

Open Educational Resources and Developing Countries: One Critical View

UDC 37.014(1-773)

DOI 10.18485/infoteca.2017.17.1.3

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ABSTRACT: This paper examines the global socio-economic context of the emergence of open educational resources and their special role in the educational systems of the developing countries. The central place is reserved for the very idea of education, which is elaborated through a selection of criticisms and analyses of educational reforms and through questions of basic conditions, methods of teaching and expected results in education. Special attention is given to global poverty, that is, uneven global development, and in line with that to the increasingly aggressive reproduction of the existent socio-economic relations by means of uneven education. The consideration of these general conditions results in an inevitably sceptical and critical approach to the ideological, technological and pedagogical aspects of the initiatives that create and promote open educational resources.

KEYWORDS: open educational resources, developing countries, globalisation, inequality

PAPER SUBMITTED: 16 October 2016

PAPER ACCEPTED: 23 December 2016

1 What are open educational resources?

Open educational resources (OER) are any type of educational materials that are in the public domain or are released with an open licence, and that

can therefore be copied, used, adapted and re-shared freely and legally¹. In 2001 the Massachusetts Institute of Technology announced that it would be making all of its university courses freely accessible for non-commercial use, which led to the emergence of open courses. The term “open educational resources” was formally adopted in 2002 at the Forum on the Impact of Open Courseware for Higher Education in Developing Countries, convened by the United Nations Educational, Scientific and Cultural Organization (UNESCO).

In 2005 the Centre for Educational Research and Innovation (CERI) of the Organisation for Economic Cooperation and Development (OECD) began a twenty-month study on the purpose, content, quality and funding of OER (Hylén, 2006, 1). The final report was published in 2007, and its conclusion is that OER can significantly affect curricula, pedagogy and assessment in traditional institutions; teachers, who instead of being “sages on the stage” have already become “guides on the side”, will also lose their mediating role in providing learning materials. The need for assessment and recognition of competence acquired outside formal learning settings is likely to grow. Adapting to this, established institutions of higher education could have assessment as their primary goal instead of teaching (Center for Educational Research and Innovation, 2007, 125). The report presents these trends as inevitable and treats them pragmatically, not critically.

The 2012 Paris OER Declaration was adopted at the 2012 World OER Congress, held at the headquarters of UNESCO in Paris, and it recommends that governments, within their capabilities and powers:

1. foster awareness and use of OER;
2. facilitate enabling environments for use of information and communication technologies (ICT);
3. reinforce the development of strategies and policies in OER;
4. promote the understanding and use of open licensing frameworks;
5. support capacity building for the sustainable development of quality learning materials;
6. foster strategic alliances for open resources;
7. encourage the development and adaptation of OER in a variety of languages and cultural contexts;
8. encourage research on OER;

¹ UNESCO. “Open educational resources”. Promotional video, 00:00-00:35 (3:05). Published 2012. Accessed 10 August 2016, http://www.unesco.org/archives/multimedia/?s=films_details&id_page=33&id_film=2573

9. facilitate finding, retrieving and sharing of OER;
10. encourage the open licensing of educational materials produced with public funds.

2 The purpose of education

The question of the purpose of education is often overlooked in discussions about the necessary reforms and available resources in education. Can education be expected to bring about the development of personal potential and social consciousness? What is the basis of an authentic social contribution, and how important is the authenticity of one’s learning experience?

Creativity, individuality, social wealth and culture, as well as social awareness and responsibility, are central issues both in the contemporary critical pedagogy of capitalist societies and in socialist reforms implemented in the Soviet Union and elsewhere during the twentieth century.

Anton Makarenko, one of the founders of Soviet pedagogy, thought that the development of personality and character was the fundamental purpose of education, which therefore had to encompass all aspects of life. He pointed out that the full potential of individuals and collectives could be achieved only through respect and the understanding of individual and collective inclinations, abilities and needs. For that reason, fixed patterns could not be tolerated in education, and teaching resources had to be appropriate to the circumstances. Thanks to him, work, which had to be creative, collective and productive, was given an important place in education. Such work was to allow for personal expression, cooperation and the establishment of discipline, and the realisation of its social purpose – that is, its contribution to the economic strength of the society – would bring satisfaction, self-esteem and a sense of belonging (Makarenko, 1965).

