

## Students as evaluators of open educational resources

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The global open education movement is thriving and growing, and as the term open educational resource (OER) reaches adolescence, critical questions are starting to emerge. Is the promise providing open access to high-quality education being delivered? Startlingly absent from the literature is the thorough understanding of the views of OER student users, be they campus-based or open learners on the web. This paper presents the results of a mixed method survey of student attitudes to examine their awareness of OER and understanding of quality. Student volunteers additionally worked with university staff to develop an OER evaluation matrix (OEREM) to aid selection and use of resources. Student selection of OER is based on a mixture of value-based and quality-based judgments, and ease of use may simply be driving their choices. Further research is required to understand how the resulting OEREM matrix can be used to provide a more informed and critical selection, and also how such strategies can be used to assist open learners who bring a diverse range of academic abilities and personal circumstances that influence their learning.

### Tags

Student perceptions of OER;  
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### 1. Introduction

As the term “open educational resources” (OERs) reaches adolescence (United Nations Educational Scientific and Cultural Organisation, UNESCO, 2002), it cannot be disputed that global open education movement is thriving and growing. The notion of being able to access, and share, free open resources has driven forward innovative practices and various policy initiatives showing widespread endorsement from individuals, organisations and nations (Cape Town Declaration, 2014; European Commission, 2012; UNESCO, 2012). These policies and reports declare that OER will have transformational effects on education by crossing geographic, professional and cultural boundaries. As part of these goals, the ‘quality’ of OERs is heralded as one of the benefits of engaging with them:

- Quality can be improved and the cost of content development reduced by sharing and reusing. (Organisation for Economic Co-operation and Development, OECD, 2007).
- Open Educational Resources (OER) initiatives aspire to provide open access to high-quality education resources on a global scale. (Yuan, MacNeill & Kraan, 2008)
- And institutions are investing to improve the quality of teaching and learning. (UNESCO, 2011).
- OER gives us the previously unimaginable opportunity to use technology to maintain the quality of instructional materials while significantly cutting educational costs. (Wiley, Green & Soares, 2012).

- ‘Opening up education’ proposes actions towards more open learning environments to deliver education of higher quality and efficacy (European Commission, 2012).

So the notion of OER and quality are inextricably linked, but seemingly the adolescence may well be a turbulent one, with questions being raised as to how quality is indeed being assured and whether the OER are having an impact. What we do know is that producing high-quality resources is strategically important as a lever for governments and policy makers ‘buy into’ OER. The “increased efficiency and quality of learning resources” was cited as a reason to engage in OER in a survey of 82 education ministers from different countries (Hoosen, 2012). In a separate survey of executive staff from within a UK higher education institution, those interviewed stated that the quality assurance of OER was an important factor to consider if an institution were to engage. “How could it be ensured that OER released by a university was high quality and met learner needs?” “The traditional academic quality processes govern the quality of awards, not content.” “How would OERs released remain current and reflect the quality of information required by professional bodies?” (Rolfe & Fowler, 2012).

The need for good quality is also imperative in a practical sense. In a US study of 2,144 faculty from a nationally representative sample of US higher education providers, the need for trusted quality teaching resources was cited second as being important for choosing materials to use. In the survey, OER was deemed to be of equivalent quality to that of traditional educational resources (Allen, & Seaman, 2014). An interesting observation is that in much of the discourse, the ownership of quality assurance is never clearly defined: “at a minimum, someone must capture content, digitise it, check it for copyright issues, resolve copyright issues, and provide quality assurance of the final product” (Wiley, 2007). Yuan et al, (2008) outline three underlying three models for regulating OER quality that have generally been adopted. Firstly, an institution-based approach implies that the reputation and brand persuades learners / users that the resources are of good quality. In this there is the assumption that internal quality checks are in place. In peer-review approaches, mirroring that used in journal publishing, production teams would review the quality of OER to agreed criteria. In an open approach, OER users decide through use and/or comments whether a resource was useful and of quality (Yuan et al, 2008).

Within the entire debate little thought has been given to the role of students and open learners as gatekeepers of these processes. In a recent review of OER quality issues, Camilleri, Ehlers and Pawlowski (2014) suggested that quality must be the responsibility of a range of stakeholders and at each stage of the OER life cycle. The stakeholders could include policy makers, education management and academic communities, formal and informal learners. UNESCO also implicated users in the process, suggesting that they could engage in assuring the quality of content through commenting in social networks (UNESCO, 2011).

