Special Interest Group
Open Educational Resources

TREND REPORT: OPEN EDUCATIONAL RESOURCES 2012

March 2012

www.surf.nl/openeducationalresources
TREND REPORT: OPEN EDUCATIONAL RESOURCES 2012

drawn up by the Special Interest Group Open Educational Resources

Editors: Ria Jacobi and Nicolai van der Woert

March 2012
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March 2012

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Introduction

A growing number of higher education institutions worldwide are making their courses and other educational resources openly available to students, instructors, and other interested parties via websites and online repositories; as a result, an increasing number of people have access to high-quality educational resources. Governments are also making major investments in developing Open Educational Resources. This trend is part of a worldwide “Open Movement”. Open Educational Resources (OER) belong to a digital “openness family”, which also includes Open Source and Open Access.

This report describes the trends in the Netherlands and elsewhere in the field of Open Educational Resources. It comprises twelve articles by Dutch experts in the field of OER in higher education. It also contains twelve “Intermezzos” giving interesting examples.

The report is published by the Special Interest Group Open Educational Resources (SIG OER), a partnership made up of representatives of the Dutch higher education sector and SURF. The SIG OER promotes and facilitates the creation of communities, knowledge generation and sharing, collaboration, and strategic planning regarding Open Educational Resources in higher education in the Netherlands. The SIG is made up of experts and other interested parties in the sector who collaborate to increase the understanding and use of Open Educational Resources.

We do this by
- generating knowledge: identifying and tracking new trends and developments in the Netherlands and elsewhere;
- pooling knowledge: bringing experts and other interested parties together;
- sharing knowledge: sharing information, articles, news reports, and best practices in the area of OER.

More information:
- SIG OER: general information
- LinkedIn: news and discussions of OER
- SURFspace: news and articles about OER
- Blog: reports on relevant OER conferences
- SURF’s OER programme
- SURFacademy: meetings concerning OER

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Guide to this document

This report deals with OER from four different perspectives:

- Part A: the educational perspective
- Part B: the content-related perspective
- Part C: the technological perspective
- Part D: the organisational perspective

The diagram below shows various topics covering the whole field of OER as dealt with in this publication, and is intended to clarify it for the reader.
A brief introduction to Open Educational Resources


Open Educational Resources (OER) can play an important role in the transition to an education system in which innovation, customisation, high quality, cost-cutting, and efficiency go hand in hand. OER are resources – separate materials or complete courses – that are made available online for use or reuse. Subject to certain conditions, they can also be copied, adapted, or distributed.

Instructors can take OER materials created by others and reuse them, perhaps also adapting them so that they fit in with their own particular educational context and the individual levels and learning styles of their students. This approach can not only make the educational programme more flexible but also more efficient and less expensive. Some educational resources can also give a boost to the quality of the education provided, for example because their increased visibility means that institutions pay more attention to the content and presentation of their courses and educational resources, and receive more feedback from users. Making their resources openly available also allows higher education institutions to provide an extensive, detailed picture of their programmes, thus helping recruit undergraduates and PhD students.

OER therefore offer clear benefits for institutions, although there are also various aspects that need to be borne in mind when deciding whether to make use of them. It may still be rather complicated, for example, for potential users to find their way around the wide but fragmented range of OER that are available. The quality of all that material is also unclear; what is missing is an overall system of quality control. OER mean that publishers and institutions will need to reconsider their revenue models. There is also the question of copyright, which is inextricably bound up with OER: producers of these resources will need to decide the conditions for making their material openly available, while users/reusers will need to allow for the materials that they utilise being subject to various different types of conditions for use (laid down in licences).

Digital openness family

Open Educational Resources are members of a “digital openness family”. When cultural and scientific materials are publicly available under a “free” licence, one refers to “Open Access” or sometimes “Open Content”. The difference is that in the case of Open Access copying the material concerned is permitted but not adaptation. In the case of Open Content, it is specifically the intention that the material be adapted and perhaps distributed further. Open Educational Resources form part of Open Content, with the “content” specifically involving openly available educational materials.

There are various definitions of “Open Educational Resources”, depending on the extent to which the material can be adapted without the consent of the original author. Another difference is whether the material can be utilised commercially, which actually depends on the type of licence under which it was published.

The most broadly accepted definition worldwide in 2011 – taking account of the differences between licences – is the following: “Open Educational Resources (OER) are digitized educational resources that are freely available for use by educators and learners, without an accompanying need to pay royalties or licence fees. The digitized resources may be shared via the Internet or using media such as disk-drives. OER are usually, but not exclusively, licensed using Creative Commons licences. Both the original owners of the material and the subsequent users need to clearly understand the terms of these contracts to appreciate the ways in which materials may be remixed and shared.” (From: West, P. and Victor, L. (2011), Background and action paper on OER.)

A briefer definition is: “Open Educational Resources are resources that are made available online for use or reuse. Copying, adapting, and distributing the material are permitted subject to certain conditions.”

These definitions make clear that “open” means more than simply “free of charge”, and the two concepts should not be confused. The focus is in fact on the online accessibility of the material concerned. This involves in the first place materials that are made available to the public in general, and not just within a closed learning environment. This implies various different types of accessibility, depending on the functions of the materials or activities for which they can be utilised. Functions can be summarised under David Wiley’s “Four Rs” (Wiley, D. http://opencontent.org/blog/archives/355):
There are no restrictions on the type of educational resources concerned. Open Educational Resources can consist of separate items – for example articles, presentations, podcasts, or web lectures – but also combined educational materials such as enhanced publications or courses provided online. One then speaks of “Open Courseware” (OCW). Some open courses even offer the option of guidance by instructors or collaboration with other students via interactive elements that are built into the course.
### OER terminology

The following table explains some of the terms and abbreviations used in this report.

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>OER</td>
<td>Open Educational Resources</td>
<td>A brief definition is: “Open Educational Resources are resources that are made available online for use or reuse. Copying, adapting, and distributing the material are permitted subject to certain conditions.”</td>
</tr>
<tr>
<td>OCW</td>
<td>Open Courseware</td>
<td>An Open Course Ware (OCW) is a free and open digital publication of high quality university-level educational materials. These materials are organized as courses and often include course planning materials and evaluation tools as well as thematic content. Open Course Ware are free and openly licensed, accessible to anyone, anytime via internet. (<a href="http://ocwconsortium.org/aboutus/whatisocw">http://ocwconsortium.org/aboutus/whatisocw</a>)</td>
</tr>
<tr>
<td>OEP</td>
<td>Open Educational Practices</td>
<td>Open Educational Practices (OEP) are defined as practices which support the production, use and reuse of high quality Open Educational Resources (OER) through institutional policies, which promote innovative pedagogical models, and respect and empower learners as co-producers on their lifelong learning path. OEP address the whole OER governance community: policymakers, managers and administrators of organizations, educational professionals and learners. (<a href="http://www.icde.org">International Council for Distance Education</a>)</td>
</tr>
<tr>
<td>OES</td>
<td>Open Educational Services</td>
<td>Services related to ion with existing OER (already published by other institutions). This may involve both formal and informal learning, for example: educational communities, study groups, peer-to-peer feedback, study guidance (including peer-to-peer), instructor workshops.</td>
</tr>
<tr>
<td>OE</td>
<td>Open Education</td>
<td>Open Education is the simple and powerful idea that the world’s knowledge is a public good and that technology in general and the Worldwide Web in particular provide an extraordinary opportunity for everyone to share, use, and reuse knowledge. (<a href="http://www.willamflorahefflett.org">The William and Flora Hewlett Foundation</a>)</td>
</tr>
</tbody>
</table>
The OER movement

Publishing and sharing educational resources are rapidly growing trends. A rising number of educational institutions are providing a variety of educational resources digitally and “open”; these range from lectures to study programmes and from video reports to lecture notes. This material is provided as Open Educational Resources (OER) or as Open Courseware (OCW). The possibility of publishing and sharing OER is of great importance for quality and innovation in education. One can almost speak of an “OER movement”. That movement is specifically an international one. It commenced in 2001 at the Massachusetts Institute of Technology (MIT). MIT was the first institution to make educational resources available on the Web for each course. Since then, an increasing number of educational institutions (Dutch and foreign) have shared their educational resources via the Internet.

In the Netherlands, the higher education sector has in fact only just joined the movement. A number of higher education institutions have started online publication of educational resources via OER/Open Courseware (OCW). These include Delft University of Technology, the Dutch Open University, and Radboud University Nijmegen Medical Centre. Various other institutions – for example Leiden University and the HAN (Arnhem/Nijmegen), Amsterdam, and Avans universities of applied sciences – have initiated policy and project planning regarding OER/OCW.

But just why do institutions get involved with OER/OCW? Various reasons have been identified, ranging from the idealistic – educational resources developed with public funding should be shared with “the public”; “education belongs to us all and should be shared” – to the wish to promote innovation, economic motives, or simply a need for exposure.

SURFfoundation has set up the Special Interest Group OER (SIG OER) to call attention to OER/OCW in the Netherlands by means of online discussions and meetings. A special programme track was devoted to this topic during the 2011 Education Days. SURFacademy has held a number of sessions on OCW/OER. In the course of last year, the main issues regarding OER were therefore both touched on and dealt with in greater detail. The present trend report is also a way of drawing attention to OER/OCW, perhaps leading to a more active OER movement in the Netherlands?

What is the current situation in the world of OER?

There have been numerous developments since MIT began publishing its courses online in 2001. The world of OER has not stood still and there have been all kinds of initiatives. These have not been restricted to writing manuals or setting up open courses about developing OER/OCW. Here are just a few examples of what has been happening – and continues to happen – in the world of OER.

From OER/OCW to OEP or OES

There are all kinds of initiatives regarding OER, and these are not restricted to bits of educational resources or courses published online. In fact, new educational resources and courses are being developed with the aid of separate resources. And people are taking this a step further, towards open educational practices (OEP), in other words educational activities, feedback, and interaction based on OER. Another movement concerns open educational services, i.e. the provision of educational services (free of charge or paid for) related to OCW, for example tests, guidance, explanations, or additional content. Other initiatives involve integrating existing online practices such as social media with OER and educational platforms. One example is OER Glue (see Intermezzo 3), which combines an authoring system, OER, open courses, and social media to produce a single powerful environment. Where will all this lead?

Prosumer

For the moment, the producers of Open Educational Resources are primarily instructors who put together various types of materials – for example readers, articles, and presentations – for various educational purposes. But what is the contribution of the student? It has become clear that students want to have access to educational content (web lectures, articles). The next step is for the student not only to have access to such material but to create it him/herself. Indeed, the student already creates educational content in the form of reports, dissertations, or presentations. Shouldn’t we be approaching the student as a co-creator of Open Educational Resources and providing him/her with the necessary facilities? The student thus becomes a prosumer rather than a consumer.
Open and flexible education

Will OCW/OER become a serious competitor for the classic Electronic Learning Environment (ELE)? What about the position of the traditional higher education institution? These are among the questions dealt with in the articles in this report. Developments often take place outside the structure of the institution, for example within a peer2peer university where OCW are made available and students work by means of peer feedback and peer tutoring, where those engaged in “lifelong learning” adapt the materials themselves. Are we moving towards crowd education, i.e. open education? Another example are MOOCs (Massive Open Online Courses), which can be taken by large numbers of students from all over the world, and where knowledge workers can meet. “Traditional” institutions can hardly compete. Or will the trend in fact have the effect of making higher education more cohesive? And don’t open education and Open Educational Resources make it much easier to develop flexible education? Learners can determine their study package according to their interests rather than the institutions doing it for them. The institution will then test the level achieved. Is that the direction in which we are going? What does all this mean for an institution’s business model? This is an entirely new perspective to think about.

Objective of this trend report

This trend report aims to show the current situation in the Netherlands regarding a number of worldwide initiatives (some of which are described in the Intermezzos). The report therefore attempts to describe current trends in OER and where the OER movement is going. We are curious as to what issues are currently relevant. What movement do we in fact form part of, both within the Netherlands and internationally?

This publication consequently:
- summarises: what is the current situation after some seven years of OER?
- assembles: what are the current trends and developments in the world of higher education?
- clarifies matters: reasons, motives, connections, strengths and weaknesses, drivers;
- provides a basis for further discussion: what future developments and expectations are there?
- encourages further advances: what steps will Dutch higher education institutions take regarding OER/OCW?

Each contribution and therefore each topic has its own perspective. We do not claim that this trend report by the SIG OER is complete, but we do hope that it will initiate further discussion. And perhaps it will also promote developments in OCW/OER in the Netherlands.
Part A: The educational perspective on Open Educational Resources

**Article 1**: Does the phenomenon of Open Educational Resources lead to new didactic models? “It depends”, by Wim Didderen and Stefan Verjans (Dutch Open University)

**Intermezzo 1**: OPAL shows the way towards Open Educational Practices

**Article 2**: Integrating Open Educational Resources into the curriculum, by Cora Bijsterveld and Sofia Dopper (Delft University of Technology)

**Intermezzo 2**: WikiEducator

**Article 3**: Facilitating lifelong learning with OpenU, by Wilfred Rubens and Anda Counotte (Dutch Open University)

**Intermezzo 3**: OER Glue

**Article 4**: Open Educational Resources from the student’s perspective, by Hester Jelgerhuis (SURF)

**Intermezzo 4**: MOOC: Massive Open Online Course
Article 1 -
Does the phenomenon of Open Educational Resources lead to new didactic models? “It depends”

Do OER didactics actually exist?

This contribution starts with the question of whether there is a direct relationship between OER and didactics. Is there such a thing as “OER didactics”? In the same way as a decade ago the usefulness and need for specific digital didactics were questioned, one can also raise questions regarding specific didactics for OER. Simons (2003) defined digital didactics as “knowledge and expertise regarding the use of ICT to facilitate learning”. A parallel definition of OER didactics would therefore be: “knowledge and expertise regarding the use of OER to facilitate learning”. More generally, one might define specific didactic models as “knowledge and expertise regarding the use of X to facilitate learning”, with X then being replaced by specific tools or technologies, for example online video, virtual worlds, or serious games. The question is then: Is it in fact valuable to think of specific didactic theories, models, or practices specifically for Open Educational Resources? Are OER didactics a specific discipline within digital didactics, or within didactics in general?

What drives didactic innovation?

Is the existence and increasing availability and accessibility of Open Educational Resources in itself a reason for changes in the practice of teaching and learning – i.e. for educational innovation? Or is there, rather, a broader palette of intervening developments regarding digital learning materials, digital media, and digital social networks that help determine new trends in didactic concepts in higher education? The authors of the recent report *The Future of Learning* distinguish a number of simultaneous ICT trends, with OER being only one of many, as shown in Figure 1 below. The report identifies three trends in the thinking and practice of education: (a) an increasing emphasis on personalisation, (b) the growing importance of collaboration, and (c) an increase in informal learning. Besides these three general trends, we ourselves identify a fourth – albeit a less clear-cut one – namely a growing movement that strives for “Open Education” in the broad sense, focusing on the broader accessibility of education in the light of globalisation and technological development. We consider that the didactic use of OER can be seen as part of that more fundamental movement towards openness, embedded in a much-changing context of education and learning, as shown in Figure 1.

Figure 1: Conceptual chart of the future of learning (Redecker et al. 2011, p. 43)

To summarise: our position at the start of this article is that there is no simple direct relationship between OER and possible trends in “didactic models”. Didactic work using OER fits within a complex interplay of a number of parallel developments. In the light of the above-mentioned trends, it would be inappropriate for us – as the authors – to present you with a cut-and-dry opinion as the sole truth. For the purposes of this article, we have therefore decided to bring together a number of observations that can perhaps best be referred to within this context as “something to think about”. If a trend can indeed be observed, it is up to you – the reader – to deduce it, construct it, or even to imagine it if you wish.

Old wine in new bottles?

One striking feature in the starting phase of MIT’s pioneering OpenCourseWare project was that the university made all the material that it utilised in its traditional face-to-face instruction openly available, free of charge, on its website. Those

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educational resources were designed and developed for teaching groups of students in the context of a lecture theatre, and consisted mainly of the presentations and source material used during lectures, later followed by audio or video recordings of lessons. An initiative such as the British Open University’s OpenLearn provides materials that are indeed intended for independent study, but that only provide a taste – a kind of extensive “teaser” – of the courses that can be purchased at the university. Starting from the familiar didactic model, finished learning resources are made available free of charge to anyone who wishes to use them. The OER offered reflect existing didactic models but do not immediately lead to innovation in the underlying didactic approach. One of the aims of offering open learning resources of this type is to lower the threshold to existing higher education, although it is sometimes dismissed as purely marketing.