The English professor and author Ken Robinson, an international adviser on education in the arts to governments, non-governmental organisations and educational and cultural institutions, notes four basic purposes of public education: economic development; the understanding of one’s own identity and the identity of others, as a condition for overcoming conflicts of cultures, traditions and world views; the development of social awareness and responsibility; and the development of personal inclinations and abilities².

² Ken Robinson. “How to change education: From the ground up”. YouTube video, 01:00-10:00 (24:02). A video recording of a lecture held at the Royal Society of

OER represent fixed patterns, and as means of teaching they are appropriate to the particular circumstances of the educational systems in which they are created, and thus to the individual and collective inclinations, abilities and needs that exist within these circumstances and that these educational systems recognise. Furthermore, OER contribute primarily to the economic development of developed countries, and accordingly to the expansion of already dominant cultures and world views.

3 Global education

Globalisation is not only an economic and political but also a cultural process, which has a decisive influence on education. Criticism of the globalisation of education cannot be developed independently of the general criticism of globalisation as a comprehensive process that involves and encourages competition between unequal. The greatest economic powers, and the greatest advocates of globalisation, argue that competition is the main driver of development. The application of this idea to education has far-reaching and tragic consequences. Students compete for a place in schools and universities; schools and universities compete for financial support and survival. Curricula and the organisation of teaching and learning activities in developing countries are being adapted to global developmental needs, which are determined by the developed countries. Standardised tests and school rankings should provide equal criteria for success, whereas unequal local conditions and different local needs are being crudely neglected.

The implementation of the Programme for International Student Assessment (PISA) began in 2000, and now half a million fifteen-year-olds from 65 countries and local administrations participate in it. The 2014 OECD report on PISA shows that the socio-economic context is the main determinant of the success for the participating countries, and emphasises the importance not just of the overall funding of education but also of equal distribution of available resources, which achieves the same quality of education for all children (OECD, 2014). Critics of this programme, such as participants in the TV debate “Is schooling for all a realistic goal?”³ and the signatories of the

Arts in London on 1 July 2013. Uploaded by “The RSA” 18 July 2013, <https://www.youtube.com/watch?v=BEsZ0nyQzxQ>

³ Al Jazeera English. “Is schooling for all a realistic goal?”. TV debate, 12:20-15:20 (24:24). Al Jazeera English, 2014. Accessed 12 May 2016, <http://www.aljazeera.com/programmes/insidestory/2014/04/schooling-all-realistic-goal-2014410151530585416.html>

letter to the main coordinator of the PISA programme, Andreas Schleicher (Meyer and Zahedi, 2014, i), point out that it does not take into account a whole range of skills that are essential for the development of children. According to them, it significantly narrows the concept of education, and success at this test does not reflect the real quality of a given educational system. Without disputing the importance of good results in mathematics and language, they refer to other important aspects of education, including creativity, self-confidence and the ability to interact. Additionally, the very practice of testing and ranking, although generally inevitable and present to some extent in all educational systems, represents a specific approach to education, which, depending on the stated objectives, can be more or less productive, but also extremely destructive. The enormous pressure on children of the countries successful at the PISA test causes serious damage to their health (Zhao, 2010), yet, in the global competition that the programme promotes, the educational systems of these countries are put forward as models of excellence (Zhao, 2014).