*“Student bodies can encourage students to participate in the social networking environments that have been created around OER repositories, so that they play an active role in assuring the quality of content by adding comments on what content they are finding useful and why.” (UNESCO, 2011).*

One would instantly question whether students would have the critical ability to do so, and getting students to engage at all, let alone in meaningful ways, would be a familiar challenge to many educators as seen in other online learning sectors. In observations of learner behaviours in massive online open courses (MOOCs), many participants are inclined not to engage in discussion boards and address the tasks set (Zutshi, O’Hare, & Rodafinos, 2013), and a lack of confidence in exposing personal views might result in participants tending to ‘lurk’ rather than be active participants (Mackness, Mak, Williams, 2010). The other problem with engaging open learners in critical processes is also that we know startlingly little about them, with the research more widely conducted focusing on traditionally enrolled students. We know little about the motivations, digital and critical literacies of informal open web learners.

## 2. AIM

The aim of this paper is to investigate student perceptions of OER and specifically to find their perspectives on what they would think quality materials to be. The paper also describes work undertaken to develop a learning tool to assist students in making quality judgments and to help in their selection process. Aspects of this work have been presented at conference (Hurt, Towlson & Rolfe, 2012; Hurt, Rolfe & Dyson, 2013).

## 3. Methodology

The research was conducted in two phases. Firstly, a questionnaire was circulated to students in the Faculty of

Health and Life Sciences at De Montfort University in 2012 to evaluate student attitudes toward OER (Survey available for sharing: Hurt, 2014). The questionnaire comprised qualitative and quantitative items, including Likert-scale questions to capture opinion. Follow up interviews with a random selection of twelve healthcare and science students provided a fuller understanding of their views. The interviews lasted around 30 minutes and were recorded and transcribed, the content captured in Microsoft Excel and clustered into themes and presented as a narrative.

Phase two of this work was in collaboration with the Kimberlin Library at De Montfort University. Students were invited to participate in focus groups and worked with library staff to capture how they interacted with open online resources. Participants were a mix of undergraduate and postgraduate science students. The approach was to use a previously developed evaluation matrix that students used to assist in the critical appraisal of research articles (Mathers & Leigh, 2008). Students used the original IEM and apply it to a text document to become familiar with it. Students then applied the IEM to a multimedia OER (i.e. available from YouTube).

The students wrote on the matrix with comments and suggestions on how to make it more relevant to OER. The result was the OER 'Evaluation Matrix' that students could use to place judgement on the quality of open educational resources that they might intend using in their studies. A brief evaluation of the OEREM was then carried out with students and staff.

This research was ethically approved by the host institution.

## 4. Results

### Student awareness and perceptions of OER

The questionnaire was available online and in paper form and was made available to all students in the Faculty of Health and Life Sciences. In total, 264 life science students participated voluntarily as reported previously (Hurt et al, 2013) including midwifery students, and students of forensic, healthcare, nursing and biomedical science. Around one third had heard of the term 'open educational resource' and they made a good effort to define what they felt an OER to be in terms of open licensing, being freely available resources, being accessible and re-usable.

### Perceived Positives and Barriers to OER Engagement

The questionnaire revealed many perceived benefits and barriers to using OER as reported in full (Hurt, 2014). One area of exploration was how to encourage use. The survey asked "what help do you think is required to get students to use open educational resources?" 132 students answered and the majority of responses suggested that OERs needed to be more widely advertised in the institution (n=61, 46% responding to that question), and others felt that the students needed knowledge on how to use them (n=30, 23% responding).

### Student Understanding of OER Quality

There were many aspects of the questionnaire that were followed up through a series of student interviews. Semi-structured questions were developed to partly understand why students felt they needed more knowledge on how to use OER. For the purposes of this paper, the discussions relating to those questions are presented here, where in reality a much wider conversation was held, as reported (Hurt, 2014).