This approach starts from the existing range provided by the institutions (institution-centred) and makes that range partially available. But as Figure 1 indicates (learner-centred), educational institutions find themselves increasingly confronted by demand from groups of students who are unable to find what they need within the existing range and who approach the institution from the perspective of their own situation and with a specific demand or list of requirements.

**Different times, new formulas?**

Students approach the education providers’ portal or webshop individually or in ad hoc groups. That student population is extremely diverse as regards prior education, what they wish to learn, cultural background, work experience, social position, and age. Within these “customer groups”, one can distinguish two important categories:

a) On the one hand, there are people whose main – or even sole – reason for wishing to study is to achieve a level of education/training (or a higher level) within an existing field. These students demand efficient and effective guidance towards gaining a certificate. In response, educational institutions offer part-time programmes, work-study programmes, or other variants.

b) On the other hand, a growing number of individual students, groups of students, and organisations come with a more “open” demand for learning. This may, for example, involve a sector-specific training programme at the boundary between senior secondary vocational education (Dutch “MBO”) and higher vocational education (Dutch “HBO”), with a research component, for which creative variations on existing programmes are insufficient. After all, such students require a programme tailored to their particular wishes.

This trend has all kinds of far-reaching consequences for the traditional educational models and educational institutions, with the boundaries between “formal” study programmes leading to a certificate and non-formal or informal learning activities – whether or not supervised – becoming blurred. Figure 1 refers to this movement as “informalisation”. One major consequence of the “open demand” will be that for these groups or individual students providers will still only be sporadically able to put together a suitable package within the frameworks of the existing institutionalised educational structure. Besides the familiar “academic” curriculums, “open learning” packages are increasingly developing, with the final objectives being defined broadly, but with the actual packages and subject matter being filled in flexibly.

Quite apart from its organisational and commercial consequences, this movement will have a major impact on the role and duties of instructors. The concept of the instructor is being defined in an increasingly open manner, because the tasks of an instructor can be undertaken by various different individuals, including not only “normal” higher education instructors – from both within and outside the institution concerned – but also student peers and external experts engaged on an ad hoc basis. In order to meet the demand for this type of study, increasing use is being made of the “broad” network around an institute, programme, instructor, or team of instructors.
Is the future “open”?

In this article, we have now come across the term “open” four times: Open Educational Resources, open demand for learning, open learning packages, and an open definition of the concept of the instructor. Within the movement towards “Open Education”, a number of aspects of openness are distinguished. Conole (2011 – see Figure 2), for example, distinguishes between:

a) **open design** of educational resources, activities, and/or packages;
b) **open delivery** of sources, educational resources, activities, and/or packages;
c) **open dialogue** between students, instructors, experts, and/or others; and
d) **open research**, with research activities and results being shared freely and arising within various types of co-creation.4

![Figure 1: Four types of openness in education (Conole 2011)](image)

Within this movement towards open education, one sees an increasing number of types of co-creation and user-generated content, not only as regards educational sources and materials, but also educational activities and packages.

One final type of openness not included in the above description is open assessment. Where the “monopoly” on formal evaluation of learning results previously lay with accredited education providers, the boundaries are now becoming blurred. One extreme example of this is the peer-to-peer university, at which assessment of what students have learned is carried out by their peers,5 but there are also experiments with crowd-sourced assessment.

With all these aspects of openness, various gradations are conceivable and can in fact be discovered in actual practice. Gradations could be introduced for OER according to the 4 Rs scale, for example: Reuse, Redistribute, Revise, and Remix. There are many examples of teachers who share their educational resources (website, presentation, or learning pathway) with one another as an end product, with options for reuse and/or redistribution. It is far less common for half-finished products and the associated source files and manuals – with options for revision and/or remixing – to be shared. As far as we know, these aspects and their various possible gradations have not yet been systematically surveyed. Nevertheless, all these aspects with their gradations demand an extremely wide range of skills and competencies on the part of an instructor who wishes to make effective use of OER.

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On the way to an OER instructor?

We have already pointed out that the role of the instructor is changing. The concept of an instructor is in fact a strange one where open learning is concerned because every participant in a learning process can be a teacher, a supervisor, an expert, and a learner. Concepts such as instructor and scholar embody institutional connotations. Instructors will need to be equipped to quickly and flexibly design and put together open learning packages for students and groups of students, and to design, coordinate, and implement guidance for those packages. Instructors no longer find themselves in a “learning environment characterised by scarcity” but in one with an oversupply of sources, information, and knowledge. That learning environment requires a “pedagogy of abundance”, supplemented by a “pedagogy to support learners”. ⁶ An instructor or learning guide needs to be able to navigate through a sea of materials so as to be able to suggest the right sources at the right time, but must also be able to provide assistance with personalised learning programmes and processes. He is a “scaffold”, coach, and facilitator, not only as regards shortcomings in knowledge and specialised competencies but increasingly also as regards providing assistance with “21st-century skills”, in particular functioning within the social network, both in the real and virtual settings (see also Figure 1).

Being able to function within a social network (whether online or offline) is also an important competency for the OER instructor himself/herself (see the concept of “collaboration” in Figure 1). The professional learning network ⁷ is a source of knowledge sharing and filtering: in the “environment of abundance”, the filtering role of a properly functioning network is indispensable, particularly when an instructor quickly requires useful and appropriate OER materials to fit into a package. The learning network also provides a large number of external instructors, experts, and alumni who can contribute to the learning package or the guidance. If – finally – the learners are invited to become part of the learning network, the wheel will have come full circle, with a flywheel effect being created for the “open” learning culture.

Besides the importance of network competency, educational literature in the 21st century is devoting increasing attention to digital literacy (often also referred to as “media wisdom”) to support instructors who have to make the transition from “searching for appropriate materials within a small market” to “finding the appropriate answer within a gigantic market”. An interesting perspective in this connection is the concept of transliteracy, which has been defined as follows:

Transliteracy is the ability to read, write and interact across a range of platforms, tools and media from signing and orality through handwriting, print, TV, radio and film, to digital social networks.

Transliteracy offers enormous opportunities for dynamic and “open” learning packages – with “open” also meaning platform-open. The choice of a media platform is no longer a question of EITHER-OR but of AND-AND-AND...

Technologically less exciting but didactically at least as “interesting” is the similar trend from multicultural to transcultural education. The increasing international mobility of the instructor and his/her development into a “world citizen”, i.e. a “world instructor”, will mean that education will have to be designed from a more transcultural context as regards its structure, content, and didactics. That is good news above all for developing countries. Just what transcultural education and transliteracy will demand in the way of didactic action and whether these trends will bring forth entirely new didactic models remains to be seen. That is why the present publication is a trend report.

Exploring the boundaries

We foresee that these trends will in any case – and definitely – bring about major shifts, some of which can already be glimpsed here and there. Here are just a few of those shifts (in random order):

- As various examples in the Netherlands and Flanders have shown, open learning models can be applied not just in higher education but also at secondary and even primary schools. One striking example can be found in the work of Maarten Hendrickx, a group 7/8 teacher at a small school in the Belgian province of Limburg (http://mees.ws/). Maarten has been working since 2005 with a class blog and a podcast, and since 2008 with Twitter. He now has more than 900 “followers” in his Twitter network, and he makes active use of that network in his classroom teaching.

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Open platforms such as http://www.oerglue.com/ are being created that enable instructors to construct open learning materials within learning packages and provide them to their students.

Open source authoring tools have been created with which to construct learning materials such as the GLO-Maker (Tom Boyle, London Metropolitan University) in which a number of didactic templates are provided but in which the interim products are also shared so that they can be customised.

Another initiative worth mentioning is Salty Chip (Kathy Hibbert, University of Western Ontario). Didactics is not about “you can lead a horse to water but you can’t make it drink” but about feeding the “horse” a lot of “salty chips” so as to arouse its thirst. Higher education acts as the supplier of salty chips. If that’s not a new kind of didactics!

A shift is taking place from the classroom handbook model to dynamic online content models, including the consequences of, for example, full-scale availability (“any time and any place”) of a dynamic sourcebook. There are an increasing number of examples of this in higher education, such as those used by Erik Duval (Leuven, Belgium), Helen Keegan (Salford, UK), or John Boyer (Virginia Tech, USA).

One extreme type of open education consists of Massive Open Online Courses (MOOCs), in which participants learn in open ad hoc online learning communities. Open content, experts, and/or peers are brought together within a minimalist structure and with only a minimal predefined didactic approach. In recent years, a wide range of MOOC “courses” have developed – which followers of the MOOC philosophy prefer to refer to as MOOC “events” – in which each learner paves his/her own way, reflects, and shares his/her reflections with peers and experts. It is chaos with very many levels of freedom, and in that sense a great challenge, as shown diagrammatically in Figure 3. One recent example of a MOOC is the Change 11 course by Stephen Downes, George Siemens, and Dave Cormier in Canada.

Figure 2: Learning environment of a Massive Open Online Course, explained in the film clip: http://www.youtube.com/watch?v=eW3gMGqc2Qc
Final considerations

Why does our title say “It depends”? Our reflections show didactically relevant initiatives that relate to the use of OER; but OER didactics do not exist in isolation. It is clear that within a complex playing field and a more “open” and highly dynamic educational structure, all sorts of types and variants of open didactics will develop that cannot automatically be related to OER.

Flexible types of “scaffolding” (i.e. support and guidance from instructors) will be prominently present within an “open” mix of pedagogical-didactic approaches, with situational learning (for example in the workplace) and networked learning predominating within open educational packages, according to the lines of personalised, collaborative, and informal learning (see Figure 1) in an increasingly open World of Learning. “Scaffolding” as such will also be of a distributed (“open”) nature. It will be constructed not only by the “instructor” and the “student” but by a wider range of temporary actors from the current learning network (social and otherwise). The didactics will also focus less emphatically on filling in gaps in knowledge; social and network deficiencies must also be worked on.

But as with all major innovations, it is precisely at the interfaces that surprising and unexpected new ideas, products, and services arise. The key question here is whether our higher education institutions and individual instructors can afford to adopt a “wait-and-see” attitude in the light of these movements. Asking that question in fact amounts to answering it!
Intermezzo 1 - OPAL shows the way towards Open Educational Practices (OEP)

OPAL is the Open Educational Quality Initiative. Rather than focusing on making OER accessible, as numerous other projects have already done, the focus of OPAL is on quality and innovation. The project has now been completed and has generated a number of freely usable products: a questionnaire with which to determine what stage your institution has reached, a set of guidelines, best practices, and an international register of OEP initiatives.

OPAL’s definition of OEP is:
Open Educational Practices (OEP) are defined as practices which support the production, use and reuse of high quality Open Educational Resources (OER) through institutional policies, which promote innovative pedagogical models, and respect and empower learners as co-producers on their lifelong learning path. OEP address the whole OER governance community: policymakers, managers and administrators of organizations, educational professionals and learners. (source: ICDE)

http://www.oer-quality.org/
Article 2 -
Integrating Open Educational Resources into the curriculum

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Introduction

Since MIT began publishing its courses online in 2001, a lot of universities worldwide have followed its example, meaning that a lot of high-quality educational resources are now available online free of charge. After a decade in which the emphasis was on making educational resources available under Creative Commons licences (http://creativecommons.org), the time has now come to consider how education can benefit from all the material that is now available worldwide. This also applies to institutions that have not yet taken the step of publishing their materials on an open access basis. Open access publication of educational resources is not a necessary condition for the effective use of OER in educational practice, or vice versa. It is the case, however, that open access publication of one’s own material can help develop a more open mindset, which makes the reuse of OER easier.
Transition to open practices

In articles about OER, there is currently a transition from an emphasis on Open Educational Resources (OER) to one on Open Educational Practices (OEP). Whereas OER focus on how resources can be made available and stored for the long term, OEP have to do with how OER can be utilised in an education system in such a way as to bring about an improved learning experience. OEP concern the construction of educational activities and feedback regarding an item of OER, whereby an attractive learning package is created.

Making use of OER in education clarifies their deployability within a given educational context, and the resources – enhanced with the user experience of instructors and students – can then be shared with others. This gives rise to communities of practice made up of members who join together in building expertise by addressing problems and sharing, adapting, and jointly developing resources. These communities of practice could be assisted by providing useful thematic repositories. In the Netherlands, a number of initiatives have already commenced at schools for senior secondary vocational education (“MBOs”), for example the “Green School” (http://www.ontwikkelcentrum.nl/ecc3/mbo/).

Use of OER in education

At the moment, Open Educational Resources are hardly used anywhere in the world to improve the student learning process; at least, nothing much has been published on this topic. There is, of course, increasing use of digital learning material in education – for example video lectures, digital workbooks, and websites – and students utilise MIT’s OpenCourseWare, for example, to supplement their own courses. However, that digital learning material is often utilised to replace printed media or meetings, with the actual education provided not differing significantly as a result.

It is a misconception to assume that making high-quality educational material openly available will automatically lead to changes in didactics. In order to understand the role that OER can play in changing education, it is necessary to bring didactic models into the discussion (Geser, 2007; Schaffert & Geser, 2008). Geser (2007) argues that Open Educational Resources will not bring about changes in education if the dominant didactic model remains an instructor-centred one. In such a model, instructors and students in fact continue to be consumers of material developed previously, whereas they should in fact be collaborating to creatively develop their own material and to share it, and should be adding value to the material of others (i.e. examples, lessons learned).

In our knowledge society in which change is rapid and knowledge gained swiftly becomes out of date, it is necessary for students to continue to learn throughout their lifetime (Vermunt, 2000). It is therefore important for them to develop the skills during their study programme that will enable them to tackle the learning process independently (Simons, Van der Linden & Duffy, 2000).

OER are only of added value in innovative, student-centred educational models, in which instructors and students are assigned an entirely different role. Ehlers (2011) describes the essential elements of OEP as collaboration-oriented, with resources being shared openly and a didactic model being utilised which involves social interaction, knowledge creation, peer learning, and the sharing of learning experience. This has consequences for instructors, learners, and policymakers. For instructors, it means continuous reflection on and improvement of the teaching/learning process and the educational resources used in it, and sharing the lessons learned within communities of practice.

Instructors should coach learners in producing, sharing, and validating content. They will remain the experts in their discipline, but will continue to improve their expertise in collaboration with learners and colleagues (“lifelong learning”). For their part, learners will need to actively seek out openly available learning materials that fit in better with their individual needs than those made available by the instructor. Policymakers and management will also need to support and encourage the use of Open Educational Resources.
The transition from OER to OEP at Delft University of Technology

Delft University of Technology now has more than five years experience with OER (http://ocw.tudelft.nl/), and attention is gradually shifting towards integrating them into the actual practice of teaching and learning. A number of initiatives are currently being developed that may eventually lead to OEP. In the first place, experiments are taking place with the application of blended learning concepts within curriculums, with an ideal mix of online education and face-to-face instruction being sought, depending on the educational context. The targeted deployment of ICT resources and digital learning materials – self-developed or developed by someone else and reused – can contribute to the better utilisation of face-to-face contacts, and makes a greater call on the contribution that students themselves make to their education ("motivational education").

There is a growing awareness that when developing a new course, you do not need to start all over again from scratch but that openly available material can help you put together a tailor-made course that keys into the target group concerned and its learning objectives.

Preparations are also being made in the case of a Master’s degree programme to construct a dynamic shell around the Open Courseware content, so that the whole programme can ultimately be provided online. This makes the education provided significantly more flexible and may help attract new target groups.

An increasing number of instructors are following the example of people like Eric Mazur (http://mazur.harvard.edu/education/educationmenu.php) in linking their teaching to the questions that exercise the students and making use of peer instruction to make students more active and encourage them to learn from one another.