In 2001 the United States adopted the No Child Left Behind Act, which forced students, teachers and schools to compete against one another. Similar to that of PISA, the testing required by this act was of narrow focus and was not sufficiently adapted to the specific inclinations of children and to the specific circumstances of their upbringing, and it was conducted under a threat of closure for schools that failed to achieve an adequate success. Schools were required to guarantee that all children would acquire a prescribed minimum competence in reading, writing and mathematics, while programmes that did not directly contribute to this goal would lose support or be completely abolished (Leyva, 2009, 10). Although it is promoted as legislation aimed at helping disadvantaged children, many critics argue that the effects of its application are exactly the opposite. And this is what the children say about these tests:

"I just can't handle it. I just can't. Oh my, I'm so embarrassed"! "I have the whole world on my shoulders. This goes on my report card, then my college education, and that gets me a good job". "My hands were sweaty. I almost started crying and I had a funny feeling in my stomach. I hope I never feel that way again, especially [because of] some test [in which] I can't show the amazing work I did all year". "Why judge them only on one test? Why not homework? How about how neat they write, how much they've improved throughout the year..." "This test doesn't show the work you can do best,

like writing, my favorite. Every day I grow stronger, but do you see that? No..." "I feel that we shouldn't have to be nervous this young".⁴

Understanding the phenomenon of OER requires an examination not only of the technological circumstances of their conception, and the conditions and possibilities for their further development, but also of the socio-economic and ideological framework within which they are alternately promoted as a complement to the institutional programmes, a solution for the lack of institutional capacity and a radical challenge to the dominance of institutions (Knox, 2013, 4). Their emergence coincides with the first PISA test, with the No Child Left Behind Act in the United States and with the World Education Forum held in Dakar in 2000, which will be discussed in more detail below. All these initiatives are devoted to the increase of "human capital"⁵⁶ (Kwon, 2009), instead of to the realisation of human potential, and to the education of a "globally competitive workforce" (Spellings, 2012), often to the detriment of the development of locally relevant competences.

In a capitalist society the educational system is subservient to the interests of capital, and its main purpose is the legitimisation and reproduction of existing social relations (Bukharin, 2001). The social value of education, as of any other social programme, loses importance, and one's education becomes a question of one's inclinations and personal benefit, which serves to explain the exclusion of the educational system from the domain of social organisation and responsibility. Everyone who expects to benefit from education is free to invest in it, in accordance with their expectations, but is also obliged to bear the risk of that investment. A preoccupation with their own ambitions and success leads students to competition at the expense of cooperation and a concern for the collective progress and learning environment (Leyva, 2009, 10)(Saunders, 2010, 23). OER rely on the self-initiative and

⁴ Lerone D. Wilson. *No Child Left Behind*. A documentary film. Boondoggle Media, 2004. YouTube video, 00:00-01:45 (56:02). Uploaded by "Boondoggle" 6 April 2011. Accessed 15 June 2016, <https://www.youtube.com/watch?v=yiGN7kVyeAM>

⁵ UN Department of Economic and Social Affairs (DESA). "Linking education to human capital development". Published 21 March 2011. Accessed 21 May 2016, http://www.un.org/en/development/desa/news/ecosoc/linking_education.html

⁶ UN Department of Economic and Social Affairs (DESA). "Human and natural capital as important as financial capital". Published 17 May 2012. Accessed 21 May 2016, <http://www.un.org/en/development/desa/news/financing/new-paradigm-job-creation.html>

self-directedness of their users, because they do not offer a dynamic learning environment that fosters the formation of a genuine collective. Despite this, they are promoted as the best educational resources: their creators are referred to as the best researchers and educators in their respective fields; their production and distribution involves the latest technologies, which are unreservedly presumed to be the best; and their users are undoubtedly those who want the best for themselves⁷ (Knox, 2013, 4).

The great interest shown in OER is a reflection of the importance and influence of the institutions that create them, but it also opens the way for the further expansion of their intellectual domination. OER are created mostly by elite institutions of developed countries while all other institutions are easily reduced to passive users of available resources, contributing little or nothing to the global exchange and flow of knowledge. The status quo - the economic and technological superiority of elite institutions - is affirmed and strengthened in this way. With appropriate accreditations, this approach to education could make many traditional institutions redundant. It is not difficult to imagine that, while creating a short-term illusion of flexibility and cost-reduction, this trend could lead in the near future to the monopolisation of global education.