Students were asked what motivated them to seek out OERs to assist with their studies. They were also asked how they make judgements on the quality of resources. What emerged was a blurring between what might be perceived as 'quality' and what might be perceived as 'study value'. When asked what motivates them to select OERs to assist with their studies, students recognised the need to look for credible sources that were up-to-date:

*"An accredited website, like a '.org' or something like that. You try and get things from universities or from our point of view it's usually our core places like the Department of Health and NICE, proper research institutions that research into the specific thing that you're looking for rather than just picking something off the net that's written by anyone". (Midwifery Student).*

*"A lot of journal articles, unless something has not been clinically updated or proven otherwise, you get the most up-to-date and you aim for the last 10 years." (Midwifery Student)*

Further into the interview, students began to infer that they applied a quality judgement depending on the purpose of their study and what they wanted to achieve:

*"It depends what it is for. If it is for general learning, say for instance we'd had a lecture or you were reading an article and*

*there's a term or a word you're not familiar with, I wouldn't be too worried if I used something like Wikipedia if it's just for what does this mean, in other words just a quick definition. If it was for an academic piece of work that I was submitting, then I'd want something to be far more solid and sort of valid, research based."* (Midwifery Student)

In discussing their choice and selection of academic resources, students were reasoning that it was less to do with quality but they were placing a 'value' on the resource that were due to ease of use and clarity of content:

*"If it's easy to understand. I like pictures."  
"If they're about the subject you're learning, if they're good notes and they're easy to understand I think they'll be all right."* (Biomedical Science Students)

There was also a value placed on immediacy of access to information and the need to be time effective.

*"I think it does because the longer I spend finding it, I tend to lose my concentration and think about what I will do next."* (Biomedical Science Student)

*"...the thing is, you know, when trudging through books for example, you never really know what you're going to get without reading the index or the content and you still don't know what you're going to get until you've re-read that thing. Whereas on the internet or online you can just scan and have a quick look through and pick out so many key words for what you're actually looking for and get the right research that you need."* (Midwifery Student)

### Tools-Base Approaches to Judging Quality

What emerges is a picture that suggests that students are choosing OERs on the basis of 'value' as well as 'quality' which might suggest a skills deficit in the critical ability of students. Previous research by Mathers and Leigh (2008) revealed a gap between the critical ability of student to self-assess information and their perception of their own ability. In the study, nearly 69% of students agreed and strongly agreed they had the ability to critically evaluate information, whereas in reality they were not performing so well (Mathers & Leigh, 2008). The authors developed an information evaluation tool (Information Source Evaluation Matrix, ISEM) that was piloted with students as previously reported, based on a matrix of five discrete criteria – the '5 Ws' (Towlson, Leigh & Mathers, 2010).

- Who is the author?
- What is the relevance of points made?
- Where is the context for points made?
- When was the source published?
- Why: what was the author's reason/purpose for writing the resource?

### Focus Group Results

In the second phase of the present research, the aim was to develop an OER evaluation matrix (OEREM). In all, 38 students were involved in focus groups to develop the matrix. Students provided 33 annotations to the ISEM (critical appraisal) tool to hone it. They provided textual prompts in their own words that they felt more applicable to OERs. They also commented on the inclusion of visual clues and some definitions of OERs as part of the tool. The resulting document was produced by students as an aid to selecting OER.

- Who is the author? Look them up.
- What is the relevance of points made?
- When was the OER produced?
- Why has the OER been produced?

The students confirmed that the resulting matrix was an effective tool for evaluating the use of OERs. The matrix included brief instructions as to how to use it, and explanations of what OER are and how to find them. One of the first areas questioned was that most OER viewed in the focus groups did not include any of the relevant information. Students commented that in looking at multimedia resources such as OER it was difficult to even find information on the author and date of publication by which to evaluate it:

*"...and this evaluating matrix can easily be used when evaluating the writing article or essay. But when we are looking animation it is difficult to find info that will be needed to make sure it reliable."*

The use of the word task in the "What" criterion was also confusing to students in the context of an OER compared to a journal article:

*"The matrix is more for journal/article based evaluation as these videos show no particular argument"*.

One of the biggest difficulties encountered that was unresolved was how to develop an appropriate question for evaluating the 'quality' of the multimedia design.

As a result of the focus groups, the matrix developed in an iterative way. A final version of it was evaluated with a number

of stakeholders including library staff, academics and an IT specialist. They all felt the matrix was useful with “a good visual strategy for indicating evaluation”. Limitations included that responses did not always fall into the clearly defined spaces, and areas for improvement included the inclusion of “something to do with the format of materials OERs usually Audio/Visual” and also turning it into an online tool.