One final interesting development at Delft University of Technology involves the use of Open Study within Open Courseware. Open Study (http://openstudy.com) is an example of an Internet forum where people from all over the world can register for a study group and can communicate with others who are interested in the same subject. Participants can ask and answer questions and exchange information. Students would be able to consult not only their own instructor and fellow students but also the forum. MIT has also made use of such a system. Taken together, all this varied experience constitutes ingredients that can ultimately lead to making Open Educational Practices a reality at Delft University of Technology.

Conclusion

The transition from OER to OEP is a slow process that needs to take place in stages. Whether it will be successful depends on all those concerned – policymakers, management, instructors, and learners. At the moment, the educational culture of higher education is insufficiently equipped to bring about that transition. At both management and instructor level, the necessary “open” mindset is still lacking. Incentives covering the whole institution – for example payment in the form of time or money or inclusion in the remuneration structure – are absolutely necessary to encourage instructors to put time and energy into developing, sharing, and reusing OER. Training and didactic and technical support for instructors are also extremely important. Assistance in finding suitable OER, developing the curriculum, adapting OER, and carrying out their new role are crucial for success.

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Intermezzo 2 - WikiEducator

For some years now, OER pioneers and OER users have been united within WikiEducator. This wiki community offers a wealth of information about OER issues and use throughout the world. It is a must for anyone who wishes to keep abreast of things, is seeking specific information, or who wishes to be involved in further development of the knowledge base or to share lessons learned.

www.wikieducator.org
www.wikieducator.com
Article 3 -
Facilitating lifelong learning with OpenU

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New educational approaches with OER

Changes in society and in the education market mean that higher education institutions in various parts of the world are switching to new educational approaches in which OER play a major role. So as to give an idea of what such a new approach involves, this article describes the Dutch Open University’s “OpenU”. With OpenU, the Dutch Open University (OU) aims to assist knowledge workers in flexibly developing knowledge and skills at academic level and keeping them up to date. This approach arises from the necessity of facilitating lifelong learning and the realisation that the learning requirements of knowledge workers cannot be satisfied solely with courses and programmes. In this article, Wilfred Rubens and Anda Counotte deal with the background, content, and target groups for OpenU.
Investing in knowledge, investing in learning

In today’s post-industrial network society, lifelong learning is necessary for an individual’s professional development, for the competitiveness of work organisations, and for society as a whole. According to Sloep and Brouns (2011, p. 16), economic considerations are not the only reason to invest in knowledge; there are also democratic reasons, for example. They find that society is becoming increasingly complex and imposes ever-higher demands on the level of education of the citizen. Once gained, diplomas cease to be valuable within just a few years because different knowledge and skills have become relevant.

Lifelong learning: the Netherlands is failing

Unfortunately, it is often only lip service that is paid to the urgency of lifelong learning. As the Chairman of the Executive Board of the Dutch Open University, Theo Bovens, put it at the opening of the academic year in 2008: “Everybody embraces lifelong learning, but when I look back at the initiatives of the past few years, I find that in the Netherlands we are mainly good at lifelong drivelling.”

Generally speaking, the Dutch education sector is failing as regards lifelong learning. In 2008, for example, the OECD found that, compared to other countries, there were relatively few students aged over 30. In that year, 2.9% of Dutch adults were enrolled in courses or programmes, as opposed to the OECD average of 5.6%. In the United Kingdom, the corresponding figure was 15.6% and in Sweden 13.5%. The reasons for this low participation level were expressed as follows by the European Commission in 2003: the Dutch education system is insufficiently open and insufficiently flexible. As a result, it is insufficiently able to key into the needs of the individual learner.

The Dutch Open University (OU) has been a major player in the field of lifelong learning for a number of years now. It increasingly offers flexible education in the form of courses, Bachelor’s degree and Master’s degree programmes not only via distance learning; it is also currently developing short programmes (for example “Computers and Communication Networks”, with an estimated duration of 10 months) and “Certified Professional Programmes” (for example “Management and Organisation of Operational Processes”, with a duration of six months at a study load of 8 hours per week). The OU also offers services to assist students in the learning process, for example speed reading, mind mapping, and time management. So as to promote lifelong learning, the OU was also the first Dutch university, in 2006, to start using Open Educational Resources (OER). A selection of courses are made openly available free of charge on the Internet. The OU also publishes articles, blog posts, and videos (for example via iTunesU) as OER. Even so, the OU believes that it must become even more flexible if it is to play a greater role in the area of lifelong learning.

Learning networks as an alternative

Lifelong learning does not take place, however, solely through courses, training sessions, and programmes. Sloep and Brouns (2011) show that the learning needs of adults differ from those of young people. In their view, traditional learning models from initial education are unsuited to satisfying the learning needs of adults. Traditional models are directed, after all, at objectives that are no longer relevant to adults, for example socialisation or the acquisition of certain basic competencies. Moreover, there are hardly any uniform learning needs among adults, meaning that greater flexibility is necessary. The highly formal nature of traditional education, with the associated bureaucracy, is also an obstacle to adult participation in educational activities. Finally, Sloep and Brouns assert that traditional educational models ignore technological innovations that play an essential role in the day-to-day life of the modern knowledge worker. When it comes to facilitating learning in the knowledge society, they see the future particularly in learning networks. A learning network is then an online social network designed to support conscious, goal-oriented learning by adults (Sloep & Brouns, 2011, p. 25).
Taking account of varied learning needs

The necessity of facilitating lifelong learning and the realisation that the learning requirements of knowledge workers cannot be satisfied solely with courses and programmes form the basis for a recent initiative by the Dutch Open University: OpenU. This is a system in which the OU aims to meet the varied learning needs of adults via a range of web-based services. A “learning infrastructure” is being developed within OpenU that can meet all the needs within the spectrum of informal, non-formal, and formal learning in a wide range of contexts of working and learning. For the present, OpenU is aimed only at the disciplines of Education and Training and Computer Science, which each have their own portal within OpenU. A decision will be taken at the end of this year as to what other disciplines will be implemented within the system and how. There are different emphases for each discipline within the framework of OpenU.

Collaboration is essential

One crucial factor is to realise that collaboration and knowledge sharing are of fundamental importance for enabling lifelong learning within the network society. The OU, for example, provides only a limited range of courses and programmes. In order to meet the range of learning demands expressed by the varied group of knowledge workers, the OU will therefore need to collaborate with its partners. In the post-industrial network society, the strength of an organisation is to a large extent determined, after all, by the strength of its network. OpenU is also the platform within which the OU collaborates with other parties.

Content of OpenU

OpenU comprises a great variety of content, which also differs from one faculty to another. In this article, we will discuss a number of components (see also Rubens, 2011). In the first place, there are blog posts. Arrangements have been made for staff of the participating faculties to regularly blog about their discipline. With their blog posts, they increase the transparency of their discipline, help interested parties focus on matters that are actually important, and reinforce their position as an expert.

The second component that I wish to explain consists of “topic communities”. Each discipline has a number of important themes that occupy a central position within the profession for a long period. Within OpenU, information, discussions, and learning activities are arranged within “topic communities”. Within the discipline of Education and Training, there are some fifteen different topics which will be made openly available in the course of 2011–2012. One of the topics that is already active concerns learning analytics, with information about, for example, a learning analytics framework within which six critical dimensions are distinguished. Mobile technology is currently central to the discipline of computer science. A symposium on that topic was held on 12 November 2011, forming the starting point of a community dealing with the topic.

A third component is the “search and invite” function. Someone can create a profile on OpenU and search for other users on the basis of profile information. The user decides for him/herself what profile information will be shown (and to whom). This function is used, for example, by OU students who feel that they are learning “in isolation”. They can use this function to contact other students who are taking the same course, or students who live near them.

A fourth component of OpenU consists of online master classes; these are currently provided only for Education and Training. During OpenU master classes, participants deepen their understanding of a specific topic in this field. They can follow the master class online from their PC. An expert is interviewed about a topic in his/her discipline, for example: how do you breathe life into an online community, or how can you utilise social media in education? Students can participate actively in the master class by putting questions to the expert via the chat function. After the master class, discussion can continue within the forum. Participants are also offered relevant resources. Some master classes are available to anybody.

A fifth and final component of OpenU consists of Open Educational Resources. Within the portals, one can find free courses such as Scala. This is a familiar programming language; it was used, for example, to develop Twitter. When you have studied the course, you can use Scala as an object-oriented language and as a functional language, and you can write scripts in it. The course is a basic one with a study load of 30 hours, enabling the student to program in Scala. Another example of OER are the “snapshots” of Computer Science. Potential students/visitors are given an idea of existing Computer Science
courses, namely by means of a portion of the course material that gives a good impression of the course as a whole. One example is the introduction to the development of information systems. This snapshot concerns a number of examples of information systems and their development, including the reasons why developing complex information systems sometimes goes wrong in actual practice. Initial experience shows that these snapshots give potential students/visitors parties a better idea of the courses as a whole.

However, OpenU also comprises resources that do not come within the definition of Open Educational Resources. For example, the Education and Training Institute offers all the subject matter online via OpenU, whereas only some of it can be considered as OER. The other subject matter can, however, be made “open” with just a few clicks of the mouse. Computer Science is currently experimenting with a technology allowing it to make all the subject matter for a course available to a restricted target group online, without it being possible to copy or download it.

Who is OpenU intended for?

Within OpenU, there are four types of user. In the first place, there are visitors, i.e. anybody interested in the content of the portal. They can access news reports, blog posts or free courses, for example, but they do not have access to all the information. Anonymous visitors also have restricted rights; they cannot reply to other people, for example. Secondly, there are registered users. These can not only access the freely available information but can also reply, create a profile, and contact other users. The third group of users are “knowledge subscribers”: for a small annual payment, they can access additional products and services. The knowledge subscription is a revenue model for OER. Given that neither the government nor third parties are as yet financing the development of educational content, the OU makes use of a knowledge subscription system. Subscribers are in practice adults who wish to keep abreast of new developments in the discipline, but who do not wish to sign up formally (at least not yet) for a course or programme. They are not therefore students; they cannot, for example, request feedback from instructors or take tests, and they do not receive a diploma or certificate. The Education and Training Institute has, for example, made all the digital learning materials for its Master’s degree courses available to knowledge subscribers. This means that a knowledge subscriber can go through all the different study assignments, including the digital resources. The online master classes will soon also be covered by the knowledge subscription. Finally, actual physical conferences are also organised, which knowledge subscribers can attend at a discount.

With OpenU, the Dutch Open University is so far the only higher education institution to offer students and other interested parties the opportunity for lifelong learning while taking account of learning needs that cannot be satisfied with the traditional educational model. In order to meet the learning demands for people engaged in lifelong learning at higher education level, the OU will seek collaboration with other parties. Experience will show what the impact of OpenU will be. Will there be a shift from courses to knowledge subscriptions, for example? How can facilities for “social learning” be embedded within courses and programmes? Will the OU be able to build long-term relationships with students by means of OpenU, for example because a graduate first becomes a registered user and then a knowledge subscriber (a new type of recurring learning)? What form will the collaboration between the various parties take?

The ultimate test will be whether OpenU leads to a more accessible and flexible range of material that meets the varied learning demands of today’s knowledge workers. The learning experience gained with OpenU is therefore also relevant for all higher education institutions that wish to promote lifelong learning.

OpenU can be found at [http://www.openu.nl](http://www.openu.nl).
Bibliography

Intermezzo 3 - OER Glue

OER Glue? It’s a splendid new feature in the “Open Access” landscape: OER Glue is a powerful combination of:
- a free, simple-to-use online authoring system for Open Courseware;
- tools for assembling and arranging Open Educational Resources;
- social media;
- gadgets and widgets;
- a collection of open courses that you can adapt yourself and then share.

At the moment, OER Glue only works on Google Chrome during the beta phase. If you already want to see how it works, find it on YouTube by searching for “OER Glue”. YouTube has some interesting instructional films that make everything clear.

http://www.oerglue.com/
http://blog.oerglue.com/blog/
Article 4 -
Open Educational Resources from the student’s perspective

Hester Jelgerhuis (jelgerhuis@surf.nl) is the project manager for SURF’s Open Educational Resources programme (http://www.surf.nl/openeducationalresources). The aims of the OER programme are to increase awareness of OER within the Dutch higher education sector, to help higher education institutions develop a strategy for OER, and to encourage the development and use/reuse of OER in higher education. Hester is a member of the core group of the SIG OER.

Introduction

Open Educational Resources (OER) are resources that are made available online for use or reuse. Subject to certain conditions, they can also be copied, adapted, or distributed. This article looks at OER from the student’s perspective: who use OER, why do students use OER, and what do they think of OER? And what opportunities are there for the future?
What are Open Educational Resources?

An increasing number of higher education institutions worldwide are making their courses and other educational resources openly available to students, instructors, and other interested parties via websites and online repositories; as a result, an increasing number of people have access to high-quality educational resources. Open Educational Resources (OER) are resources that are made available online for use or reuse. Subject to certain conditions, they can also be copied, adapted or distributed, often under a Creative Commons licence. Open Educational Resources can consist of separate items – for example articles, presentations, or web lectures – but also combined educational materials such as enhanced publications or whole courses (Open Courseware). OER can play an important role in the transition to an education system that combines innovation, customisation, excellent quality, cost savings, and efficiency.

Who use OER?

The broad accessibility offered by the Internet allows a large but very heterogeneous group to become familiar with various different OER. The consumers for OER are primarily instructors and students. In the case of students, one can broadly distinguish between three different target groups:

- **Prospective Students**: They may therefore be *prospective students* who make use of OER to get an idea of what a programme or institution is like.
- **Students**: There are also *formal learners*, i.e. students who are formally registered with an educational institution and who make use of that institution’s OER or those of third parties for study purposes. Finally, there is also a large group of *self-learners* who are not formally registered with an educational institute but who are interested in OER, and use OER to advance their own knowledge and development. These may be professionals or alumni, for example, and there is a clear link with lifelong learning.
- **Self-learners (e.g. professionals, alumni)**: For the moment, the producers of Open Educational Resources are primarily instructors, who put together various types of materials – for example readers, articles, or presentations – for various educational purposes. It is often forgotten that students also produce OER, for example by uploading their reports, dissertations, summaries, or presentations and making them accessible under an open licence. Students can also help improve educational resources as part of a process of co-creation.

In 2011, Delft University of Technology carried out a survey of users of its Open Courseware. More than half turned out to be students or people choosing a course of study (52%), followed by the “professionals” target group (28%). Only 6% of users were instructors. MIT’s OpenCourseWare site is accessed each month by an average of one million visitors from all over the world. These are students (42%), self-learners (43%), instructors (9%), and others (6%). Other impressive user statistics are provided by the British Open University: since it commenced participation in iTunesU in June 2008, 42,009,900 learning objects have been downloaded (reference date 14 November 2011) by 4,868,700 visitors. And no fewer than 220,000 registered self-learners from all over the world are taking the three “Massive Online Open Courses” launched by Stanford University in the autumn of 2011.

In short, using OER enables educational institutions to reach a much larger target group.
Why do students use OER and what do they think of them?

Students as consumers can benefit greatly from open access to educational resources. They can use them, for example, to watch lectures (or watch them again) or to acquire knowledge that they need for their studies or their work. The large range of OER enables them to select those courses and materials that best fit their learning objectives and individual learning styles, meaning that the education provided can be tailored more effectively to their particular needs.

The 2011 survey by Delft University of Technology showed that visitors mainly utilise the university’s Open Courseware to acquire knowledge within their own discipline, to find out about studying in Delft, and to acquire knowledge from outside their own discipline. As a comparison: visitors mainly use MIT’s OpenCourseWare to increase their knowledge, to successfully complete a course, or to find out about a study programme.

If we look specifically at web lectures, then a study by Noteborn (2011) reveals that Dutch students utilise them mainly for revision purposes, to prepare for tests, and to take notes and update them. They are not generally seen as a substitute for actual lectures. What is striking is that the biggest group of students consists of those who both attend lectures and watch web lectures, followed by those who attend lectures but do not watch web lectures. Half watch the whole recording, while the rest select the parts they find interesting or fast-forward through the recording.

A survey (Hua, 2011) of Chinese students studying in the Netherlands shows that they mainly utilise OER to acquire additional knowledge and to study relevant supplementary course material that can help them prepare (or prepare more effectively) for their examinations and assignments. The Chinese students also said that improving their personal competencies was an important reason for utilising OER, for example to acquire communication skills or to manage their time more effectively.