OER are still poorly defined, and one must be wary of possible obstacles to their free use. The formats that require proprietary software for access and modification as well as technically limited platforms for content distribution fundamentally restrict the usability of OER. OER rarely justify their name, given the confusion that exists regarding the appropriate open licence: they are often understood to be free educational resources that do not allow modification, which means that they cannot be translated into other languages and adapted to local contexts (Hoel, 2014) without appropriate permissions issued on request, as is the case with most massive open online courses (MOOC).

4 Global inequality

Providing basic education for all the children of the world by 2015 was one of the Millennium Development Goals of the United Nations. According to recent data, 263 million children aged six to seventeen do not attend school,

⁷ UNESCO. "Open educational resources". Promotional video, 00:43-01:03 (3:05).

Published 2012. Accessed 10 August 2016, http://www.unesco.org/archives/multimedia/?s=films_details&id_page=33&id_film=2573

with 93.3 million of those living in sub-Saharan Africa and 100.8 million in south Asia⁸. According to a report published by the United Nations in 2014, 125 million children lack the basic skills of reading and writing after four years of primary education, which calls into question the quality of teaching and teachers (UNESCO, 2014, i). The World Education Forum in Dakar in 2000 set six goals that were to be achieved by 2015 (UNESCO, 2000, 15–17):

1. expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children;
2. ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to and complete free and compulsory primary education of good quality;
3. ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills programmes;
4. achieving a 50 per cent improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults;
5. eliminating gender disparities in primary and secondary education by 2005, and achieving gender equality in education by 2015, with a focus on ensuring girls' full and equal access to and achievement in basic education of good quality;
6. improving every aspect of the quality of education, and ensuring their excellence so that recognised and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills.

UNESCO warns that these goals cannot be achieved without a significant change in the approach of states to the provision of education. Lack of political will at the national level is accompanied by a lack of political will on the part of the international community. When these goals were set it was agreed that every country with a plan would have the resources for the realisation of that plan, which has not happened in practice.⁹

⁸ UNESCO Institute for Statistics. “263 million children and youth are out of school”. Published 15 July 2016. Accessed 22 August 2016, <http://uis.unesco.org/en/news/263-million-children-and-youth-are-out-school>

⁹ Al Jazeera English. “Is schooling for all a realistic goal?”. TV debate, 02:55-03:15 (24:24). Al Jazeera English, 2014. Accessed 12 May 2016, <http://www.aljazeera.com/programmes/insidestory/2014/04/schooling-all-realistic-goal-2014410151530585416.html>

Globally, the number of out-of-school children in conflict zones has reached 61.9 million in 2016.¹⁰ The number of Syrian children not attending school, whether they are in war-torn Syria or in exile, is at the moment 2 million and is growing daily¹¹. In the schools of Gaza in September 2014, after two months of the bombing by Israel, collective therapy for students rather than lessons marked the delayed start of the school year (Weibel, 2014).

Wars prevent development, and the destruction of infrastructure can turn developed countries into developing ones (Zolnikov, 2013). Infrastructure problems make coping with diseases and natural disasters difficult, and corruption and organised crime obstruct efforts to solve infrastructural problems.¹² In the case of Haiti, the recovery from the 2010 earthquake and the cholera epidemic that followed was complicated by political instability, the irresponsibility of international organisations (Pilkington, 2016) and the poor coordination of numerous charitable organisations and initiatives (Knox, 2015). It is estimated that about half of Haitian children will never enter a classroom.¹³ Schools in developing countries often have no electricity, drinkable water and basic sanitary conditions. Those schools that have some kind of electricity might not also have internet access. And even when they have internet access they lack qualified ICT teachers (Cave, 2013)(Mungai, 2011). Already lacking adequate resources and the necessary support, teachers in these countries are forced to work with a large number of students, which significantly limits their capacity for innovation in educational programmes. Overlooking these limitations may result in the

¹⁰ UNESCO Institute for Statistics. "263 million children and youth are out of school". Published 15 July 2016. Accessed 22 August 2016, <http://uis.unesco.org/en/news/263-million-children-and-youth-are-out-of-school>