## 5. Discussion

The aim of this paper was to investigate the concept of engaging students as ‘gatekeepers’ of OER quality. How to ensure and assure the quality of OER is an area ill-resolved, despite the fact that the notion of ‘quality’ is entrenched well within many definitions of OER, and it presents a persuasive argument for academic and political ‘buy-in’. Part of the problem might be there has been little insight into what the OER community actually means by quality, and whether this has different interpretations for different groups. Also, the responsibility for owning OER quality is not resolved, although suggestions are it needs to engage a wide range of stakeholders (Camilleri et al, 2014) and maybe even using learners as part of the process (UNESCO, 2011).

With the interest in OER and the promise of quality learning, there is surprisingly little empirical research that relates the perspectives of university students on using OER, and a significant gap in understanding activities of open / informal learners (Bacsich et al, 2011). The present study addressed part of these concerns by exploring university student views on OER. Around one third of students were aware of the term ‘open educational resource’. Students were also good at identifying some of the key characteristics of OERs including minimal copyright restrictions, free of fees, reusable and accessible (Hurt et al, 2013). In a larger-scale survey of the UK student body by the National Union of Students, data was gathered in 2012 via online survey with 2,807 respondents representing 150 institutions. Participating students were provided with a definition of OER, and then questioned on levels of awareness. Around one fifth of traditional students (full-time, campus based) and quarter of non-traditional students (over 25, studying at the Open University or studying part time) claimed to be aware of OER (National Union of Students, NUS, 2014). In the NUS survey, students claimed the most positive benefit of OER was to “improve the quality of my learning experience”, however the survey did not question more deeply the drivers and barriers to using OER that would have revealed more

of a sector-wide strategic context for moving forward the open education agenda. There are no studies that relate the perceptions of open learners or users of OER content on the web.

## Student Acceptance of ‘Value’ and ‘Quality’

The student interviews revealed an interesting perspective when they described their thought processes for selecting OER. Their decision-making was based on both quality and value propositions. They were describing OER in terms of the criteria relating to quality – currency of resource, authenticity of author, but they were also applying value judgments, based on ease of use. Such behaviours are also not new observations. In the ‘technology acceptance model’ proposed by Davis, Bagozzi and Warshaw it is the ease of use and perceived usefulness of the internet that primarily that drive end-behaviour (Davis, Bagozzi & Warshaw, 1989). In the further evaluation of this model with student learners, the perceived usefulness and ease of use of the web was persuasive toward their changing behaviour and use of the web in their studies and assignments (Sihombing, 2007). What isn’t clear is in terms of learning behaviour is whether in our study some students are selecting OERs based on ease of use because this relates to a lack of critical thought, or whether critical thought processes are being over-ridden by the enchantments of the internet. Gaps between students’ perception of their own critical ability and actual ability have been reported so such questions should form the basis of further research (Mathers & Leigh, 2008). These authors developed a tool to assist students in critical selection of research papers and this was a success. Others favour a more holistic strategy by involving students where possible in their own learning processes to ensure they are identifying their own working standards and making their own critical judgments:

*“The involvement of students in identifying standards and/or criteria to apply to their work and making judgments about the extent to which they have met these criteria and standards.” (Boud, 1991).*

Boud sees self-assessment as critical to the effectiveness of learning and lifelong learning and is part of the repertoire of academic skills - feedback from lecturers, peer-assessment that inform learning development. These all contribute to gaining confidence in making valid judgments, so therefore, should be built into courses to acquire skills. Boud’s concern that has been reflected more recently is that:



*“Care needs to be taken that it is not linked with activities which undermine the engagement of students in determining assessment criteria and in making their own decisions about their work”. (Boud, 2005).*

The present research was a case in point and therefore sought to allow students to work in multi-disciplinary university teams over a period of months to produce a student-centered learning tool. The outcome was an OER Evaluation Matrix, and perhaps the aspects of it that were unresolved, such whether evaluating the production and accessibility of multimedia resources, is less of a significant outcome considering that the students were part of an activity in which they were being encouraged to make decisions about their own work and approaches.

