



United Nations
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UNESCO Institute
for Information Technologies
in Education

Andreia Inamorato dos Santos

Open Educational Resources in Brazil:

State-of-the-Art, Challenges and
Prospects for Development
and Innovation



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Foreword

The UNESCO Institute for Information Technologies in Education (IITE) is running a project on Open Educational Resources (OER) aimed at promotion of the OER movement in non-English-speaking countries. During the first stage of the project a survey of the state-of-the-art of OER in Armenia, Azerbaijan, Belarus, Kazakhstan, Moldova, the Russian Federation, Ukraine, Uzbekistan, and in two Baltic countries - Latvia and Lithuania - was completed. Later on the geographical scope of the IITE survey expanded to include Japan, People's Republic of China, Brazil, Turkey and Vietnam to provide further insight into the diversity of OER-related patterns in non-English-speaking countries.

The results of the cross-national survey of OER in the Commonwealth of Independent States were published in the monograph "CIS on the Way towards OER". The study "Open Educational Resources in Lithuania" by Airina Volungevičienė opened the series of case studies summarizing best practices in OER in surveyed countries – Brazil, China, Lithuania and Russia. The case study "Open Educational Resources in Brazil: State-of-the-Art, Challenges and Prospects for Development and Innovation" completed by Andreia Inamorato dos Santos is the second book in this series.

The study contains an overview of the Brazilian educational landscape, national educational policy and the strategies of ICT use in education. The author describes existing open digital content repositories with due emphasis on the copyright situation and considers several examples of successful international OER projects which involved Brazilian partners. Recommendations for expanding the use of OER proposed in this publication, in line with those stated in IITE policy briefs "Global trends in the development and use of open educational resources to reform educational practices" and "Open Educational Resources and Intellectual Property Rights", cover policy, copyright, pedagogy and technology aspects. They encompass a variety of issues typical of basic and higher education sectors and can be applicable to other developing countries experimenting with the concept of OER and willing to develop a coherent approach to expand the use of open educational content in formal, non-formal and informal education.

Dendev Badarch
UNESCO IITE Director a.i.

Preface

With Brazil last year coming to the end of a ten-year National Education Plan (2000-2010) and soon to launch its successor (2011-2020), now would appear to be an opportune moment to analyse the evolution of the country's education system.

This study by Andreia Inamorato offers just such an analysis. It focuses particularly on the use of open-digital-content and OER in the context of the national priorities for education, including a detailed review of the previous period and offers recommendations for the period to come.

This necessary and original review analyses seven of the 20 goals now being discussed by the Brazilian National Congress with regard to the 2011-2020 plan, along with some of the strategies that accompany the goals.

Included in both the previous plan and the one now before Congress is the recommendation that information and communication technologies be used throughout basic and higher education. Literature, however, shows a conspicuous lack of analysis regarding experience so far with open-digital-content and open educational resources. Without such analysis, how will it be possible to gauge the work that still needs to be done? Or, what should be the recommendations in this area to foster the qualitative and quantitative progress concerning digital multimedia content available for teachers to use in classrooms?

As a former National Secretary for Distance Education and National Secretary for Higher Education, I had the opportunity to participate in the creation and development of many projects – such as the Brazilian Open University (UAB), Teacher's Portal and RIVED – where the use of virtual learning objects was considered very important in terms of tutoring and self-study programmes for both teachers and learners. Those materials were always understood as open digital-content initiatives.

This review should serve as a reference point for those wishing to understand the Brazilian situation with regard to digital-content repository initiatives and OER. I do hope it will be made available in time to influence the first steps to be taken in the new National Education Plan as it embarks on the challenge of enhancing the performance of Brazilian students at all levels.

Dr. Ronaldo Mota
National Secretary for Technological Development and Innovation
Brazilian Ministry of Science, Technology and Innovation

Introduction

Brazil is a country of both quality and inequalities. With a population of over 190 million people distributed over a territory that covers 47% of South America, the task of providing education for all is undoubtedly a challenge.

Brazil has been making increasing efforts to provide world-class education at basic education level, as identified by the latest World Bank Report¹, but has been facing a number of challenges, particularly in four key areas: raising teacher quality, protecting the early development of the most vulnerable, building a world-class secondary education system, and maximizing the impact of federal policy on basic education.

In order to improve the general status of education in Brazil, the federal government has been applying a systemic approach. This involves an understanding of the interdependence between all educational levels (basic and higher education) and the need to invest efforts in all of them simultaneously in order to foster quantitative and qualitative improvement across the entire education system.