¹¹ Save the Children. "Children of Syria". Published 2016. Accessed 15 August 2016, <http://www.savethechildren.org/site/c.8rKLXMGIpI4E/b.7998857/k.D075/Syria.htm>

¹² UN Interregional Crime and Justice Research Institute. "Organized crime and corruption". Accessed 27 July 2016, http://www.unicri.it/topics/organized_crime_corruption

¹³ Al Jazeera English. "Is schooling for all a realistic goal?". TV debate, 19:55–20:00 (24:24). Al Jazeera English, 2014. Accessed 12 May 2016, <http://www.aljazeera.com/programmes/insidestory/2014/04/schooling-all-realistic-goal-2014410151530585416.html>

alienation of teachers and the collapse of an already fragile educational system.¹⁴

In such extreme circumstances, questions of innovation in education, in the form of modern methods and technologies and, in accordance with that, the appropriate training of teachers, seem absurd. However, there are schools at which computers arrive before there is a regular power supply: examples of this are the solar classrooms in Uganda¹⁵ and the digital villages in South Africa (Cave, 2013). These are donor projects, but, given that infrastructural development in these countries largely depends on donations, the order of priorities is certainly confusing. Charities and non-governmental organisations implementing these projects, with the support of major corporations such as Intel and Microsoft, state that their goals are “lifting Africa out of the poverty trap by equipping the next generation to work in a global environment”¹⁶, but also “encouraging and supporting the formation of Information Communication Technology businesses”.¹⁷

Many children in developing countries are forced to help their parents feed their families, either by doing jobs that endanger their health or by helping with the housework and the upbringing of the younger children while their parents work.¹⁸ To these children, even free education remains inaccessible. In developing countries, large ICT companies are simultaneously exploiting child labour (Russell, 2016) and sponsoring OER, by means of which they promote themselves.¹⁹

By using cheap labour, the ICT industry, like any other, achieves higher profits and lower costs of products and services, so the strong interest in

¹⁴ Al Jazeera English. “Is schooling for all a realistic goal?”. TV debate, 17:10–17:15 (24:24). Al Jazeera English, 2014. Accessed 12 May 2016, <http://www.aljazeera.com/programmes/insidestory/2014/04/schooling-all-realistic-goal-2014410151530585416.html>

¹⁵ Maendeleo Foundation. “Mobile solar computer classrooms”. Published 2015. Accessed 23 May 2016, <http://maendeleofoundation.org/projects/mobile-solar-computer-classrooms>

¹⁶ Computers 4 Africa. “About Computers 4 Africa”. Accessed 23 May 2016, <http://www.computers4africa.org.uk/about/index.php>

¹⁷ Maendeleo Foundation. “About us”. Accessed 23 May 2016, <http://maendeleofoundation.org/our-story/>

¹⁸ UNICEF. “Child labour”. UNICEF, 11 June 2015. Accessed 20 May 2016, https://www.unicef.org/protection/57929_child_labour.html

¹⁹ OER Africa. “Who we are”. Accessed 20 August 2016, <http://www.oerafrica.org/about-us/who-we-are>

training new generations of ICT workers in developing countries should not be at all surprising. The minimum wage in China is currently about nine times lower than the legally prescribed minimum in the US^{20,21}, in India 20 times lower, and in Uganda 725 times.²² The way the ICT giants conduct their business in China and India well illustrates the possible path of development for countries that seek their chance for development in this sector²³(Chakrabortty, 2013)(Garside and Arthur, 2013).

5 Conclusion

OER are promoted as being especially useful for those who want to learn but are unable to engage in traditional models of learning. To such potential users they offer emancipation and the liberation from oppression and poor living conditions (Knox, 2013, 7), despite the fact that the extremely poor living conditions and oppression around the world are often caused by the sponsors of the institutions that create OER^{24,25}(Washburn, 2010, 5)(Palomino, 2013)(McClenaghan, 2015)(Burgis, 2015).