According to a study by Khezri (2011), Dutch students think that the biggest advantage of OER is having constant access (24×7) to the material and the fact that it is free of charge. According to the students, this makes flexible learning possible because it allows students to study whenever they like. The third most important advantage of OER according to the students is the wide variety of material available in a particular discipline or on a particular topic; that is an impetus for flexible learning. The Chinese students in Hua’s 2011 study agree that OER flexibility is an important advantage, but they also appreciate that OER make it possible to plan their studies and evaluate their own work using ICT. They are much more inclined than Dutch students to recognize the value of OER in improving social relatedness between students, because OER give them the opportunity to develop shared learning activities and to collaborate.

Both the Dutch and the Chinese students worry about the reliability and quality of OER, citing the “inconsistent quality of the materials” as the biggest disadvantage of OER. In addition, the Dutch students believe that OER can have a negative effect on student attendance at lectures and other encounters, decreasing face-to-face interaction between students. The Chinese students also mention two other disadvantages. They consider the lack of a system of rewards – for example in the form of diplomas or certificates – to be a genuine problem with OER.

As barriers to using OER, the Chinese students also mention the lack of the right software (to use the OER), the lack of time – which prevents them searching extensively within the vast and unorganised supply of OER – and the lack of OER in their own language.

These surveys by Khezri and Hua reveal interesting differences between the Dutch and Chinese students as regards the type of OER that they prefer. The Dutch students, for example, prefer instructional videos, complete online courses, and Word or PDF documents, and they express little need for discussion forums, Wikipedia documents, and games or simulations. The Chinese students also say that Word or PDF documents are most important for them, but in contrast to the Dutch students they attach a great deal of value to discussion forums to support the online learning process.
The next step: opportunities and trends

The survey by Khezri (2011) reveals that more than two thirds of the Dutch students surveyed say they can envisage playing a role in the production of OER. The majority would prefer to do so, however, in collaboration with instructors or fellow students. Only 31% say that they do not wish to develop OER themselves. Two thirds of the students also say that they are prepared to share educational resources; one third say that they are not.

This picture of the student as a producer or prosumer – which is also confirmed, incidentally, by other studies – fits in entirely with the concept of “Generation C”. That generation – born after 1990 and consequently after the “digital revolution” – is the first generation to grow up entirely within the digital reality. They find it perfectly normal to have a wide range of information and knowledge available that they can easily share with others and can adapt with others as part of a process of co-creation.

It is precisely these activities that form the basis and create the conditions for the further development and embedding of OER within education and elsewhere. It therefore seems an obvious step to involve students to a greater extent in the production of OER. They can also act as pioneers and encourage other stakeholders to participate in and invest in the development of OER.

To summarise, there are therefore major future opportunities for the higher education sector as regards:

- the power of co-creation: involvement of students as producers/co-producers of OER;
- the power of social networks: make use of open study communities and learning within networks;
- the power of sharing: sharing OER enables an educational institution to reach a large new worldwide target group;
- the power of new business models: the use of open e-books, Massive Open Online Courses (MOOC), enhanced web lectures.
Inspiring examples of OER with students in the role of prosumer:
- Massive open online courses (MOOC) with a prominent role for students: Stanford University (with no fewer than 220,000 registered “students” from all over the world!) or Digital Storytelling (with students as producers of radio, TV, and test questions, and as bloggers and tweeters);
- Students as bloggers (sharing student assignments and reviews with instructors, fellow students, and especially the commercial sector/labour market > communities of practice between students and the labour market > opportunities for knowledge valorisation);
- Open Study (social learning networks);
- HBO Knowledge Base or thesis banks at institutions (open access to student theses);
- Lecture Leaks (sharing lectures)

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Intermezzo 4 – MOOC: Massive Open Online Course

MOOC is the abbreviation for Massive Open Online Course, a course created and set up solely via the Internet by one or a few initiators. MOOCs are a response to all the movements active in the area of Open Education and linking and combining knowledge. What is involved is interacting and learning with and via colleagues. MOOCs are often accessible internationally and there may be a very large number of users – the biggest that we are aware of has some 200,000 users.

The idea for MOOCs comes from George Siemens and Stephen Downes, and they have been followed by many others. On his weblog, George Siemens says, for example that Stanford Engineering has its own online MOOC class on artificial intelligence, with external students being welcome.

For more information and for “how to start your own MOOC”: MOOC guide. A good explanation is given in this YouTube film: What is a MOOC? An enthusiastic article with URLs: article by Inge de Waard.
Part B: The content-related perspective on Open Educational Resources

**Article 5:** Access, accessibility, and use of Open Educational Resources, by Nicolai van der Woert (Radboud University Nijmegen Medical Centre).

**Intermezzo 5:** Web addresses of repositories and OER/OCW search engines

**Article 6:** Content curation: a new way of monitoring “The Truth”?, by Ellen Kuipers (HAN (Arnhem/Nijmegen) University of Applied Sciences)

**Intermezzo 6:** Scoop-it (OER pages)
Article 5 -
Access, accessibility, and use of Open Educational Resources

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Is open access stagnating?

Over the past ten years, a respectable number of higher education institutions have put a lot of work into publishing OER. The OER are generally stored in a publicly accessible repository, i.e. a searchable database in which OER are described by means of metadata and made accessible via search functions. Increasingly, these repositories can also “harvest” from one another. What can be harvested elsewhere is then also known about and is available via the portal of another repository. There is now an extremely wide range of OER for virtually all disciplines, and the basic infrastructure for searching and finding them is quite well organised.

This all sounds splendid, but unfortunately the use made of OER in actual educational practice is lagging behind the expectations. This applies both to the use made of OER by the staff of the institution that publishes them and by their colleagues at other institutions.

This finding raises various questions. Why are repositories of OER being used so ineffectively? And above all, how can this situation be rectified, and what initiatives are already being taken?
Impact study

In the United Kingdom, a great deal of money – some GBP 15 million – has been made available in recent years to construct an OER infrastructure. A lot of institutions have constructed repositories and fill them with OER, and at national level there have been good results. An impact study by Oxford University (Masterman & Wild, 2011) shows that a good foundation has been laid. There is, however, still much room for improvement on the road to success. The main factors with a negative effect on OER use are as follows:

- Instructors still do not sufficiently understand the potential of OER.
- Instructors are still insufficiently aware of the usefulness and need for the Creative Commons licences in relation to intellectual property. Not all the material is in fact subject to a licence.
- The above two points apply even more to students.
- Few OER are available for less common topics. In general, critical mass has not yet been reached for most topics.
- Interdisciplinary searching is not a simple matter.
- Low granularity learning objects are popular (for example separate pictures, video, audio, short texts). If one is less at home with the content, then complete lessons or lesson series are also popular. Instructors value having a say in the matter.
- The content and quality of AV material is difficult to assess without a transcript.
- Students are not always ready to pay more for educational resources that are also available online free of charge. This can result in reduced utilisation of OER.
- Use is negatively influenced by poorly indexed material, poor search engines, mandatory registration with a repository, being obliged to download software so as to gain access, and an unreliable host infrastructure.
- Instructors who are working alone or without support may pull out if traceability is poor or if search engines are slow.
- Support from the institution has a positive effect (policy, training, central approach), but this is often lacking.

Experience in the field

Various presentations and informal discussions at the OER11 conference in Manchester (see the report on the SIG OER blog) made clear that people feel rather embarrassed that after so much money has been spent, the actual use made of OER is lagging behind the expectations. There are certainly a lot of visitors, but fewer downloaders and less actual use, certainly beyond the boundary of the individual institutions. These are some of the reasons that were mentioned at the Manchester conference:

- Too few instructors find their way to and around the repositories;
- User-friendliness is often disappointing;
- The “not made here” syndrome still frequently seems to play a role;
- Search structures are often not very user-friendly;
- Instructors lack the skills needed to actually put into practice the concept of “Reuse, Redistribute, Revise, Remix” in their own educational practice;
- An OER cannot always be reused directly; in many cases, a redesign, a repurpose, or a remix is necessary. Instructors often lack the time or support for this;
- The repositories are often so large – with all the various disciplines within a single system – that a slow, monolithic monster is created;
- During the course of the project, everybody is highly motivated, but afterwards the necessary incentives are lacking;
- Unfamiliarity with OER also plays a major role among both students and instructors.

Solutions

Fortunately, there were a number of speakers who presented solutions and effective examples as utilised within the institutions. Narrowing down the range to a single discipline or faculty can often help, for example by making the search functions and the OER part of a community of practice for instructors and/or students. It then becomes possible to communicate and collaborate more directly with a single target group, and more is feasible than just OER. In fact, a social layer is created around the repository, so that users feel to a greater extent that it is “theirs”. This increases long-term use.
Another way of focusing more effectively on a discipline is to add a discipline- or topic-oriented presentation layer. One good example of this is the ALTO project at University College London. An open learning environment was created for the arts subjects in the form of an educational ecosystem. This produced a fine website with OER. An additional effect is that an unexpectedly large number of external visitors make use of the material because it is so accessible.

Success factors

The E-evolve project at the University of Central Lancashire describes a number of success factors for the use/reuse of OER:
- Ensure the autonomy of the material. The learning object must be autonomous;
- Ensure that the material can be adapted. It must be a simple matter to create derivative works;
- Ensure that the material is accessible, easy to find, and properly described;
- Ensure that the material can be shared via a Creative Commons licence, thus making possible reuse, revising, remixing, and redistributing;
- Ensure that the material can be used/reused for a long period. Make use of the right technology and keep it up to date;
- Ensure interoperability. It must be easy to exchange material (format, content, setting, or context).

Get students involved?

In addition to all the possible measures mentioned to make instructors more aware of OER, it is also naturally important to provide better facilities for the students and to approach them as co-creators of OER. One example is the experiment taking place at Radboud University Nijmegen Medical Centre (RUNMC) to familiarise medical students with OER. Students have a
A major need for practical accounts by doctors and for accounts by patients of their experience. The [www.myhealthstory.me](http://www.myhealthstory.me) website provides these in the form of video testimonials that have been assembled by means of crowdsourcing. Students in the higher years then assess whether the content of the video is correct and ethically acceptable (this is a type of “content curation” and peer review). The videos are then categorised and uploaded to the site, where they are available on an open access basis.

**Time for new platforms?**

Another issue is whether the classic electronic learning environment (ELE) has been optimised for the use of OER and OCW; there tends to be only a link to a repository at the very most. Other types of platform are in fact appearing that are more suitable for OER/OCW.

One example is peer2peer university, where OCW are made available and students work by means of peer feedback and peer tutoring; the materials are also improved by the lifelong learners themselves. Another example is [OER Glue](http://www.uclan.ac.uk/lbs/e-evolve/index.php), where OCW are not just available but can also be immediately adapted or reconstructed using a Web authoring tool. The authors are the curators of the content, and worldwide access also means that they can draw on a large knowledge network.

An increasing number of apps are also becoming available for tablet computers and smartphones that provide access to OCW or lectures, thus making mobile learning extremely simple.

Finally, there are MOOCs (Massive Open Online Courses) which can be taken by large numbers of students from all over the world, and where knowledge workers can meet.

These are all in fact examples of Open Educational Services, and they may well become serious competitors for the classic ELE. What is striking is that these trends often operate outside the structure of an institution, or in fact connect up the range provided by several institutions. There is also an increase in the options for informal learning within the more recent platforms. Where the classic ELE supports the push strategy that still applies at the majority of institutions, the new platforms tend more towards a pull approach: the focus is more on the user and his/her requirements.

**Conclusion**

The field is in a state of change. A transformation is underway in which classic repositories and ELEs are gradually being replaced by systems that are much more user-friendly, are better attuned to the demands of instructors and students, and that offer far more functions. New ways of creating education, learning, and teaching are being introduced. However, the driver for this transformation is not primarily to be found in more modern technical possibilities; it is education itself that is changing due to the influence of social factors. This requires that instructors and students be given more opportunity to become familiar with OER/OCW, with support from the institution being indispensable.

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- [http://blogs.arts.ac.uk/alto/](http://blogs.arts.ac.uk/alto/)
- [http://process.arts.ac.uk/](http://process.arts.ac.uk/)
Intermezzo 5 - Web addresses of repositories and OER/OCW search engines

To find out more about what is actually available in the way of Open Educational Resources, it is illuminating to take a look at some of the following repositories and OER search engines. (The list does not claim to be exhaustive.)

Repositories
- Ariadne
- Wikiwijs
- Delft Open Courseware
- Dutch Open University
- Leiden Open Courseware
- Jorum
- Open Nottingham
- MIT OpenCourseWare
- Stanford iTunes
- iTunes U
- OpenLearn,
- MedEdPORTAL
- www.healcentral.org
- Open Michigan
- OER Africa
- Australian Flexible Learning Framework – Learning Object Repository Network (LORN)
- Development Gateway
- Globe
- Internet Archive, Education
- LectureFox
- MERLOT (Multimedia Educational Resources for Learning and Online Teaching)
- OER Commons
- OpenCourseWare Consortium
- Open Course Library
- OWL Institute – Open Educational Resources
- OE Portal Resource Centre
- ParisTech OpenCourseWare
- OER initiative New Zealand
- SOFIA (Sharing of Free Intellectual Assets) OpenCourseWare
- Universia OCW
- Utah OpenCourseWare Alliance
- HBO Kennisbank
- Connexions
- The gateway
- Saylor foundation
- Organic Edunet Federation
- Rural Inclusion Observatory
- Language Learning Resources Portal

OCW/OER search engines
- Commonwealth of Learning (CoL)
- Discover Ed
- FolkSemantic
- Freelearning – Search for OER sites
- Google OCW
- OER Recommender
- OCWFinder
- OER Commons
- OER Dynamic Search Engine
Article 6 -
Content curation: a new way of monitoring “The Truth”?

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Introduction

So many Open Educational Resources are now available that they form something of a jungle. So much educational material is produced that it is often difficult to find separate material that is both of high quality and also provided with metadata (i.e. information about the programme, academic year, required prior knowledge, level, utilisation options, whether it is being reused or has been enhanced). Can “content curation” provide a solution? Can it contribute to structuring open content, and can it provide a kind of quality guarantee for that content? And if high-quality content is available to everyone, does that mean the end of the educational institution?
Content curation: just what is it, and what different kinds are there?

“Content curation” means finding, evaluating, enhancing and/or commenting on, and sharing information about a given subject. Doing this requires a “content curator”.

A content curator is a critical knowledge broker who seeks, collects and shares on a continuous base the most relevant content in her area of expertise. In the near future, experts predict that content on the web will double every 72 hours. The detached analysis of an algorithm will no longer be enough to find what we are looking for. To satisfy the people’s hunger for great content on any topic imaginable, there will need to be a new category of individual working online. Someone whose job it is not to create more content, but to make sense of all the content that others are creating. To find the best and most relevant content and bring it forward. The people who choose to take on this role will be known as Content Curators. (Rohit Bhargava, http://rohitbhargava.typepad.com/weblog/2009/09/manifesto-for-the-content-curator-the-next-big-social-media-job-of-the-future-.html/, consulted 24 October 2011)

Every day, we receive large quantities of information via various media and our social network that we need to process. With the aid of content creation, the content curator quickly, efficiently, and effectively shares knowledge with his/her social network. Members of that network can then share that knowledge again, or comment on it and/or enhance it.

Sharing knowledge is extremely important, particularly in a world that is becoming increasingly “open” – i.e. transparent – thanks to information technology. Large quantities of information reach us each day via various media, thus creating a need to structure this mass of information and to classify, enhance, and comment on it. This creates a need for content curators.

There are many different platforms where large numbers of people share knowledge each day, for example Twitter, Facebook, LinkedIn, and Wordpress. The need for content curation has therefore increased enormously, as reflected by the number of tools available for that purpose. Examples of new platforms that are extremely suitable for sharing content include Scoop.it; Storify; curated.by. (For an extensive list, see also 30+ Content Curation Tools.)

