong learners themselves in order to enable changes in education and to be able to guide and inspire students (Ala-Mutka *et al.*, 2010). They will need to become part of a team of course developers together with educational technologists, media production experts, librarians and even students. Course content and learning outcomes will become more negotiable and student involvement in course design will undoubtedly increase. Holmes (2006) argues that this learner-centered approach is more dynamic, more flexible to the individual's needs, but moreover a greater challenge to traditional educational institutions. He stresses that this new paradigm leads to a perceived loss of control and this shift in power is painful and may pose some problems for teacher and for institutions.

The role of the student

OER and its consequences demand students to take on a new role. Despite popular labels such as digital natives or net generation, many students still have a very traditional view of education and are used to *being taught*. Education is often focused solely on passing examinations and achieving qualifications as a step on the career ladder. Teachers who fail to clearly teach what is needed to pass the next examination may be seen as poor teachers and receive lower evaluations. The consequences of open education for the student can be summarized as follows:

⁹ The Telegraph, Think Tank: Flip-thinking - the new buzz word sweeping the US (Sept 2010). <http://www.telegraph.co.uk/finance/businessclub/7996379/Daniel-Pinks-Think-Tank-Flip-thinking-the-new-buzz-word-sweeping-the-US.html>.

¹⁰ A repository of short video lessons in high school and college mathematics, chemistry and physics – see TED talk by Salman Khan, Lets use video to reinvent education, March 2011. http://www.ted.com/talks/salman_khan_let_s_use_video_to_reinvent_education.html

- Collaborative learning requires students to build their own personal learning networks and look outside the classroom/institution for inspiration
- Greater learner autonomy, taking charge of own learning
- Greater influence in course design, negotiated content
- More individualized learning outcomes

Student bodies can take an active role in promoting the use of OER and changing students' perspectives on learning as proposed by UNESCO-COL (2011a)

To promote these changing student roles, student bodies have a role to play in shaping the quality of their educational experience. Although creating teaching and learning environments that harness OER in educationally effective ways is primarily the responsibility of teaching staff, it is wise for student bodies – as key stakeholders in higher education – to be aware of the relevant issues and integrate them as appropriate into their interactions with other higher education stakeholders. (p. 12).

In short, students need to learn how to learn in order to take charge of their own competence development throughout their careers. If the traditional educational paradigm has been that of the charter holiday where everything is planned in advance by the organizer, the future paradigm will be that of the backpacker, equipped to survive in different environments and able to take responsibility for her/his own learning. The traditional division between class time and non-class time is already blurring and learning will become ubiquitous. According to the Futurist:

The next generation of college students will be living wherever they want and taking many (if not all) of their courses online...Work and leisure will be interlaced throughout waking hours every day of the week, and student life will reflect the same trend. In this way, self-directed learning will be the most important taught skill of the future.¹¹

The role of the course

The concept of the academic course is also under question. An open approach means that the course is no longer a set menu but a buffet full of choices. Students are encouraged to suggest reading lists or even playlists of video or audio content and the course can be negotiated and adapted as it progresses. This approach is already apparent in courses run by Peer 2 Peer University and on various MOOCs. Learning outcomes vary from learner to learner and the one-size-fits-all approach with common learning outcomes and a linear path towards them is hard to achieve. The whole concept of a course has to be renegotiated.

Rethinking international university education and beyond

Clearly, embracing the full potential of OER and OEP forces universities to radically rethink their policies and strategies. OER/OEP are indeed disruptive forces and faced with such a radical rethink it is not surprising that many institutions become entrenched in defending the status quo. Advocates of open education have believed in spreading innovation by the organic sharing of good practice and that this will then spread to national authorities. However, although much progress has been made in some countries, the spread of open education and a culture of sharing have met stiff resistance. This resistance to change has been underestimated by many projects and initiatives and is described as a

¹¹ Outlook, 2011. <http://www.wfs.org/content/2011-top-ten-5-notion-class-time-separate-non-class-time-will-vanish>

critical factor by Aceto, Dondi, Nascimbeni (2011):

Underestimation of institutional and structural inertia and its self-organization and stabilization potential. (p. 3).