Unequal education is the result, not the cause, of the basic economic inequality. The claim that education offers a way out of poverty is omnipresent

²⁰ WageIndicator. "Minimum wages". WageIndicator, 2016. Accessed 23 July 2016, <http://www.wageindicator.org/main/salary/minimum-wage>

²¹ United States Department of Labor. "Minimum wage". United States Department of Labor. Accessed 23 July 2016, <https://www.dol.gov/general/topic/wages/minimumwage>

²² WageIndicator. "Minimum wages". WageIndicator, 2016. Accessed 23 July 2016, <http://www.wageindicator.org/main/salary/minimum-wage>

²³ Al Jazeera English. "India: High tech mirage". Documentary programme, 00:00-00:35 (24:59). Al Jazeera English, 2014. Accessed 25 May 2016, <http://www.aljazeera.com/programmes/peopleandpower/2014/03/india-high-tech-mirage-201431985356939298.html>

²⁴ Multinational Monitor. "BP: A legacy of apartheid, pollution and exploitation". Multinational Monitor, 1992. Accessed 15 June 2016, http://www.multinationalmonitor.org/hyper/issues/1992/11/mm1192_11.html

²⁵ Al Jazeera English. "The Secret of the Seven Sisters". Documentary series in four parts with an accompanying description. Al Jazeera English, 26 April 2013. Accessed 28 July 2016, <http://www.aljazeera.com/programmes/specialseries/2013/04/201344105231487582.html>. YouTube video, 3:10:02. Posted by "Rebaz Zedbagi" 25 May 2014. Accessed 28 July 2016, <https://www.youtube.com/watch?v=XtY0jMmEMeg>

both in the promotion of OER and in the more comprehensive international campaigns and appeals. To the poorest, however, it offers only a hope in utter hopelessness. A boy in Haiti explains his school attendance this way: “Mum and Dad send me to school to learn so when I grow up I am able to live a good life and have a nice car, like everyone else”, while his teacher stresses: “Without school there is no life. If you become president, it’s because you went to school”²⁶.

Education systems that lack financial resources cannot be helped by the additional funding of the best-funded educational systems. Materials for teaching and learning are only part of the complex process of education, and their availability only partially contributes to the accessibility of education. Any contribution to increasing access to education deserves proportionate praise and support, but campaigns, appeals and propaganda material calling for the support of OER equate accessibility with applicability, thus creating a wrong idea about the potential contribution of OER to improving global education (Bates, 2011)(Crissinger, 2015). OER do not offer but presume adequate solutions for understaffing, infrastructural and other problems of educational systems, in both developed and developing countries, and consequently direct attention away from these problems rather than towards their solution. The bigger the problems a country faces, the bigger the damage it suffers.

References

Bates, Tony. “OERs: The good, the bad and the ugly”. *Online Learning and Distance Education Resources (blog)* (6 February 2011). Accessed 14 July 2016, <http://www.tonybates.ca/2011/02/06/oers-the-good-the-bad-and-the-ugly>

Nikolai Bukharin and Evgenii Preobrazhensky. *The ABC of Communism*. Marxists Internet Archive, 1965

Burgis, Tom. “Big Oil’s sleazy Africa secrets: How American companies and super-rich exploit natural resources”. *Salon*, 6 April 2015. Accessed 15 June 2016, http://www.salon.com/2015/04/06/big_oils_sleazy_africa_secrets_how_american_companies_and_super_rich_exploit_natural_resources

²⁶ Al Jazeera English. “Is schooling for all a realistic goal?”. TV debate, 19:10-19:45 (24:24). Al Jazeera English, 2014. Accessed 12 May 2016, <http://www.aljazeera.com/programmes/insidestory/2014/04/schooling-all-realistic-goal-2014410151530585416.html>

Cave, Kathryn. "South Africa: Why have all the rural tech projects failed?". *IDG Connect*, 21 June 2013. Accessed 25 May 2016, <http://www.idgconnect.com/blog-abstract/2292/south-africa-why-have-all-rural-tech-projects-failed>