We will take a closer look at Scoop.it. This platform is very simple to use. You create an account and then a topic, you add a bookmarklet to your browser, and you can then simply “scoop” each site, tweet, or post at any moment you like. You can use the dashboard to include sources (websites, RSS feeds, social media accounts, etc.) and indicate relevant keywords. Scoop.it then does the work and provides you with a constant flow of the content that you may be interested in. You can then select the material that you wish to share. You can share the content that you add to your Scoop.it topic via Google+, Twitter, Facebook or Wordpress, and in this way keep your social network abreast of your latest scoops. Other content curators can also recommend a post to you so you can add it to your topic. The posts are presented in an attractive “magazine” style.
A community has now developed within Scoop.it. You can follow one another’s topics, and if someone in your social network launches a topic, you will be notified and can decide whether to follow it. Scoop.it began as an “invite only” beta version. On 3 November 2011, it announced that it is now open to everyone: Everyone is a publisher. In this YouTube film clip, Scoop.it presents itself as a web publishing tool that is simpler to use, simpler than a blog, for example. This tool focuses on user-friendliness, speed, low cost (or no cost), and simple sharing via other social media. (See also Content Curation World, topic on Scoop.it).

Scoop.it has now also launched Scoop.it Education: “… feedback we have received was the voices from the education community, expressing their need to make Scoop.it even more helpful in the classroom and beyond. Many teachers and students use Scoop.it to work on a specific research topic and to curate collaboratively, engaging a class to build a tremendous resource together. It is an amazing goal of curation to facilitate a dialogue on both sides of the table. Educators are natural curators and this curation provides a great way to give guidance; reinventing the way you interact with your class” (http://blog.scoop.it/en/category/news/).

What developments are there in this field?

- Content curator as a profession, or content curation as part of your job.

In the future, businesses and institutions will employ content curators with a view to knowledge sharing. They will collect content that is potentially important or interesting for the company or the sector. Educational institutions will create topics related to the subjects of their programmes, with the aim of being able to quickly and easily assemble, process, and publish that content, and share it as an online magazine with instructors, students, colleagues, and other interested parties.

Content curators will need to be appointed to carry out this work for the various programmes and disciplines. Instructors and students will naturally make suggestions to the content curator, but it is much more likely that the instructor of the future will in fact be a content curator. Instructors are the people best able – with the help of their network – to evaluate the information, and they can share valuable content with their students, taking account of the level for which those students are being educated. The instructor is both a content expert and a didactic expert. As a content expert, he/she is able to collect the information available, evaluate it, and then structure it. As a didactic expert, the instructor is able to ensure that the learner can understand the information, for example by placing it in the right context, providing it at the right moment, associating it with the right teaching/learning format, etc. Content curation can be expected to operate interactively within the educational setting: students will not merely be consumers of a topic but will be able to recommend posts and commence topics themselves.

Instructors and educators are by their nature people who share knowledge, making it highly likely that they will embrace the task of content curation. One relevant issue is that of time: content curation makes demands on the curator’s time, and institutions will need to make the necessary provisions for instructors in that regard. Content curation will thus become part of the instructor’s job profile.

- Publishers as content curators.

A great battle is currently taking place between the OER movement and publishers. It is understandable that the latter are not too happy about “open” education. The world of publishing – as opposed to the world of education – is reaching the end of its useful life. In other words, publishers will need to think about a different business model. Perhaps they can play a role as content curators, i.e. by collecting, structuring and evaluating open content, and presenting it clearly. Major success factors will be interactivity and co-creation along with didactic experts (reuse and supplementation of existing OER will need to be encouraged). It will be extremely valuable if the instructor can indicate, in a relatively simple manner, what target group the material is suitable for, what prior knowledge is required, what the relevant learning objectives are, what teaching/learning format has been applied, what testing method has been used, and what has been added to the material. Material will also need to be traceable: the instructor needs to be able to see what the development path has been of the OER — i.e. who added or altered what, and when — and also which other institutions are utilising the resource concerned. All of this contributes to the goal of making knowledge available to everyone. Needless to say, we are still talking about open content that is accessible to all (i.e. not just to people who can pay for it), is published under a Creative Commons licence,
and is without commercial interests: *The gift and not the favour* (Seth Godin, keynote presentation at Educause 2011).

Publishers can facilitate all this. As yet, however, it is not clear what the publisher’s revenue model will be.

**What does all this mean for education and for OER?**

The added value for education is enormous. For OER, this development can make it possible to share all kinds of digital resources and the latest news about a particular subject with colleagues, students, your social network, and other interested parties – and do so quickly, efficiently, effectively, clearly, and in chronological order.

Currently, there are a lot of OER in a lot of different locations. It is conceivable that your social network will notify you of content that is of interest to you personally and to your discipline or study programme. An instructor can find suitable OER in this way, and consequently has some guarantee regarding their quality; after all, someone within his/her network has designated that content as being useful. Students can find the right content via their network, instructor, or fellow students.

A physics instructor, for example, would be notified of the existence of new material or material that has been enhanced, added to, adapted or translated, or that relates to the most recent publication on relativity, etc. One dream is for the instructor to be able to follow a topic such as “secondary school physics” or “first-year university physics”. A content curator will keep track of the latest scoops in that field, assisted by people following that topic who recommend posts. The community that develops around a topic will also guarantee the quality of the content: the wisdom of the crowd.

Content curation has not yet matured, but we would appear to be on the right track. Content curation could be the answer here. However, a warning is necessary. It is not desirable for everyone to become a content curator, as is currently the slogan of Scoop.it. Here too, there is the danger of creating a jungle, and how would one then be able to identify the most valuable content?

Another issue is what content curation means as regards the “up-to-date-ness” and “shelf life” of education. Content curation makes it easier to keep education up to date because the instructor becomes aware more quickly of the latest news in his/her discipline (assuming that he/she follows a topic concerning a specific discipline). As already noted, content curation can make OER more accessible, and help structure the OER that are available. This will basically give every learner access to information that is of good or even excellent quality.

This definitely does not mean the end of teaching. The strength of institutions is to be found in the way they facilitate the provision of a good education and not so much in providing high-quality learning resources. The interaction between the instructor and the student, and between the students, is of inestimable value within the learning process. Moreover, the learner will need to demonstrate at some point by being assessed that he/she has achieved a certain level. In order to do so, he/she will need an educational institution.

It may well be that a high-quality topic launched by an institution will attract future learners. That topic will make them aware of the institution, and they will know by experience that it guarantees good quality. If they ultimately have an education requirement, they will approach the institution in order to have that requirement fulfilled. OER and education in fact go hand in hand.

**In conclusion**

To return to the issue of quality: does this involve quality assurance, monitoring “The Truth”? We all monitor “The Truth”!

The power of content curation is to be found in the community, the number of users. Take the online encyclopaedia Wikipedia, for example. Wikipedia came in for a great deal of criticism just after it was set up because it was supposedly unreliable. Everybody could just write any old nonsense, and that nonsense would then be accepted as true. Some years ago, however, the scientific journal *Nature* wrote that Wikipedia was virtually just as reliable as the *Encyclopaedia Brittanica* (http://tweakers.net/nieuws/40356/wikipedia-net-zo-betrouwbaar-als-encyclopaedia-britannica.html, consulted 3 November 2011.)
Internet sources

- http://www.ilovesseo.net/content-curation-definition-and-generation/, consulted 24 October 2011
Intermezzo 6 - Scoop-it (OER pages)

Scoop.it provides content curation tools to curate your favourite subject. Based on your keywords, the tool selects a current range of feeds, reports, tweets, and websites. The curator selects those that are relevant to be placed on the Scoop-it site. This has a great deal of potential for education. Instructors can, for example, make a selection of relevant, high-quality links. OER themselves are already a topic for a number of Scoop.it curators.

Take a look at these Scoop-it sites:

- The 21st century
- OER, OEP MOOC, openness
- Open Educational Resources
- Open Education Resources
- OLnet OER research
- OER11 conference
- Open research and learning
- OER in Higher Education
- Being practical about OER
- MOOC: Massive Open Online Course
- Massive Open Online Courses
- EpCoP Massive Open Online Course
Part C: The technological perspective on Open Educational Resources

Article 7: OER platforms, by Martijn Ouwehand (Delft University of Technology)

Intermezzo 7: peer2peer university
Article 7 - OER platforms

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Introduction

In order to share educational resources via the Internet, you need a platform. In the first 10 years after MIT began sharing educational resources in 2001, the platforms were supply-driven. In the next 10 years, there will be more emphasis on use/reuse, for example in the form of Open Educational Practices (OEP). But what consequences will this have for present and future platforms?

http://ocw.mit.edu/about/next-decade/

A lot of institutions begin sharing educational resources by offering their own resources to others. That trend was apparent particularly in the first 10 years, and it still often applies to institutions commencing projects for Open Educational Resources (OER) or Open Courseware (OCW). In the Netherlands, the Dutch Open University and Delft University of Technology adopted the same approach when they began publishing OCW (in 2006 and 2007 respectively). A number of platforms are available based on this supply-driven approach (WebCMS, Dedicated Platforms, Digital Learning Environments, Repositories). Various examples will be given for each type of platform, although these examples are not unique.

- **WebCMS**
  As with the normal provision of information, educational resources can be provided using a WebCMS, on which an Internet page is developed. Initially, which system is used does not really matter. There are no really specific requirements regarding the platform except that the material provided is openly accessible; there are often no educational activities in the first instance and the only point is to provide access to material. It is advisable, however, to select a platform with which one’s own institution is already familiar. Delft University of Technology, for example, utilises the Open Source WebCMS “Typo3”. This is already available, the institution has already used it, and support for it has been arranged. Other aspects become relevant, however, when educational resources are published. An instructor may well want to alter his/her own material behind the scenes before it is made openly available. Publishing OER may also involve other specific functions which are less necessary for the ordinary institutional websites, for example effective and attractive presentation of the material (for example streaming video, lesson materials, and interactive tests). All this involves tailor-made work, and can therefore cost time and money. An (Open Source) WebCMS offers possibilities in this regard.

- **Dedicated platforms**
  Dedicated platforms are also used, i.e. platforms developed especially for a specific purpose. “EduCommons”, for example, was developed specifically in order to publish Open Courseware. EduCommons offers a standard platform – which does need to be installed by the institution itself – and has in particular a workflow mechanism to assist in the publication process; It is used by the Dutch Open University. Needless to say, there are also platforms such as iTunesU that can be used to publish Open Educational Resources (separate objects). This too is a dedicated platform especially intended for sharing videos. This initiative seems lower-threshold than the publication of Open Courseware, for example, and iTunesU in fact has a greater presence within higher education in the Netherlands. (See also a blog report from OER regarding the use of iTunesU.)

- **Digital Learning Environment (DLE)**
  Digital Learning Environments (DLEs) are also used, and various open source packages are available, for example Moodle or Sakai. Digital learning environments specifically aim to support the learning process of students registered for programmes at the institution concerned. (They are generally organised at the level of a particular discipline.) It is therefore often awkward to make them available to students from outside the institution. In the initial phase, Delft University of Technology experimented with DLEs, but it ultimately switched to a WebCMS because this made better management and presentation possible of the public (!) content. On the other hand, the British Open University does make use of a DLE (OpenLearn). It is also possible to remix OER via the Labspace in OpenLearn.

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9 [http://ocw.tudelft.nl](http://ocw.tudelft.nl)
10 These alterations may concern copyright as regards open publication, but also privacy issues. Examples might be a medical programme in which a great deal of patient data is integrated into the educational material, names of students, etc., but also anonymizing student work, removing time-dependent information such as lecture hall scheduling, etc.
11 [http://educommons.com](http://educommons.com)
12 [http://opener.ou.nl](http://opener.ou.nl)
• **Repository**
Finally, educational resources can also be shared via repositories, specifically because these platforms greatly increase traceability. They make it possible, for example, to develop new packages, which can then be shared. In the Netherlands, Wikiwijs\(^{14}\) is available, for example.

• **Supply-driven approach: low-requirement platforms**
Use is often made of existing platforms. A supply-driven approach does not in fact impose any great demands on the platform: the main concern is to provide access to material without educational activities being involved. The platform does not therefore really need to support those activities. However, presentation (graphical), usability, searchability, and suitability for search engines and repositories (and linking to them) are important. Ideally, the platform should support the publication workflow (also usability) but that is often already the case. What is important, however, is to select an existing solution that also offers organisational support.

**Trend 2011–2015: Open Educational Practices**

At the OCWGlobal 2011 conference that it organised in 2011,\(^{15}\) MIT — supported by the OpenCourseWare Consortium — announced that the emphasis needed to shift away from merely supply-driven thinking to encouraging the use/reuse of educational resources of others and by others. A great deal of material is now available, but the actual use of previously published material often lags behind. One trend that is apparent is the rise of Open Educational Services and Open Educational Practices.

• **Open Educational Services**
An increasing number of open initiatives are becoming available to support “informal learning” with educational resources, for example Open Study and P2PU. These services do not themselves provide resources but rather services for existing resources (i.e. resources already published by other institutions). Open Study\(^{16}\) offers a forum, organised around study groups, that anyone can join free of charge. Every member can ask questions, and also answer them. Thanks to the study groups, these questions are linked to existing educational resources.\(^{17}\) P2PU goes a step further by linking up learners with the goal of providing assistance in taking online subjects. This creates a kind of instructor-pupil relationship between learners, without geographical or other boundaries.

• **Open Educational Practices**
Another trend is that the concept that appears to facilitate P2PU is also being introduced in the context of formal learning. The University of Phoenix, for example, offers programmes and certificates based on educational resources available online,\(^{18}\) and Stanford University has also experimented\(^{19}\) with Massive Open Online Courses (MOOC): a standard course is made available (with guidance) for anyone in the world. Students who take the course also receive guidance and certificates. More than 220,000 students have already registered. Delft University of Technology also intends experimenting in this way. A Master’s degree will probably be offered online as well as face to face. The material will continue to be based on supply-driven material that has already been published.\(^{20}\) However, associated services such as the digital learning environment and social software can also play a role in facilitating the online educational activities.\(^{21}\)

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\(^{14}\) [http://www.wikiwijs.nl/](http://www.wikiwijs.nl/)
\(^{16}\) [http://www.opensstudy.com](http://www.opensstudy.com)
\(^{17}\) See for example: [http://ocw.tudelft.nl/ocw/open-study/](http://ocw.tudelft.nl/ocw/open-study/)
\(^{18}\) [http://www.phoenix.edu/](http://www.phoenix.edu/)
\(^{19}\) [https://www.ai-class.com/](https://www.ai-class.com/)
\(^{20}\) [http://ocw.tudelft.nl](http://ocw.tudelft.nl)
Complementary platforms

The choice of platform depends mainly on the particular objective. The supply-driven components of Open Courseware would seem to do well with a WebCMS or a dedicated service. OER are effectively traceable via repositories, with remixing being perfectly possible. If the emphasis is on learning processes, the digital learning environment is more interesting. A combination of different platforms will often prove valuable, whether this is a combination of the selected platform within which the material is published and an Open Educational Service, a digital learning environment, or a repository. Delft University of Technology, for example, envisions a combination of the WebCMS that is used (Typo322) and the digital learning environment Blackboard.23 These platforms are already available for the institution and they complement one another: a WebCMS can display the material effectively, while the digital learning environment acts as a supplementary environment to assist in the learning process. It would also seem that Blackboard is increasingly keying into this “open movement”.24 The material that Delft University of Technology provides as Open Courseware will also be made more widely traceable by means of links to repositories, for example Wikiwijs.

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22 [http://ocw.tudelft.nl](http://ocw.tudelft.nl)
23 [http://blackboard.tudelft.nl](http://blackboard.tudelft.nl)
24 [http://www.e-learn.nl/2011/10/19/blackboard-follows-me-into-open-education](http://www.e-learn.nl/2011/10/19/blackboard-follows-me-into-open-education)
• Open standards
It is important when linking different platforms and services to utilise open standards. This makes it easier to create links because the standards are open, i.e. independent of any particular platform. “Closed” standards are linked to a specific platform or a specific service but they therefore speak their own particular “language”, which cannot be understood by other platforms or services. The LTI and Common Cartridge IMS standards are particularly relevant here.25 These are increasingly being seen as the leading open standards and used in order to link services. With many supply-driven platforms, this standard will not yet have been implemented, although things would appear to be changing in this respect. Blackboard, for example, does appear to be participating in this movement.26

• The cloud
Currently, most materials are still managed by the institutions themselves. However, the trend towards cloud computing27 is rapidly gaining ground in the world of education: data is no longer stored in self-managed systems but “somewhere” on the Internet. Expectations are that Open Educational Resources will join this trend, certainly because privacy and security are of less importance than in the case of ordinary educational resources that are not shared publicly. This trend is already visible in the sharing of specific materials, for example video (YouTube) and presentations (Slideshare). Stanford University’s MOOC also makes use of this system.