According to the latest PISA² results, Brazil has risen from the bottom to 51st position in nine years (2000-2009) out of 65 countries assessed. Despite this progress, Brazil is still falling behind the average learning levels of other middle-income countries (Chile, Uruguay and Mexico).

Brazil's recent progress is due in large part to the massive expansion of schooling in the last 15 years, and more recently to the quality targets established by the federal government. The National Education Plan (PNE) is what underpins all educational decisions in the country. This plan is a basis of specific plans, such as the PDE (Education Development Plan).

This survey provides an overview of current open-digital content and, whenever applicable, open educational resources (OER) initiatives within the context of the action plan developed as a result of the PNE (2001-2010). It proposes recommendations within the scope of PNE 2011-2020; currently awaiting governmental approval³.

1 World Bank (2010).

2 Programme for International Student Assessment - testing for reading, mathematics and literacy skills.

3 The PNE 2011-2020 is a Bill of Law. It needs to be approved by the Chamber of Deputies, The Federal Senate and by the President, respectively, in order to become a national law. At the moment this educational bill is in transit at the Chamber of Deputies.

The Education Development Plan launched by the Ministry of Education in 2007 has driven the implementation of a number of programmes to enhance the quality of education, among them a *digital inclusion programme* whose aims include efforts to install computers and multimedia labs in all public schools⁴, and the *production of multimedia digital content* aimed at supporting schools and students through *Portal do Professor*. This study identifies that the objective of most existing government-supported open digital content repositories has been to increase availability of digital content to teachers in the basic education system from a late-nineties non-existence of an OER movement in Brazil. The PDE action plan involved an attempt to release content with some level of permission whereby users would not be infringing copyright. These digital-content repositories did not bear the name of open educational resources (OER), and licenses such as Creative Commons⁵ had not yet been released. During the following decade, the OER movement became more established internationally leading to some of the government-funded digital-content repositories encouraging the increased use of open licenses. As a result, today most Brazilian repositories have a blend of *copyrighted materials with permission to use by the author or materials fully licensed under Creative Commons*.

Seven out of the prospective twenty goals of PNE 2011-2020 have been selected for consideration, along with the proposed strategies which seem most OER relevant. For each goal and strategy, a comment is provided on how OER could contribute to their achievement. In summary, it is proposed that OER initiatives have the potential to:

- Enable the increased number of extra-curricular activities for basic education using ICTs;
- Serve as a mechanism to reduce dropout rates from the education system by enabling the use of both tutored and self-study OER programmes;
- Offer teachers opportunities for career development activities by engaging in OER development and reuse;
- Foster the creation of collaborative textbooks for public use;

4 Official records point to the acquisition of more than 100,000 computer labs between 1997-2004 (ICT Education 2010, p. 221) (<http://www.cetic.br/tic/educacao/2010/index.htm>). Data from the Brazilian Internet Steering Committee (ICT Education 2010) suggests that each public school has on average 23 computers, but only about 18 of those are actually installed and in use due to maintenance reasons. There is an average of 800 students per public school and broadband is present in 87% of schools which have an Internet connection (<http://www.cetic.br/tic/educacao/2010/index.htm>).

5 "Creative Commons licenses are several copyright licenses that allow the distribution of copyrighted works. The licenses differ by several combinations that condition the terms of distribution. They were initially released on December 16, 2002 by Creative Commons, a U.S. non-profit corporation founded in 2001" (http://en.wikipedia.org/wiki/Creative_Commons_licenses).

- Prompting the collaborative production of pedagogical and training materials for both teachers and students;
- Widening participation in higher education.

This study briefly outlines the structure of the Brazilian education system and suggests how OER could be beneficial within the context of the national priorities for education. It also includes presentation of relevant examples of international collaboration in OER.

The overview of OER is a product of a comprehensive but non-exhaustive desktop research in which most of the government and non-government open-digital-content and OER initiatives as well as the motivations underpinning them are covered.

To conclude, a number of recommendations for the adoption of OER at basic and higher education levels applicable to both the private and public education are made. The importance and role of a number of topics related to OER development and delivery, such as technology, pedagogy, copyright, policy and quality control, are summarized. If these recommendations are followed, OER has the potential to facilitate extensive innovation across the Brazilian educational system lifting the standard of learning opportunities for the country's youth and future workforce.