Center for Educational Research and Innovation (CERI). *Giving Knowledge for Free: The Emergence of Open Educational Resources*. Paris: OECD, 2007. Accessed 15 June 2016, <https://www.oecd.org/edu/ceri/38654317.pdf>

Chakrabortty, Aditya. "The woman who nearly died making your iPad". *The Guardian* no. 25(25 August 2013). Accessed 25 May 2016, <https://www.theguardian.com/commentisfree/2013/aug/05/woman-nearly-died-making-ipad>

Crissinger, Sarah. "A critical take on OER practices: Interrogating commercialization, colonialism and content". *In the Library with the Lead Pipe (blog)* (21 October 2015). Accessed 14 July 2016, <http://www.inthelibrarywiththeleadpipe.org/2015/a-critical-take-on-oer-practices-interrogating-commercialization-colonialism-and-content>

Garside, Juliette and Charles Arthur. "Workers' rights 'flouted' at Apple's iPhone factory in China". *The Guardian* no. 5 (5 September 2013). Accessed 25 May 2016, <https://www.theguardian.com/technology/2013/sep/05/workers-rights-flouted-apple-iphone-plant>

Hoel, Tore. "Adopting OER for less used languages: We need hard talk on tools and infrastructure!". *Nordic OER*, 11 April 2014, archived by Internet Archive Way Back Machine 11 March 2015. Accessed 11 August 2016, <https://web.archive.org/web/20150311234754/http://nordicoer.org/adopting-oer-less-used-languages-need-hard-talk-tools-infrastructure>

Hylén, Jan. "Mapping users and producers of open educational resources". UNESCO, November 2006. Accessed 25 May 2016, http://www.unesco.org/iiep/virtualuniversity/media/forum/iiep_oecd_oer_forum_note1.pdf

Knox, Jeremy. "Five critiques of the open educational resources movement". *Teaching in Higher Education* Vol. 18, no. 8(2013): 821–832. Accessed 2 August 2016, http://www.academia.edu/2651447/Knox_J._2013_Five_Critiques_of_the_Open_Educational_Resources_Movement._Teaching_in_Higher_Education

Knox, Richard. "5 years after Haiti's earthquake, where did the \$13.5 billion go?". *NPR*, 12 January 2015. Accessed 20 May 2016. http://www.academia.edu/2651447/Knox_J._2013_Five_Critiques_of_the_Open_Educational_Resources_Movement._Teaching_in_Higher_Education

<http://www.npr.org/sections/goatsandsoda/2015/01/12/376138864/5-years-after-haiti-s-earthquake-why-aren-t-things-better>

Kwon, Dae-Bong. "Human capital and its measurement". In *3rd OECD World Forum on "Statistics, Knowledge and Policy": Charting Progress, Building Visions, Improving Life. Busan, South Korea, 27-30 October 2009*, 2009. Accessed 1 August 2016, <http://www.oecd.org/site/progresskorea/44109779.pdf>

Leyva, Rodolfo. "No Child Left Behind: A neoliberal repackaging of social darwinism". *Journal for Critical Education Policy Studies* Vol. 7, no. 1(2009): 365–381. Accessed 25 July 2016, <http://www.jceps.com/wp-content/uploads/PDFs/07-1-15.pdf>

Makarenko, Anton S. *Problems of Soviet School Education*. Moscow: Progress Publishers, 1965

McClennaghan, Meave. "Investigation: Top universities take £134m from fossil fuel giants despite divestment drive". *Greenpeace Energydesk*, 23 October 2015. Accessed 15 June 2016, <http://energydesk.greenpeace.org/2015/10/23/data-top-universities-take-134m-from-fossil-fuel-giants-despite-divestment-drive>

Meyer, Heinz-Dieter and Katie Zahedi. "Open letter to Andreas Schleicher". *Global Policy Journal* (5 May 2014). Accessed 20 May 2016, <http://www.globalpolicyjournal.com/blog/05/05/2014/open-letter-andreas-schleicher-oecd-paris>