Quite simply the academic sector will tend to defend tradition and stability when faced with potentially disruptive change. Universities are proudly independent with rivalries and competition between institutions, often encouraged by governments' desire to create a competitive market in higher education. This makes the idea of freely sharing resources distinctly unappealing for most. Advocates of openness have also underestimated the time required to effect such major shifts in education and the amount of support and patience that will be required to change deep-rooted beliefs and attitudes. The ability of the education sector to embrace innovation has been called into question (Bates, 2011a; Aceto et.al. 2011) and in most countries OER is still in the domain of the early adopters. The expected mainstream uptake has not yet taken place and there are a number of key factors that could lead to widespread implementation. These include a focus on quality assurance of OER, top-down initiatives from international bodies such as UNESCO and at EU or national level. The examples of Open Access and the Bologna process¹² show what can be achieved if there is a concerted effort at international and national level. The recent Brazilian example of legislation being introduced requiring government funded educational resources to be made freely available to the public under open licenses such as Creative Commons will hopefully inspire other countries to follow.¹³ A lack of clarity in copyright issues is one factor behind universities' reluctance to adopt the principles behind OER. In many countries it is unclear whether the university or the individual teacher owns the rights to resources produced during working hours. If the university wants to make a teacher's resources available on the net it may be necessary to provide remuneration. Any institution wishing to adopt OER as default must first clarify copyright issues and this can be a thorny issue. As a result many choose not to open such a hornets' nest.

There are many stakeholders in the adoption and implementation of OER, where all play a crucial role *per se*, but there are demands for co-operation and integration for successful implementation. According to UNESCO-COL (2011) there are at least five stakeholders and for each of them urgent guidelines are proposed aligned with embedded quality issues. The stakeholders are defined as:

- *Governments,*
- *Higher educational providers*
- *Teaching staff*
- *Student bodies*
- *Quality assurance/accreditation bodies and academic recognition bodies (UNESCO-COL 2011a p.13).*

Quality

Already in 1998 it was emphasized that a networked world requires new roles and responsibilities within learning and education and we must consider how quality applies in this new environment (Anderson & Garrison, 1998). Castell (2001) published the book *The Internet Galaxy* where he foresaw how the revolution within technology also should come to change society and education. He also foresaw how technology should become a facilitator for participation, openness and would have an impact on

¹² http://portal.bolognaexperts.net/files/Leuven_Louvain-la_Neuve_Communique_April_2009.pdf

¹³ <https://creativecommons.org/weblog/entry/27698>

learning and communication processes in lifelong learning. He emphasized a culture change where personalization, not at least in education, will be of utmost importance. Den Hollander (Ossiannilsson, in press) argues that there is a new paradigm for quality; quality as performance which is based on excellence and people. Quality can be assured through effective staff engagement and begins with narratives through people and to link *why*, *how* and *what* questions to the institutions. The most essential aspect is to invest in quality and build quality into the culture of any organization. In a study by Ossiannilsson (2011, in press) on benchmarking e-learning in higher education it was emphasized that benchmarking is a valuable tool for quality assurance and enhancement and should be integrated in ordinary quality assurance work. Thus, looking into your own organization and learning from best practice demonstrate quality performance. The findings further indicated that quality has to be developed and evaluated from the learners' dimensions and perspectives. The management dimension is also of utmost importance as is the management's vision and support, not least concerning infrastructure, costs, innovation and pro-activeness. Ossiannilsson also referred to a comprehensive review of paradigms for evaluating quality of online education programs made by Shelton (2011) where 13 paradigms were identified in the study (2000-2009). The institutional commitment, support, and leadership theme was the most cited when determining standards for online education programs. Ten of the paradigms examined pointed toward the institutional commitment, support, and leadership theme as being primary indicators of quality. Teaching and learning were the second most cited indicating quality. Faculty support, student support, and the course development themes were the third most cited in the analyses (in Ossiannilsson, in press).

As stated earlier, e-learning and online learning go beyond ordinary university framework and demand changes within the entire culture and organizational structure. There is therefore a need to re-think the entire quality concept in higher education. Quality has many dimensions. Quality refers to why we strive for quality, what quality is and quality for whom, but also the time dimension of when to measure quality and how to measure quality. In consequence there are many quality strategies. Additionally underlined by Holmes (2006) the scope is wide and there are many dimensions within e-learning. Quality improvements and standards will be of the utmost importance. Internationally there are broad but rather isolated quality initiatives and consequently there is a great need to build bridges globally. There is a move in education from transfer to acquisition and construction of knowledge through active dialogues with learners, content and teachers. In this scenario there is a need, as highlighted earlier, for teachers to take on the new roles of facilitator/mentor/guide. Current trends in e-learning seem to be logical connectivity, smart and communicative devices, convergence, and personalized on-demand and reliable services. E-learning is not a homogenous concept. The concept e-learning is changing from a primary distributive mode to a more collaborative mode (Adelsberg, Ehlers & Schneckenberg, 2009). JISC (2008) present a model where one aspect is the nature of issues, the rationale for e-learning, from resource use to student engagement, and the other aspect is the e-approach, through increased value in education to ultimately seeking to transform the entire learning process. Hence, it is argued that there is no longer a need for definitions, as e-learning has implications in a vast number of fields in daily life (Ehlers & Schneckenberg, 2010; JISC, 2008; Laurillard, 2011).