Conclusion
The short-term trend as regards Open Educational Resources and Open Courseware primarily involves their use/reuse. Open Educational Practices, in particular, are currently high-profile applications, and it would seem that this movement will be broadly imitated. In the Netherlands, for example, Delft University of Technology intends experimenting with the open provision of Master’s degree resources for students from outside the institution.28

The supply-driven publication of Open Courseware or Open Educational Resources imposes fewer demands on platforms than Open Educational Practices, with educational activities in relation to the published material playing an important role. The decision as to which existing platforms or Open Educational Services – or a combination of or within these – depends on the purpose and situation. Open standards are extremely important in order to create the links between them. At the same time, material is also made more suitable for specific target groups (MIT)29 and for reuse if the material takes the form of modules (Delft University of Technology). The impact of the shift towards use/reuse of OER is also apparent in the way in which resources are provided.

26 http://www.e-learn.nl/2011/10/19/blackboard-follows-me-into-open-education
Intermezzo 7 - peer2peer university

There are also OCW initiatives outside the established institutions. Peer2peer University is a good example. It operates entirely on the basis of volunteers and students who assist one another with their studies: i.e. learning and teaching with and by peers. The target group is made up of lifelong learners who can participate in the P2PU learning community free of charge. Quality assurance and continuous improvement of the resources are also based on peer feedback.

http://p2pu.org/en/
See also Philipp Schmidt’s presentation on P2PU at OpenEd 2011.
Part D: The organisational perspective on Open Educational Resources

Article 8: Open Educational Resources in the Netherlands: Whither and Why?, by Ria Jacobi (Amsterdam University of Applied Sciences)

Intermezzo 8: OER commons

Article 9: Open Educational Resources and “business models”, by Ben Janssen and Robert Schuwer (Dutch Open University)

Intermezzo 9: OLnet evidence hub

Article 10: The love-hate relationship between OER and copyright, by Martijn Arnoldus (Creative Commons Netherlands, Kennisland)

Intermezzo 10: The role of UNESCO

Article 11: The LOGIC of national strategies for Open Educational Resources, by Fred Mulder (Dutch Open University)

Intermezzo 11: OpenCourseWare Consortium

Article 12: An international perspective on OCW, by Willem van Valkenburg (Delft University of Technology)

Intermezzo 12: COL - Commonwealth of Learning
Article 8 -
Open Educational Resources in the Netherlands: Whither and Why?

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How can OER\textsuperscript{30} find its way onto the policy agenda of higher education institutions?

Gut feeling – that’s how it usually starts, at least with the pioneers who have started utilising OCW/OER in the Netherlands. A university rector becomes enthusiastic about an idea or about a successful example at another institution (perhaps abroad). He takes the idea back to his own institution and discusses it with the faculty managers. If they are also enthusiastic, then the ball starts rolling.\textsuperscript{31}

\textsuperscript{30} Within the institutions, the terms Open Courseware (OCW) or Open Educational Resources (OER) are used. Both are comprised within the term Open Learning Resources. The term OCW/OER is therefore used in this article.

\textsuperscript{31} At the Dutch Open University, the relevant ideas were first introduced at the event to mark the departure of the then chairman of the board, Thijs Wöltgens, in 2005. The Ministry of Education, Culture and Science wanted the OU to initiate an experiment to publish its educational resources. The OU later received a grant from the Hewlett Foundation. The experiment became the OpenER project.
How does it work?

A steering committee or working party is often set up initially. A project and pilots are also started. The purpose of all this is to gain experience with OCW/OER, to evaluate things in practice, and to assess the impact. But there is still no actual policy. One or two years of strategic planning follow in the light of experience within a project, i.e. to prepare policy. The Dutch Open University (OU) and Delft University of Technology have a number of years of project experience with OCW/OER.

A defining policy is then drawn up, meaning that a project can be structurally embedded. That also means that funds have been made available. Leiden University (LEI) and Avans University of Applied Sciences will also draw up a policy in the light of the experience gained with the OCW pilots. The University of Groningen (RuG) has set out proposals in a long-range plan and these have now been embodied in a project plan which, after a period of inaction, is now in the implementation phase.

In the Netherlands, use of OCW/OER is limited. The OU and Delft University of Technology have been the first to take the initiative, and Radboud University Nijmegen Medical Centre has also been involved for a number of years. A number of other educational institutions (HAN (Arnhem/Nijmegen) University of Applied Sciences, Leiden University, the University of Groningen, and Avans University of Applied Sciences) have recently started to become involved.

What are the reasons, opportunities, and options regarding OER/OCW for these institutions, and how are they embodied in policy? That is the subject for the present article. It is important to note that when this article was being produced, those institutions were approached that are taking Open Courseware or Open Educational Resources as a starting point for policy, i.e. the publication of digital learning resources that can be used, on certain conditions, by anyone anywhere in the world. This may involve a variety of materials: Web lectures, tests, texts, and visual material.

What role are OER/OCW allocated in the institution’s policy?

Support base
One important factor in the rollout of OCW/OER is the creation of a support base, particularly within the institution’s Executive Board. At Delft University of Technology, the Dutch Open University, Radboud University Nijmegen Medical Centre, and Leiden University, the development was initiated top-down. At the University of Groningen and Avans University of Applied Sciences, it was bottom-up; in all cases, however, a project was only started or a project plan was only written if the Executive Board considered that the institution had something to gain by it.

Reasons
The three main reasons that institutions mention for utilising OCW/OER are:
1. to improve the quality of educational resources;
2. to facilitate the study choice process for students (i.e. secondary school pupils, international students): educational resources give a realistic picture of a programme;
3. to enable students to undertake additional study.

The table below shows the reasons for each institution and the phase they have attained.
“cross-fertilisation”
- Improve the quality of educational resources
- Make educational resources available to students for additional study or for remedial purposes
- Exposure and profile as an institution/programme/instructor

Leiden University
Started in 2010, experimenting, pilots
- Educational innovation
- Exposure and profile as an institution/programme/instructor

Avans University of Applied Sciences
Preliminary investigation, commencing with pilots in 2011
- Encourage internationalisation: make information accessible for international student target group
- Branding: showcase the features of the institution
- Collaboration: exchange materials, for example for transition programmes between senior secondary vocational education and higher vocational education

University of Groningen
Preliminary investigation
- Improve the quality of educational resources
- Assist in improving choice of programme: students make their choice on the basis of realistic material
- Ranking: OCW are expected to play a role in rankings. Universities that publish educational resources online often provide a better quality of education.
- Alumni relations: enable them to keep up with their discipline
- Exposure: show what the institution has available

Radboud University Nijmegen Medical Centre
Started in 2005 with EU project, now various projects; policy will be determined in 2011/12
- Combine educational and care innovation
- Reach other target groups (labour market problems)
- Cheaper production of educational materials, better quality
- Make discipline more transparent and more accessible
- Facilitate and encourage lifelong learning
- Branding and exposure
- Assist secondary school pupils to choose a programme, provide reasons for choosing healthcare.

The reasons given in the above table are taken from the institutions’ project plans and policy memorandums and the interviews. It turned out to be difficult to determine an overall reason for the structural introduction of OCW. It all depends on who you talk to, whether the project coordinator, administrator, instructor, or marketing officer.

Who are involved?
It is interesting to see who are actually involved in the institutions’ OER/OCW initiatives. Here is an overview:

<table>
<thead>
<tr>
<th>Those involved:</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy officer/service unit</td>
<td>TUD, OU, LEI, UMCN</td>
</tr>
<tr>
<td>Library, media centre</td>
<td>Avans, RuG, TUD, LEI</td>
</tr>
<tr>
<td>Marketing department</td>
<td>OU, LEI</td>
</tr>
<tr>
<td>Academic affairs/student affairs department</td>
<td>TUD, OU, LEI</td>
</tr>
<tr>
<td>Teaching staff/instructor/faculty</td>
<td>Avans, OU</td>
</tr>
<tr>
<td>ICT department</td>
<td>TUD, RuG</td>
</tr>
<tr>
<td>Management/Management Board/Executive Board</td>
<td>UMCN; OU; TUD;</td>
</tr>
<tr>
<td>Educational innovation department</td>
<td>UMCN</td>
</tr>
<tr>
<td>Human Resources department</td>
<td>UMCN</td>
</tr>
</tbody>
</table>

Avans = Avans University of Applied Sciences

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32 Representatives of the institutions listed were interviewed for the purpose of this article. Each had their own position.
Everyone involved has his/her own objectives. From the point of view of marketing, OCW can be intended to improve exposure and to recruit students, but through interesting, high-quality resources. An instructor or programme will become involved in order to increase the exposure of the programme or discipline and thus recruit students. However, the “specific quality requirement” requested by the marketing department (i.e. a good picture, brief fragments) will not be as important for the instructor. As Delft University of Technology indicates, materials that are good enough for the university’s own students are good enough for the world outside. They also give a realistic picture of what the programme actually involves.

**What implications do OER/OCW have for an institution?**

The issues facing the institutions depend on the phase reached by their OCW project. The following are mentioned.

**Determining formal objectives for the institution**

OCW/OER go further than merely publishing content. They also endorse a “higher goal”, namely to make the institution’s resources (research and teaching) available, i.e. to be “open”. This consequently affects the institution. The institution must therefore clearly define its objective for OCW: what is its intention in publishing its material? This is a difficult issue because it affects so many aspects: marketing, library, teaching, research.

**Sustainability**

Who will carry out the project in the longer term, after the project phase? The faculties/schools/academies, or the marketing and communication department? Or perhaps a combination? In short: who will pay for it? As we have already seen, OCW/OER involve action beyond the boundaries of systems. Various different departments need to collaborate and pay jointly, or faculties need to pay for OCW/OER themselves. Alternatively, some other kind of service provision needs to be considered. For example: the educational resources are made available online, but in order to make use of educational services – for example certification or guidance – the student is required to pay. For the Dutch Open University, for example, it is crucial whether there will be a shift from a product-driven to a service-driven university, and then in a financially responsible manner. The business case is also very important for Leiden University.

**Creating critical mass**

If OCW/OER are to have an effect, then they must have critical mass. In a number of cases, online publication was already encouraged during the project phase. If it is up to Groningen University, a large number of courses will be published in the next three years. Agreement has been reached at Leiden University that four pilot projects will each involve publication of four Master’s degree courses with a minimum of 40 ECTS credits. But what will happen when the project funding has been used up and funding remains necessary for continuing publication and for maintaining what has already been published?

Delft University of Technology now has a large amount of content because funding is provided to support publication by its instructors. Student assistants do the work and the Open Office checks the quality of the material. The university has set aside money for this purpose.

**Practical matters**

Institutions that are just starting out are concerned not only with funding issues but with such matters as support for instructors regarding copyright (copyright desk), the choice of licences for the material to be published, the publication process itself, or the platform to be selected. These are also issues that arise as regards systematic funding. The necessary arrangements must already be made, however, during the project period. These are often issues that concern the institution, and they need to be considered at policy level.
Where are things heading? What developments do institutions need to keep track of?

Hype?
OCW/OER are an emerging movement internationally. More and more institutions are linking up with the OCW Consortium, and existing national OCW initiatives are increasing. In the Netherlands, institutions are taking cautious steps. In general, one can say that OCW/OER are not just a hype. Information is increasingly available online, and students expect that educational information will ultimately also be available in this way. You need to be able to make the right choice of study programme in the same way as you buy a book online from Amazon, which allows you to view some pages online before ordering. After all, the choice is an important one and it involves a considerable price tag. The OCW/OER movement ties in closely with the development of Open Access and Open Source. Here too – after a difficult start – there is a growing movement. There is also more and more discussion of the release of data (“Open Data”). These movements show that sharing knowledge and developing it jointly generates better knowledge and products. It is important to keep track of the digital agenda of the European Commission, which also focuses on Open Data.

What does the future hold?
1. More reuse of published materials
Content is currently being developed and distributed (i.e. published). That material can be reused to a much greater extent. The more that critical mass is created and quality becomes important, the more reuse can be expected to increase.

2. Greater integration of ordinary education into OCW/OER
Currently, institutions that publish content make use of two platforms: Blackboard for restricted courses and an OER platform for open courses (see the article by Martijn Ouwehand on OER platforms). This means additional work for all concerned. Expectations are that OCW/OER will increasingly be seen as a means of bringing together all kinds of materials (OER) that an institution or another party has published or reused and adapted. There will then be a single platform where the materials are published and where one can select materials and combine them.

3. OCW/OER as a driver of educational innovation
   - Between institutions: partnerships and new services can be expected to develop between institutions that publish online. This collaboration will, for example, involve specific subjects for which a particular institution has insufficient expertise (for example a minority language) and for which collaboration is necessary in order to provide the fullest and broadest possible education programme. There may also be collaboration in the light of labour market shortages, for example in the healthcare sector. One example is the Open University of Applied Sciences Network.
   - Within an institution: for example to make education more flexible. An instructor at Delft University of Technology is already engaged in making educational resources available via OCW; in the first term, this is still face to face but in the second and third terms it involves a mixed set-up entirely without contact hours.
   - New initiatives: these are primarily international. They indicate what future developments may be like, and how they may change the education provided. One example is Massive Open Online Courses (MOOCs), which are discussed elsewhere in this report. There are also examples outside the context of the traditional type of institution, for example Peer2Peer University (http://p2pu.org/en/) or the initiative by the Saylor Foundation (http://saylor.org). People organise things themselves. New types are developed. One question here is whether the road that higher education has currently taken is the right one. Would it not be much better to take the road of co-creation with other institutions rather than organising OCW/OER within the walls of our own institution?

4. Measuring the effects of OCW/OER
Policymakers like to know the actual effect on learning of making educational resources open. Do OCW/OER encourage people to learn? Do they have an effect on the quality of the education provided? Little research has so far been done. That is understandable, given that OCW/OER are innovative and are often still in an experimental phase at the various

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33 See for example: http://nederlandopendata.nl/ or http://www.edata.nl/0602_011011/pdf/0602_011011_1.pdf
35 Open University of Applied Sciences Network:
http://www.surffoundation.nl/nl/projecten/Pages/NetwerkOpenHogeschoolInformatica.aspx
institutions. Documents are available, however, dealing with how instructors or students experience OCW/OER and use them (or wish to use them).

Conclusion

The first institutions to place OER/OCW on the agenda in the Netherlands are now engaged in formulating policy for the years ahead. However, many Dutch higher education institutions are still extremely cautious as regards policy concerning OER/OCW. A few of them have taken the step of starting preliminary investigation projects or activities with a view to determining “whether OER/OCW are worth it”. Two institutions are already fully engaged in using OER/OCW.

The idea of “open” is in any case not just a hype. Open Access, for example, has been encouraged for some years now, and it is on the European Digital Agenda. But perhaps the way institutions currently make their content openly available is not the way they will do so in a few years time. The discussion is still very much determined by the goal which OCW/OER serve, and also by the revenue model that the institution applies. As yet, this is by no means clear. Clear policy decisions have not yet been designated, and have not in fact been made.

The following are necessary to promote policy-making regarding OCW/OER at higher education institutions:

- Innovative thinking and action on the part of institutions: What will the education we provide be like in a few years time, and what steps can we take – and do we dare take – already?
- Greater collaboration between the institutions in the Netherlands: Where are the opportunities and possibilities, and where will we need one another?
- Encouragement by government, in any case support for the principle of Open Educational Resources (OCW/OER) within higher education: sharing knowledge enriches us.
- Accompanying research in order to move from the phase of “promised effect” to that of “proven effect”. And perhaps entirely different effects will be measured than those that we expect.
- Look more closely at and learn from the various initiatives outside the traditional institutions: Is it not these initiatives – for example the “new universities” – that involve “real” innovation?