Mungai, Martin. "12 challenges facing computer education in Kenyan schools". *ICT Works*, 12 September 2011. Accessed 29 July 2016. <http://www.ictworks.org/2011/09/12/12-challenges-facing-computer-education-kenyan-schools>

OECD. "How is equality in resource allocation related to student performance?". *PISA in Focus* no. 44(2014). Accessed 17 May 2016, [https://www.oecd.org/pisa/pisaproducts/pisainfocus/pisa-in-focus-n44-\(eng\)-final.pdf](https://www.oecd.org/pisa/pisaproducts/pisainfocus/pisa-in-focus-n44-(eng)-final.pdf)

Palomino, Joaquin. "The university of private enterprise", *East Bay Express* (10 April 2013). Accessed 15 June 2016, <http://www.eastbayexpress.com/oakland/the-university-of-private-enterprise/Content?oid=3518686>

Pilkington, Ed. "UN makes first public admission of blame for Haiti cholera outbreak". *The Guardian* no. 18(18 August 2016). Accessed 20 May 2016, <https://www.theguardian.com/world/2016/aug/18/un-public-admission-haiti-cholera-outbreak>

Russell, Jon. "Apple, Microsoft, Samsung and other tech firms implicated in child labour report". *TechCrunch* (19 January 2016). Accessed 27

May 2016, <https://techcrunch.com/2016/01/19/apple-microsoft-samsung-and-other-tech-firms-implicated-in-child-labor-report>

Saunders, Daniel B. "Neoliberal ideology and public higher education in the United States". *Journal for Critical Education Policy Studies* Vol. 8, no. 1(2010): 41–77. Accessed 25 July 2016, <http://www.jceps.com/wp-content/uploads/PDFs/08-1-02.pdf>

Spellings, Margaret. "Building a globally competitive workforce". *US Chamber of Commerce Foundation*, 31 May 2012. Accessed 4 August 2016, <https://www.uschamberfoundation.org/newsletter-article/building-globally-competitive-workforce>

UNESCO. "The Dakar Framework for Action: Education for All: Meeting Our Collective Commitments". In *World Education Forum, Dakar, Senegal, 26–28 April*. UNESCO, 2000. Accessed 15 May 2016, <http://unesdoc.unesco.org/images/0012/001211/121147e.pdf>

UNESCO. "Teaching and Learning: Achieving Quality for All (Education for All Global Monitoring Report, 2013/4)". Techrep. UNESCO, 2014. Accessed 15 May 2016, <http://en.unesco.org/gem-report/report/2014/teaching-and-learning-achieving-quality-all>

Washburn, Jennifer. "Big Oil Goes to College: An Analysis of 10 Research Collaboration Contracts between Leading Energy Companies and Major U.S. Universities". Techrep. Center for American Progress, 2010. Accessed 15 June 2016, https://www.americanprogress.org/wp-content/uploads/issues/2010/10/pdf/big_oil_1f.pdf

Weibel, Catherine. "In Gaza, children go back to school after a devastating summer". UNICEF, 2014. Accessed 10 June 2016, http://www.unicef.org/education/oPt_75921.html

Zhao, Yong. "A true wake-up call for Arne Duncan". *Education in the Age of Globalization (blog)* (10 December 2010). Accessed 15 May 2016, <http://zhaolearning.com/2010/12/10/a-true-wake-up-call-for-arne-duncan-the-real-reason-behind-chinese-students-top-pisa-performance>

Zhao, Yong. "How does PISA put the world at risk (part 1): Romanticizing misery". *Education in the Age of Globalization (blog)* (9 March 2014). Accessed 15 May 2016, <http://zhaolearning.com/2014/03/09/how-does-pisa-put-the-world-at-risk-part-1-romanticizing-misery>

Zolnikov, Tara Rava. "From developed to developing country: Water and war in Iraq". *Johns Hopkins Water Magazine* (31 May 2013). Accessed 5 July 2016, <http://water.jhu.edu/index.php/magazine/from-developed-to-developing-country-water-and-war-in-iraq>