Benchmarking and experiences on benchmarking e-learning

Benchmarking has become a useful tool for quality assurance even now in higher education, although the concept originates from the business sector. Benchmarking has developed into an essential tool for organizations, and is regarded as an internationally respected vital component of good management practice. Moriarty and Smallman, (2009 p. 484) stated that *"the 'locus' of benchmarking lies between the current and desirable states of affairs and contributes to the transformation processes that realise these improvements."* Moriarty (2008) stressed that benchmarking is intended to be a means towards the end

of achieving a more desirable organizational state of affairs. Benchmarking may identify the changes that are necessary to achieve that end. The concept of change seems to be inherent in benchmarking. Benchmarking is, however, not just about change, but also about improvement, or as Harrington [1995] put it, “*all improvements is [sic] change, but not all change is improvement*” (p. 29). Moriarty continued by stating that benchmarking is not just about making changes, as it is more about identification and successful implementation. The European Centre for Strategic Management of Universities (ESMU) has initiated and worked on several European benchmarking initiatives, and as late as in 2009 they conducted the e-learning benchmarking exercise (Ossiannilsson & Landgren, 2011; Ossiannilsson, in press). The ESMU definition is as follows:

Benchmarking is an internal organizational [sic] process which aims to improve the organization's performance by learning about possible improvements of its primary and/or support processes by looking at these processes in other, better-performing organizations (van Vught, 2008. p. 16).

As shown in the definitions above, benchmarking is very much a process designed to enhance quality, to identify gaps and to bring about the implementation of changes. Benchmarking with regard to e-learning has been used since the mid 90's (Bacsich, 2009; Ossiannilsson, in press; Ubachs, 2008; van Vught, 2008). Quality e-learning has however been considered separately from so called traditional education, and quality indicators, benchmarks and critical success factors for e-learning have not been taken seriously. They have been managed in a very inconsistent manner, not embedded in learning and quality contexts (NAHE, 2008; Soinila & Stalter, 2010). Ossiannilsson also showed in earlier studies (2011, in press) that there is a lack of experience of the value and impact of benchmarking in higher education. Through international benchmarking on e-learning several insights have been gained (Ossiannilsson, in press; Soinila & Stalter, 2010) and benchmarks and indicators are well known and documented through comprehensive research. There are three main areas to consider, expressed in a variety of terminology. These three areas concern *management* i.e. strategic management and visions, *products* i.e. curriculum and course design and course delivery and *support* i.e. student and staff support (Ossiannilsson, in press; Ubachs, 2009). Lessons and experiences from these benchmarking initiatives might have relevance for benchmarking of OER and finding good examples and success factors.

Benchmarking of OER

From the benchmarking initiatives on e-learning lessons can be learnt on how to conduct benchmarking on the use of OER in higher education and how to work with good practice and success factors for OER. Although, it may be too early to implement in countries and universities where OER is still a relatively new concept, there are some countries and institutions that have reached a mature level of OER use. On the other hand quality indicators on e-learning may also apply to OER. Areas of interest to consider on benchmarking on OER/OEP/OEC may focus on:

- to identify success factors for the use and reuse of OER
- how social aspects really work and how they contribute to the success of OER activity generally.
- identify communities of practice
- identify stakeholders
- identify approaches in the use of OER
- develop best practice and cultivate cultures in the use of OER
- identify the process towards OEP and OEC

Discussion and conclusions

As demonstrated above, technology has up till now mostly been used to recreate the traditional classroom paradigm based on lectures and linear course progression. We have simply created virtual classrooms with virtual walls. The popularity of lecture capture at most universities helps to preserve the dominance of this form of teaching even though this technology does offer important advantages over the live event (ability to review at will). Although these solutions can indeed be valuable they fail to break significant new ground and are only online versions of standard practice. The learning management system and lecture capture system move the classroom on to the net but do not break new ground. As stated by David Warlick¹⁴ the barriers to change are largely psychological:

There are many barriers that prevent us from retooling our classrooms for twenty-first century [sic] teaching and learning. But at the core is the story of education that resides in our minds. Most adults base their knowledge of schooling on their education experiences from 20, 30, or 40 years ago. It is a story that is etched almost indelibly by years of being taught in isolated, assembly-line fashioned classrooms.