Finally, here are a few questions regarding OCW/OER that demand our attention and that need to be discussed within the higher education sector or the institutions:

- Are we delaying discussion of OCW/OER? See also the Open Data agenda drawn up by the EU Commissioner for Europe’s Digital Agenda, Neelie Kroes. Are we not lagging far behind, including as regards other countries?
- If so, what are the consequences and what steps should we take to speed things up?
- What is really needed within higher education in order to get OER off the ground?
- What critical success factors for OER – including ones that have been proven elsewhere – are we not yet utilising?
- Is sufficient consideration being given to what students want? The “C Generation” want accessible content. How, and what for?
- Do OCW/OER actually fit in with the institutional types of education that we have in the Netherlands, or are these an obstacle?

Bibliography


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37 http://www.nwo.nl/nwohome.nsf/pages/NWOP_89B8XM
Intermezzo 8 – OER Commons

The OER Commons repository provides access to more than 30,000 OER covering the whole spectrum of education. Anyone in the world can contribute, and there is an extensive search engine function.

www.oercommons.org
Introduction

According to columnist Bill Keller in The New York Times, it will not be long before higher education feels the far-reaching effects of the “disruptive technologies” of the Internet. Postal services, photography, music, libraries, and publishers have already done so, and their business models have been drastically changed. The same may well happen to higher education institutions: a shift from a model based on closeness and exclusiveness to virtual, open campuses and distributed learning, with online open courses that receive assessments as on Amazon.com, with supporting learning services that can be purchased like on eBay, and at which students are assessed on their acquired competencies, for example in gaming, rather than by means of tests and assignments: “the university of wherever”. Many people see Open Educational Resources (OER) as an essential feature of a new business model of this kind. But what will such a business model look like? In what ways will it differ from the existing models? What financial and revenue models for OER will be associated with it? Answers to these questions are being sought in various parts of the world. This article presents a brief overview.

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What is a business model?

There are many definitions and interpretations of the concept of a “business model”, both in general and also in relation to OER projects. “Business” means more than just earning money and how a company or organisation is structured. It also involves the idea of “doing business” and the strategy and objectives that the company or organisation pursues. It involves the design principles for the company or organisation, a broader meaning expressed by the word “model”. The elements, objectives, and design principles are just as important in a discussion of the significance of OER in higher education as financing and income possibilities.

What do we understand by a “business model”? We apply the definition of Osterwalder & Pigneur (2009), who define a business model as “the rationale of how an organization creates, delivers, and captures value”.39

According to Osterwalder & Pigneur, an organisation’s business model can best be described in terms of nine building blocks (see the figure below). These nine building blocks cover the four key components of a business or organisation: the customers, the range, the infrastructure, and the financial viability. The model – which they refer to as the “canvas” – also functions as a blueprint because filling it in makes clear where improvements and changes can be implemented. With their definition and elaborations, Osterwalder & Pigneur provide a clear vision of the key components of an organisation and how they relate to one another. Significantly more aspects are involved in determining how an organisation can best be structured in order to earn money and remain sustainable than just financing or organisation.

Osterwalder & Pigneur’s model can best be read in the following order:
- Customer segments: What existing and new customer segments does the organisation intend serving with its products and services?
- Products and services: What products and services does the organisation intend offering to its customers, and what customer demand (qualitative and/or quantitative) will the organisation meet with those products and services? In other words, what added value does the organisation offer to its customers?
- Customer relationships: What exactly are the relationships that the organisation has with its customers/customer segments?
- Channels: How does the organisation communicate with and reach its customers as regards delivering its products and services?
- Revenue streams: How and in what way does the organisation generate revenue? In other words, what is its revenue model?
- Core activities: What core activities must the organisation perform in order to deliver its products and services via the channels?

- Key resources: What physical, financial, human, and ICT resources are needed in order to be able to offer the products and services via the channels and to maintain the relationships with customers?
- Key partners: What partners does the organisation work with in order to deliver its products and services, and what does that collaboration involve?
- Cost structure: What costs does the organisation incur – by itself or together with its partners – in order to deliver its products and services, to keep open the channels, to maintain the relationships, to acquire the key resources, and to implement the core activities? The income and funding streams form part of this.

**Business models and OER projects**

There are currently hundreds, if not thousands, of OER initiatives all over the world. Many of these are to be found in the highly developed West, but the OER movement is also making great progress in Latin America and Asia. This growth has been accompanied by greater concern with the viability and sustainability of OER projects. In discussions about many OER projects – and above all against them – it is often argued that no convincing business model has as yet been proposed that can offer favourable commercial/economic prospects for the longer term. Too many projects are said to be subsidised, and they are also said to distort competition on the market for learning materials and books. This argument is much too simplistic; worthwhile models are in fact being developed that are also slowly becoming sustainable.

Many OER projects in the past ten years began as relatively independent projects within or at a reasonable distance from an institution or organisation, often with an external grant or funding. This is how MIT’s Open Courseware project began, for example, and the same applies to the British Open University’s OpenLearn and the Dutch Open University’s OpenER. The question at the start of all these projects was where the money would come from to initiate the project, but as soon as the project was under way, that question shifted to how it could continue to be funded. In other words, the focus of intention was the funding model.

In 2007, Stephen Downes presented an overview of the nine proto-typical funding models that he had identified. In fact, his analysis went further than OER projects, also involving such projects as Sakai, RedHat, Ubuntu, and PLOS. In their study for JISC, Kevin Guthrie et al. (2008) identified eight models. Downes’ overview is still very useful. The OPAL project utilised his typology, for example, and on that basis established that most of the projects in the British HEA/JISC OER programme are funded by a combination of grants from within the institution concerned and outside. We would be prepared to suggest that this also applies to the majority of other OER projects.

Another perspective that we can distinguish involves the question that arises after the initial phase of an OER project, namely how the project can be organised in such a way as to earn money and be sustainable. We refer to this second perspective as the question of the revenue model. Two entirely different examples of this approach are Connexions and Flat World Knowledge. Connexions provides a platform for sharing learning objects, with the option of using them to create tailor-made textbooks and have them duplicated by means of “printing on demand”. It is the printing service that is intended to generate the income for the whole system. Flat World Knowledge is a commercial publisher that focuses on the market for higher education textbooks. One version of every publication is always available by open access, but there are also countless variants of the publication available in return for payment. This approach pays close attention to the users and their wishes. There is a shift in the strategic perspective.

The third perspective that we can identify is the business model for the entire organisation or, in our case, an educational institution; this is the perspective as outlined by Osterwalder & Pigneur. We have applied this perspective in a scenario study for the Dutch Open University; however, not all the results were available when the present article was written. The British Open University is also increasingly implementing its OER strategy in the same way. David Wiley and others also adopt a broader view; in case studies, they indicate that offering learning materials in the form of OER has positive effects.

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40 There is no portal or suchlike giving an overview of OER projects. One of the aims of UNESCO is to make these projects visible.
on intake in “normal” education. A similar in effect was also measured by the Dutch Open University after the end of the OpenER project. The OER University initiative could also develop in this integrated direction.

In conclusion

Which of the three perspectives or approaches is the best for a Dutch higher education institution depends on a large number of factors. It is relevant whether an OER project is intended as a pilot in order to gain experience (funding model), as a relatively independent activity that generates its own revenue (revenue model), or as part of the strategy to provide education for the future (integrated business model). Another relevant factor are the market segments that the institution serves and aims to continue to serve, and with which services. Finally, it is highly relevant whether the Dutch government will decide to adopt a guiding and facilitating role because of the system-innovating effect that OER can have (see the contribution by Fred Mulder). Consider, for example, the potential consequences of government policy whereby part of the education budget is earmarked for profile funding and for the obligatory production of OER. According to Hal Plotkin, a senior adviser to the Obama administration, this scenario is quite feasible in the near future. Recent experience as presented at the OpenEd 2011 conference in Utah (USA) also indicates a trend whereby OER projects only become viable for a higher education institution when they are embedded within its core activities.

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Intermezzo 9 - OLnet evidence hub

How can we collect evidence regarding how OER work in actual practice, and develop methods regarding open education? These questions are central to OLnet, an international research hub that allows for more than just exchanging OER. People from all over the world can participate to debate OER, improve quality, assess the evidence provided, and comment on OER-related issues. It is also hoped that new ideas can be developed regarding OER and their application in a more “open” world.

http://olnet.org
http://ci.olnet.org/
Article 10 -
The love-hate relationship between OER and copyright

Martijn Arnoldus is project coordinator for Creative Commons Netherlands and senior adviser to the Netherlands Knowledeland [Kennisland] Foundation. He is very interested in the application of OER and the associated legal problems. Martijn Arnoldus believes that the education sector should involve itself in the associated debate to a greater extent.

The shift

Open Educational Resources are called “open” because there are also “closed” education resources, in other words, educational resources that instructors, students, and others can only utilise in a restricted manner. Copyright is sometimes blamed for “closed” being the norm and “open” the exception. A shift is taking place, however. Open Educational Resources are finding their niche thanks to the clever use of the loopholes within the existing legal framework, with free reuse being the norm. This can only be successful, however, if the education sector learns how to deal with these loopholes.
Strange tension

There is a rather strange tension between Open Educational Resources (OER) and copyright. On the one hand, the current copyright system operates powerfully against the free distribution, reuse, and sharing of educational resources. After all, many types of use of copyright works require the explicit prior consent of the copyright holder. When material produced by a large number of different authors is involved – as is often the case with educational works – acquiring that consent can easily become very time-consuming. And what happens if the author or copyright holder is unknown? This can make reuse very awkward, or even impossible.

On the other hand, the whole advancing system of Open Educational Resources is in fact solidly anchored within the existing legal framework. Open content licences are at the very core of Open Educational Resources. These licences are a tool with which rightholders make clear that they grant consent – under only a few restrictive conditions, at most – for a large number of types of use/reuse of their protected work. These licences can only function due to the existence of copyright. With open content licences, it does not matter who the user is as long as he or she observes the licence conditions. The most frequently used open licence system for OER is Creative Commons, although other systems exist.

**Figure 1: The various Creative Commons licences**

- **Attribution** The user is entitled to copy, distribute, pass on, or adapt the work, as long as the original creator and/or copyright holder is credited.
- **Attribution-ShareAlike** The user is entitled to copy, distribute, pass on, or adapt the work, as long as the original creator and/or copyright holder is credited and any derivative work (i.e. an adaptation of the original) is also published under an “Attribution-Share Alike” licence.
- **Attribution-NonCommercial** The user is entitled to copy, distribute, pass on, or adapt the work, but only for non-commercial purposes and as long as the original creator and/or copyright holder is credited.
- **Attribution-NoDerivs** The user is entitled to copy, distribute, or pass on the work, as long as the original creator and/or copyright holder is credited and the work is not adapted.
- **Attribution-NonCommercial-ShareAlike** The user is entitled to copy, distribute, pass on, or adapt the work, but only for non-commercial purposes and as long as the original creator and/or copyright holder is credited and any derivative work (i.e. an adaptation of the original) is also published under an “Attribution-NonCommercial-Share Alike” licence.
- **Attribution-NonCommercial-NoDerivs** The user is entitled to copy, distribute, or pass on the work, but only for non-commercial purposes and as long as the original creator and/or copyright holder is credited and the work is not adapted.
- **CC0 (CCZero)** CC0 means that the copyright holder waives all his/her copyright in the work (to the extent that this is legally permitted).
- **Public Domain Mark** The Public Domain Mark, which is not actually a licence, can be used to indicate that the copyright in a given work has lapsed.
The Creative Commons system was introduced in the United States in 2001. It quickly spread to a large number of countries, including the Netherlands, and is now utilised by millions of people worldwide. Creative Commons licences enable copyright holders to distribute their work on free conditions and in a low threshold manner (see Figure 1).

The challenge for the years ahead

The paradox inherent in the way that open content has really “taken off” in recent years – and thus OER also – lies in the fact that familiarity with copyright is becoming not less important for the general public but in fact more so. And to see the “take-off” metaphor literally: the development of an infrastructure for OER is like the development of an aircraft. All the cogs and chips need to be perfectly positioned and aligned, but if one is unable to pilot the plane, then one can expect it to crash.

More and more OER environments are becoming available to the filled up – for example Wikiwijs, Open Courseware, or Blackboard (which made the use of Creative Commons licences possible as of October 2011) – and the big challenge is now to learn how do deal with OER effectively. In part, that involves providing good information for instructors, students, and other people concerned regarding copyright and the correct use of Creative Commons licences. Among the frequent misunderstandings are that anything is permitted for educational purposes; that one can simply go ahead and use Google images; that different rules apply within a closed electronic learning environment; and that granting a licence means waiving with your copyright.

But in addition to providing information, the education sector also needs to be more self-confident and proactive within the open content community. Open Educational Resources represent – certainly potentially – an extremely valuable range of open content. The education sector is therefore one that has a major interest in a well-oiled infrastructure for OER, in legally valid open content licences, and in positive attention to open content on the part of politicians. There are at least four copyright-related trends that the education sector needs to keep close track of.

1. Special licences for the education sector: R.I.P.
   A few years ago, there was sometimes discussion within the international open content community of special open content licences for educational resources. That was a discussion in which the education sector was indeed actively involved. With all the important open content initiatives, that discussion has now come to a standstill. The dominant opinion is that special licences are unnecessary and even undesirable. The argument based on simplicity and standardisation has triumphed. Having all kinds of specific licences can produce a confused situation, and moreover one that can impede the interchangeability of licences and the remixing of material subject to different licences. That is problematical for the education sector because it in fact frequently makes use of “raw” open content material, which is then processed, arranged, and expanded to produce OER.

   The demise of the concept of specific open content licences for the education sector makes it all the more important for that sector to make its voice heard within the broad open content movement.

2. Increasing importance of open data
   A second significant trend involves the advent of “open data” on the agenda of the open content community. “Open data” generally involves items or facts (or series of facts) such as measurements or descriptions of data (metadata). The availability of data is also extremely important in education. The quality of education and teaching/learning materials benefits from access to up-to-date data. Data is therefore being made increasingly available under an open content licence. This is somewhat problematical, however, from the point of view of copyright. In many cases, data does not consist of copyright-protected works (measurements are not subject to copyright, for example). The EU’s database right does mean that databases are protected, but the extent of that protection is much less than that provided by copyright.

   In terms of data, therefore, a considerable amount of investigation and experimentation is still necessary where licences – specifically open content licences – are concerned. The education sector is confronted by this not only as a user of other people’s data but probably even more as the creator or collector of data.
3. The “detachment” of learning

A third trend is much more directly related to education but it does have important copyright consequences. Many instructors and educational institutions feel that education holds a special position as regards copyright. This is not entirely unjustified. In the context of copyright, the copyright holder’s rights are restricted in a number of areas when it comes to use of the protected work for educational purposes. The most important of these is the “educational exception” (Section 16 of the Dutch Copyright Act), which provides that duplicating or publishing portions of a work solely for the purpose of explanation in an educational setting does not constitute infringement of copyright. This exception is subject to certain conditions, however, including that “fair payment” must be made. Where “readers” are concerned, a new collective agreement is currently being drawn up by the Dutch Publication and Reproduction Rights Organisation [Stichting PRO], the body that collects reader fees on behalf of the publishers. But the more education becomes “detached” from physical educational institutions and learning also becomes lifelong learning, the more likely it is that the necessary discussion will arise regarding Section 16 of the Copyright Act. It is up to the education sector to adopt a clear position regarding this matter. Moreover, the “educational exception” is not a free ticket to open content, as is sometimes assumed. An instructor who uses certain material for teaching purposes is not permitted to publish it as open content.

4. The definition of “commercial use”

The fourth trend of which the education sector needs to keep track is a latent one. Ever since the advent of open content licences, the question has regularly been raised of whether it is valuable to distinguish between commercial and non-commercial types of reuse. Within the open source movement, such a distinction within licences is not very common. When Creative Commons was introduced, however, an emphatic distinction was made: three of the six types of licence prohibit commercial reuse (see Figure 1). One knotty problem is that neither the Dutch Copyright Act nor the Creative Commons licences actually provide a clear definition of what constitutes commercial or non-commercial use/reuse.