### OEREM as a Quality Evaluation Tool

The OER Evaluation Matrix (OEREM available to download: Hurt et al, 2014) that developed defined four parameters that students felt as important to judge the quality of resources. The Organisation for Economic Co-operation and Development. defines ‘quality of content’ as:

*“Currency, relevance and accuracy of the information. Is the content clear and concise and informed by scholarship, does it completely demonstrate the concepts, how flexible is it?” (Organisation for Economic Co-operation and Development, 2007).*

Without placing any pre-defined thoughts in the minds of the students participating in focus groups, aspects such as currency and relevance were identified as parameters, alongside authorship and the motivations for producing the resource. There was lack of consensus whether an evaluation of the technological aspects of the OER in their multiple formats should be included, perhaps because of the difficulties in doing so, and perhaps these would be construed as value rather than content quality judgments. One outcome of this work is it was used to inform the design of all future OERs from the group, with detailed title and credit pages included thereafter as standard practice.

The OEREM was clearly aligned to the ‘quality’ of the resource rather than its visual appeal. The question remains, would the tool influence student choice of resource, or would ‘value’ – time, ease of use – override these decisions? A further evaluation of the OEREM is required in order to determine this.

### The OER Quality Dilemma

This paper outlines empirical research in which student perceptions of OER was examined, alongside work that engaged students in a quality evaluation process. So where does this leave the notion of OER quality and quality assurance, and how does this mesh with the underlying philosophical benefit of OER to “provide open access to high-quality education resources on a global scale?” (Yuan et al, 2008). Does it matter that OER is not produced to the same rigorous quality assurance that is required of campus-based modules and programmes (Tannhäuser, 2012), or as we see elsewhere in relation to open courses such as MOOCs, the traditional academic norms and values of bricks and mortar institutions do not readily translate to open online learning, particularly in relation to the translation of ethical values of equality and diversity (Rolfe, 2013).

The altruistic nature and global reach of the OER movement might in itself create a problem. Randall Collins placed some thought around the need for conflict within intellectual pursuits as “the energy source of intellectual life” (Collins, 2000). In his work he outlines that creativity can become stagnant and remain unchallenged due to overarching social factors that prevent the critique and questioning of that very work. The necessity to infuse critical reflection in the OER arena is an urgent one, but due to its ideologically appeal, may result in a distinct lack of criticality.

We therefore return to the argument by Camilleri et al, (2014) in that quality approaches may be best served by holistic methods to involve responsibility by all stakeholders at each stage of the OER life cycle. Institutions and those releasing OER could explore peer-review and quality-informing processes involving the users of materials, although it is not clear what the diversity of specific needs would be. Recognising and satisfying learner needs in massive online open courses is known to be a challenge with some participants feeling intimidated and overwhelmed by the lack of structure, whilst others thrive (Kop, Fournier & Mak (2011). Not just in terms of academic skills and ability, other pressures fall on autonomous, self-directed learners and one strategy adopted is to show patterns of activity followed by ‘lurking’ in order to meet the demands of everyday life (Kop & Carroll, 2012).

The present research is limited in that it provides the context of one UK higher education institution in which there was a reasonable level of OER activity within the faculty in question. Mixed method approaches comprising questionnaire and

student interview provide a robust insight into student awareness and perceptions of OER, and using a team of researchers added validity to the analysis. Much of this research was part of a Masters dissertation project and the student was supervised by two academics including a Professor of Social Science and another experienced in the evaluation of open education.

The development of the OEREM was carried out in an iterative way, and although feedback from stakeholders was deemed positive, a longitudinal study of the impact of the matrix would provide in-sight into its effectiveness, and whether it also acts as a decision-making tool. A major limitation to the study is that it involved university-based students and did not consider the views of other open learners that use OER that are likely to offer a much more colourful and less polarised perspective.

## 6. Conclusions

In conclusion, the notion of OER quality assurance and enhancement is complex and requires an exploration of how to address it, particularly considering the growth of the global OER movement and increasingly widespread adoption of open practices.

The need to evaluate OER quality and the critical processes implicit may conflict with the altruistic and philosophical stances of 'open'. These bridges need to be crossed because policy-makers are looking for high quality learning resources to inform their decision-making.

One approach to engage students in OER quality control could be the use of the OEREM, although as this paper shows, further research is required to evaluate its effectiveness, and to question whether it assists with student selection of online learning materials or whether they will do so based on the basis of study value and quality. Research is certainly needed to understand more about the communities of open learners whose levels of literacy, learning behaviours and circumstances are simply not well understood.

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