In today's increasingly digital society, the e-phenomenon has to be embedded in all learning and educational activities in order to push the boundaries expressed by several scholars (Bonk, 2009, Conole, 2011, Ehlers & Schneckenberg 2010). The traditional academic paradigm of peer review, academic journals and credibility via academic merits is reluctant to accept the merits of disruptive concepts such as open educational resources, crowd sourcing, reuse or mashups.¹⁵ According to Laurillard (2011) there is an urgent need to re-think university teaching and learning, not least to consider affordance to a higher extent and to focus on pedagogy rather than technology. Concepts and success factors related to e-learning in the twenty-first century will surely change the learning scenarios and cultures and may have an impact on how benchmarking e-learning in higher education will be conducted in the future and the kinds of quality-related issues which matter (Ossiannilsson & Landgren, in press; Ossiannilsson, in press). According to Laurillard (2011) there is an urgent need to re-think university teaching and learning, not least to consider affordance to a higher extent and to focus on pedagogy rather than technology. Clear parallels can be seen between OER and the Open Access movement and also the Bologna process. Bologna and Open Access would not have been possible without clear directives from EU level. With a clear European strategy in place national authorities and universities could then act within that framework. We believe that it will be extremely difficult if not impossible to achieve coherent and sustainable use of open educational resources without clear support and acceptance from above. The success of the Open Access movement for open academic publication can be seen as a role model for the implementation of OER/OEP. The key factor leading to the widespread acceptance of Open Access was the Berlin Declaration¹⁶ recommending Open Access principles for all European research. This in turn recommended member states to implement the principles nationally and today most research funding in Europe is dependent on the open publication of results. Although support amongst researchers was essential Open Access would not have gained mainstream acceptance without clear incentives from influential authorities. A similar scenario is essential for OER/OEP/OEC to gain widespread acceptance and although there are many examples of universities adopting OER as a key factor in their academic strategy there is little coordinated support from government level (OECD 2007). OER is just one aspect of a major shift in education and cannot be seen in isolation. The educational models inherent in the use of OERs emphasize education for all,

¹⁴ Telling the new story. <http://davidwarlick.com/wiki/pmwiki.php?n=Main.TellingTheNewStory> (Accessed September 8, 2011).

¹⁵ [http://en.wikipedia.org/wiki/Mashup_\(web_application_hybrid\)](http://en.wikipedia.org/wiki/Mashup_(web_application_hybrid)) (Accessed September 8, 2011).

internationalization, virtual mobility and sustainable development among other issues (Ossiannilsson & Creelman, 2011).

As stated above, the challenges facing higher education today to provide education in line with the demands of tomorrow's global digital economy are enormous. Students have to *learn how to learn* and be able to quickly adapt and learn from each other. The key to lifelong learning is the ability to be a proactive learner who is able to solve problems by networking with colleagues who can provide relevant input. The workplace of the future will value agile learners and it is this type of skill that needs to be fostered in school and university. Jane Hart describes the growing need in industry for "smart" learners.

The consequence of this for Learning & Development is that they now need to concern themselves more with helping employees become dynamic, agile, self-directed, independent and interdependent, i.e. what we might also term "smart" learners and less with creating and managing learning solutions for dependent learners. Helping employees become smart learners includes supporting them acquire a set of trusted resources and networks, using the most appropriate tools; and having the right mix of skills to make effective use of the tools and (re)sources.¹⁷

Many of today's fundamental educational concepts must be questioned and some phased out as we move towards a greater emphasis on collaborative net-based learning and a marked increase in part-time lifelong learning. Higher education will be more integrated into working life and with more learning on demand and/or tailor made learning and education, with high demands of flexibility and accessibility. This type of radical change cannot be achieved just through grass-roots agitation; it must be part of an international development. Several fundamental concepts have to be redefined in the emerging twenty-first century educational paradigm: teacher's role, student's role, university's role, review of intellectual properties, practices, administrative routines, teacher and student support. In short, we must dare to open Pandora's box.

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