The education sector will find itself grappling with this issue in the coming years, certainly as OER become increasingly important. In the first place, this will involve the nature and activities of the various parties involved in education, for example the educational publishers and the private, non-subsidised segment of the education sector. Moreover, it is not inconceivable – although this goes beyond the scope of the present article – that publicly funded educational institutions will more frequently adopt the role of “educational publisher” themselves and may well see such publication as a revenue model. All kinds of situations may arise in which what is felt to be a clear and useful distinction between commercial and non-commercial suddenly turns out not to be so clear after all. In the heritage sector, a cautious attempt was already made some years ago, as a sort of guideline, to draw up a kind of “whitelist” and “blacklist” of actions that can or cannot be considered commercial. Something similar would not be a bad idea in the world of education too. Not that it would create an unshakable legal framework – which is not the case – but because it would help the education sector to clarify its position regarding the desirable distribution of roles and its approach to Open Educational Resources.

The education sector must make the next move

With all these various trends in mind, the education sector will need to make its voice more clearly heard within the debate regarding open content and copyright. Issues are likely to arise that will involve conflicts between different interests and ideas. It is by no means a matter of course that the most appropriate solutions from the point of view of the education sector will come to the fore. The sector should adopt a more proactive position than in recent years as regards representing educational interests and not merely a “wait-and-see” attitude whereby OER initiatives must accommodate themselves entirely to structures thought up by others.
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Interesting websites

- Creative Commons Nederland: http://creativecommons.nl
- Creative Commons International: http://creativecommons.org
- OER Commons: http://oercommons.org
- Copyright and education: http://www.auteursrechtenonderwijs.nl
- KoppieCopy (secondary education): http://www.koppiecopy.net
- Copyright in higher education: http://www.surffoundation.nl/auteursrechten/nl/Pages/Default.aspx
- SURFacademy seminar on OER and copyright: http://www.surf-academy.nl/archief/event/?id=407
- Institute for Information Law: http://www.ivir.nl
Intermezzo 10 - The role of UNESCO

The term Open Educational Resources (OER) was first adopted by the UNESCO 2002 Forum on the Impact of Open Courseware for Higher Education in Developing Countries. As an international promoter of the use of OER, UNESCO has since produced a number of activities and publications. OER are also high on the agenda of the Dutch National UNESCO Committee. In 2010, UNESCO established two professorial chairs for OER. One of those is at the Dutch Open University and is held by Fred Mulder.

The following interesting websites and communities provide a wealth of information about OER:

UNESCO website – OER pages
UNESCO OER Community
OER resources community
UNESCO OER Community wiki
Website UNESCO chair Fred Mulder
Article 11 -
The LOGIC of national strategies for Open Educational Resources

Fred Mulder (fred.mulder@ou.nl) is a “Distinguished University Professor” at the Dutch Open University and holder of one of the two UNESCO chairs for OER. He was previously the Dutch Open University’s rector magnificus for ten years. He has worked on many fronts for the development of OER/OCW and is considered worldwide to be one of the opinion leaders.

The struggle for sustainability

In the first decade of its development (2001–2010), the OER movement was supported worldwide by a large number of relevant and successful projects, some of them on a large scale although most of them not, and primarily at the initiative of innovative institutions and experimentation-minded instructors. Despite the many initiatives and attempts already made within the OER community to achieve it, the quest for a sustainable perspective continues. This is a powerful barrier to making OER and the OER approach the leading method within national education systems.

At the start of its second decade (2011–2020), and to some extent in the run-up, there are cautious attempts in just a few countries to develop a national approach to OER. Such an approach will be necessary if the barrier mentioned is to be removed. Making the OER approach sustainable is not something that can be left solely to the educational institutions; it will need to take place within a national setting.

47 This article is a version of part of the author’s address on the occasion of the installation of the new rector at the Dutch Open University in 2010 (Mulder, 2010).
National strategies

The first country to speak out in favour of the national use of OER was India, when it launched its National E-content and Curriculum Initiative (National Knowledge Commission 2007, Vijay Kumar 2009). The Netherlands followed in 2009 with the national Wikiwijs Programme – coordinated by the Dutch Open University and Kennisnet – which aimed to make OER mainstream in all sectors of education; the programme runs up to the end of 2013. In 2011, the United States commenced a four-year programme involving a total of 2 billion dollars, which includes development of OER for Community Colleges and Career Training (URL TAACCCT). Many other countries – for example Brazil, China, Indonesia, Japan, Korea, Poland, South Africa, Turkey, Vietnam, and the United Kingdom – have introduced specific measures or subsidies to promote OER, with some countries considering a national approach.

‘Knowledge is a Public Good’...

This observation brings government into the picture. A few quotations:

| “Governments, school boards, colleges and universities should make open education a high priority. Ideally, taxpayer-funded educational resources should be OER.” | Cape Town Open Education Declaration (URL Cape Town-2007) |
| “OER offer HE governance leaders a cost-efficient method of improving the quality of teaching and learning while at the same time reducing costs imposed on students.” | Hal Plotkin 2010 |
| “All of this increases quality, improves efficiency, contributes to accessibility, and boosts innovation in education.” | Final sentence of the “vision” underlying Wikiwijs (Programme Plan 2011–2013) |

The final quotation above refers very directly to the triple responsibility of government for education, namely to guarantee and promote accessibility, quality, and efficiency.

Government responsibility

John Daniel has referred to the “Iron Triangle”, a kind of unshakeable triangle whose three sides consist of access, quality, and cost. It is unshakeable because improving one of these three performance indicators immediately leads to a deterioration in one or both of the other two – at least if the applicable circumstances and conditions remain unchanged. The deployment of technology can break this deadlock (Daniel 2009).

This article presents a modification of John Daniel’s model that is different in three respects:

1) The performance indicators are accessibility, quality, and efficiency. The first two of these correspond to the first two in the Iron Triangle, and for both the intention is that they should be maximised. For the third indicator, efficiency has been chosen rather than cost; this has the advantage that maximisation applies to all three indicators (and not, as in the case of cost, minimisation).

2) Intervention should not be taken to be the use of technology in general but specifically the deployment of OER. This reinforces the argument because potential doubts regarding the efficiency of the specific intervention are fewer in the case of OER.

3) A three-dimensional version rather than the two-dimensional triangle is used because this fits in better when modelling with three performance indicators.
Educational performance in 3D

Figure 1(a) is a 3D representation of the performance (as a model) of the Dutch education sector at a given moment, with values along the three axes of accessibility, quality, and efficiency. These are connected by a triangular area. Let us say that we wish to improve efficiency. Figure 1(b) shows an example (in red) in which efficiency is indeed increased but at the cost of both quality and accessibility, both of which are reduced. Figure 1(c) shows another example, in which quality is increased but efficiency is reduced, while accessibility remains more or less the same. This illustrates the impasse situation (assuming that the applicable circumstances and conditions remain unchanged).

If the circumstances and conditions do in fact change, then the pattern may look different. A drastic system intervention utilising OER – see Figure 1(d) – is an example of an innovation that makes it possible to increase performance in all three dimensions. After all, the accessibility of the educational resources is maximised if online availability is complete. Quality benefits from deploying OER because far more experts and also users become involved in developing educational resources, and a great deal of assessment, correction, and review take place. Finally, efficiency is promoted because it is possible to avoid having all the different educational institutions develop their own separate course for the same subject. And OER also benefit a fourth dimension, namely innovation.

Conclusions

1) The institutional struggle for sustainability with OER can/must be resolved by means of a national OER strategy.
2) In this regard, one can justifiably call on the triple responsibility of government for education, namely to guarantee and promote accessibility, quality, and efficiency.
3) National performance in these three dimensions keep one another in deadlock, in other words it is not possible to simultaneously improve all three of them, or at least not if the applicable circumstances and conditions remain unchanged.
4) This 3D performance deadlock can be broken by means of a drastic system intervention in education by means of OER.
5) By making OER dominant in all sectors of education – as is the intention in Wikiwijs – the government will be taking responsibility for the sustainability of such an education system (i.e. one with OER).
6) Moreover, utilising OER will implement a significant innovation in our knowledge society and the OER approach will provide a powerful recipe within the modernisation of higher education that the EU aims to bring about on the way to 2020.

Working within an OER situation does not need to cost the government more money. Reallocation – in fact only limited reallocation – of funds would appear to be sufficient: an earmarked budget, creamed off from the macrobudget for
education, and perhaps resulting in a profile financing component for certain institutions and organisations. For project or programme funding incorporating a learning materials component, one could also impose an OER condition. It’s that simple…

Epilogue

The trend outlined here towards adopting and implementing national OER strategies has received a powerful boost now that both the OECD and UNESCO are making preparations to bring out a related “OER declaration” in early 2012 and June 2012, respectively. Indeed… the LOGIC of national OER strategies!

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- http://www.informaworld.com/smpp/title~content=g909097565~db=all (OpenLearning-SpecialIssue)
- http://creativecommons.org/taa-grant-program (TAACCCT)
- http://www.wikiwijs.nl (Wikiwijs)
Intermezzo 11 – The OpenCourseWare Consortium

The OpenCourseWare Consortium is a worldwide partnership of higher education institutions operating in the field of OCW. Beside sharing and distributing OCW, the Consortium also concerns itself with the further development of OCW, setting up new projects and keeping existing ones going, exchanging ideas, and coordinating the worldwide movement.

http://www.ocwconsortium.org/
Article 12 -
An international perspective on OCW

Willem van Valkenburg (W.F.vanValkenburg@tudelft.nl) works at Delft University of Technology’s Education Technology department. He is the coordinator of the university’s OpenCourseWare project and of the EU’s OpenCourseWare in Higher Education project, and assistant to the President of the OpenCourseWare Consortium. He is also a trendwatcher as regards worldwide developments in OER/OCW.

History and developments

OpenCourseWare began 10 years ago with a number of enthusiasts at MIT. The original concept with which they began their work is supply-driven. An institution puts a selection of its educational resources online and sees what happens. The original idea was that this material would primarily be used by instructors at other institutions. That turns out not to be the case: the material is mainly used directly by students, and in fact by a much broader group than those registered at an educational institution.

48 Ten years of OpenCourseWare at MIT: http://ocw.mit.edu/about/next-decade/
Shifts

Because of the new target groups, a movement has arisen that aims to tailor the range of OER to these groups to a greater extent. i.e. to make the material more suitable for independent study and to offer more interactivity and multimedia. In other words, the focus has shifted from publication of material to its use. This is an international trend with which many institutions are experimenting. In the Netherlands, Delft University of Technology and the Dutch Open University are two examples. Other institutions are still in the initial phase, i.e. that of publishing material. The shift has caused the marketing arguments for publishing educational resources to recede into the background. What is involved is increasingly “Open Education”, which will ultimately lead to more “Online Education”.

Content development

Collaboration is taking place at institutional level; in other words, institutions are jointly developing content and utilising one another’s content. One good example is the Water Management programme at Delft University of Technology; the programme’s materials are also used for the programme at the Bandung Institute of Technology in Indonesia, where the material is enhanced with local cases and the videos are subtitled. This means that the material is improved, something which in turn benefits students back in Delft. We are therefore dealing with a process of quality improvement through international collaboration. Another example of successful collaboration is the African Virtual University, which involves more than 50 educational institutions in 27 African countries. Since 1997, they have already trained more than 40,000 students in technical subjects using “open learning”.

Supplementary services

Another interesting international trend is the advent of supplementary services. The familiar free example is OpenStudy, a platform where students can ask questions about a discipline. Because this is an international community, 70% of the questions are answered within five minutes. OpenStudy is not associated with any specific institution. Another example is videolectures.net, a company that provides a free video lectures repository for educational material.

Badges

It is of course interesting for independent learners to be able to show that they have taken an OCW course. They can do this by taking a test at the institution concerned; to do this, however, they need to pay. A number of institutions have now developed “badges”, i.e. visual representations showing that someone has acquired a particular skill or has displayed a particular level of performance.

An alternative is provided by the Brazilian institution FGV Online. This enables students who have completed a course to print out a Declaration of Participation. In countries where few people are educated, declarations of this kind can help someone find a job. The Open Educational Resources University (OERu) goes a step further by offering formal accreditation (i.e. a diploma) on the basis of study with OER. This virtual university was set up by a network of universities in Australia, Canada, New Zealand, South Africa, and the United States.

MOOC

Another new development concerns Massive Open Online Courses (MOOC). These are open online courses that anyone can take. This means that someone can study free of charge at a leading institution. Stanford University organised a MOOC in

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49 http://www.avu.org/About-AVU/introduction.html
50 http://videolectures.net
51 http://www.slideshare.net/Mozilla_Open_Badges/mozilla-open-badges
52 http://wikieducator.org/OER_university
2011 on artificial intelligence for which more than 200,000 students registered. Students who take the subject online are
given the same course as “ordinary” students at Stanford. If they pass the examination, they receive a statement of
accomplishment signed by the two professors who teach the course.

Translations

Many Open Courseware courses are originally in English, but more and more are being translated into languages including
Spanish, Chinese, or Indonesian. For institutions in developing countries, translation is an inexpensive way of being able to
utilise high-quality materials within their education system. This trend is sometimes encouraged by the country’s
authorities, for example by CORE in China.

Collaboration at national level

An increasing number of public authorities appreciate the importance of OER/OCW and are consequently offering support
at national level. That support takes different forms. Quite a few countries have created a national consortium for Open
Courseware. Familiar examples are Japan OpenCourseWare, Korea OpenCourseWare, and CORE. Another method is
to utilise an existing network, for example Universia in Spain; the same applies in the United Kingdom to JISC (the British
counterpart to the Dutch SURF).

In all these countries, more and more institutions are making active use of OER and OCW. At a workshop organised by
SCORE that I attended in the United Kingdom, it turned out that even when OER and OCW projects had terminated, most
of the institutions involved continued to use them. The initial grant from JISC had clearly acted as a kind of catalyst for the
institutions to get to work with OER; they are now convinced of the added value of such resources and they consequently
continue to utilise them. One good example of this is the University of Nottingham’s Open Nottingham programme.

Collaboration

The OpenCourseWare Consortium originated with institutions publishing open courses but it is increasingly becoming a
network of innovative thinkers both inside and outside the education sector. This has enormous appeal for administrators.
The Obama administration has understood this, and it sends representatives to the meetings as a matter of course. This has
led to extra investment in OER in the United States amounting to 2 billion dollars.

The Consortium is not yet entirely international. It is clearly working to change that situation, this year, for example, by
appointing a non-American president, but also by participating in an EU project to promote Open Courseware within the EU
(with Delft University of Technology acting as coordinator). Most new members of the Consortium currently come from
outside the United States.

The development of OER/OCW fits in extremely well with the policy of the Netherlands as a knowledge-driven economy
(“Netherlands Knowledgeland”). Numerous studies have demonstrated that sharing knowledge makes everybody smarter.
In the Netherlands, we have publicly funded higher education institutions. Knowledge that is financed by the government
should in fact be publicly accessible. We have been making research material available for some years now with “Open
Access”. We can do the same with educational resources by publishing them as OER and/or OCW.

54 The various languages in which courses are available are: http://ocwconsortium.org/en/courses/browselanguage.
56 http://www.iocw.jp/
57 http://www.kocwc.org/
58 www.core.org.cn/en/
59 http://www.universia.net/
60 see http://www.jisc.ac.uk/whatwedo/programmes/elearning/oer.aspx
61 see http://cloudworks.ac.uk/cloud/view/5134
62 Support Centre for Open Resources in Education: http://www8.open.ac.uk/score/about_SCORE
63 see http://www.nottingham.ac.uk/open/opennottingham.aspx
64 see http://www.dol.gov/opa/media/press/eta/eta20101436.htm
65 see http://www.e-learn.nl/2011/07/30/eu-grant-for-opencourseware-in
Intermezzo 12 – COL: Commonwealth of Learning

COL is one of the larger parties in the world of education that have discovered that OER and OCW have great promise for education in developing countries. If it is up to COL, there will be a major increase in the role played by OER/OCW in distance education for that target group.

A number of high-quality publications can be found on the COL website. One can search for OER in a number of different ways, and there is also a description of the COL initiatives in the area of OER/OCW.

http://www.col.org/resources/crsMaterials/Pages/OCW-OER.aspx
Appendix 1: Current reports on OER/OCW

- Kevin Guthrie, Rebecca Griffiths, Nancy Maron (2008). Sustainability and Revenue Models for Online Academic Resources.
- Justin Johansen and David Wiley (2010). A sustainable model for OpenCourseWare development.
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