I The Concept of Open
Educational Resources

UNESCO's publication *Open Educational Resources, Conversations in Cyberspace* (D'Antoni, 2009) presents a useful historic perspective of the origins of Open Educational Resources, which is here briefly discussed. OER are very often referred to as *learning objects* or *open content*. 'Learning object' was a term coined by Wayne Hodgins in 1994, and defined as a small instructional component that can be reused in different learning contexts (Wiley, 2000). Following the principles of the FOSS (Free and Open Source Software) movement, Wiley coined the term 'open content' in 1998 to advance the idea of educational content being used in different contexts openly, by different teachers and learners and traveling through different contexts. Two major initiatives in 2001 marked the development of the OER movement: the founding of the Creative Commons (www.creativecommons.org) and the OpenCourseWare Consortium (<http://www.ocwconsortium.org/>). The first enables copyright holders to choose the rights they wish to waive, enabling users of educational content to freely copy, adapt, translate and share resources. The latter consists of a number of educational institutions worldwide which gather together in a consortium with the intention of fostering the OER movement by producing content and advising on policies, promotion and research.

The term 'Open Educational Resources' was first coined at the UNESCO *Forum on the Impact of Open CourseWare for Higher Education in Developing Countries*, hosted at Massachusetts Institute of Technology, MIT, in 2002. The definition of OER used in this review is the one accepted by UNESCO, as

[...] teaching, learning and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or re-purposing by others.

This means that any other educational material that is available online for free but that does not hold an open license is not considered an OER. Butcher (2011:34) argues:

[...] the key differentiator between an OER and any other educational resource is its license. Thus, and OER is simply an educational resource that incorporates a license that facilitates reuse – and potentially adaptation – without first requesting permission from the copyright holder.

In this sense, this review shows that a number of open-digital-content initiatives in Brazil are not yet full OER experiences. Some of them are going towards this way, but the educational materials are still lacking appropriate licensing.

Still in terms of the OER definition, the term has been translated into Portuguese in 2006 as *Recursos Educacionais Abertos* (REA), and was used in the context of widening participation in higher education and increasing access to knowledge via informal distance education.

I believe we are going really fast towards a society in which the formal and conventional educational system, attached to old fashioned models of teaching and learning, will gradually be substituted by an informal, adaptable and flexible one. This will be serving the interests of the individuals who wish to learn. With OER making available nearly all essential modern knowledge, in textual, visual and sound formats, informal education will tend to be bigger than the old formal and conventional system.

(Litto, 2006)⁶

The term REA was introduced as a result of two projects supported by the William and Flora Hewlett Foundation: The MIT OpenCourseWare (<http://ocw.mit.edu>), of the University of Massachusetts in the US and the OpenLearn (the Open University of the United Kingdom) which had launched an OER repository providing access to 5% of all the content produced by the university free of charge, entirely online, licensed under Creative Commons and supported by web 2.0 technologies.

Open Educational Resources represent another possibility for the democratic access to free higher education. By means of technologies such as the Internet, wikis and virtual learning environments it is already possible to make educational resources available on the Web, accompanied by all the necessary resources for their pedagogical use; also providing the possibility to adapt and translate these resources, so that they can be reused in a number of educational contexts [...] In Brazil, the creation and availability of open educational resources in large scale is still to come. With the expansion of the higher education system at distance by means of the Universidade Aberta do Brasil (UAB), there is an increasing possibility that open educational resources are created by the federal universities which belong to the UAB system [...]

(Santos, 2006:47)⁷

Despite appearing in the literature since 2006 and the increasing actions to raise awareness of OER by, in the most part, international collaborations, such as those described in section 4 of this review, the Open Educational Resources movement still has a long way to go in Brazil. In order for OER to make a significant impact on widening participation in education, not only in large cities but also in more remote populations, it is necessary to secure both the private and public education sectors (at the basic and higher education levels) are involved in the implementation of specific national policies relevant to OER. Most government initiatives that support the production and sharing of digital resources were not created with the purpose to be OER initiatives, in the sense that they would go by the name

6 <http://sites.google.com/site/livreaprender/textos/a-nova-ecologia-do-conhecimento-contedo-aberto-aprendizagem-e-desenvolvimento>

7 <http://aisantos.wordpress.com/2011/06/10/recursos-educacionais-abertosnovas-perspectivas-para-a-inclusao-educacional-via-ead/>

of OER or would be licensed with licenses such as Creative Commons or the like. Most of them have been established as strategies of the Brazilian Plan for the Development of Education (PDE), which is a document that establishes the action plan of the PNE. These strategies were targeting, amongst other priorities, the production of resources and the access to digital content for both teachers and learners in the country, with open digital content initiatives (e.g. *Teacher's Portal*⁸ (*Portal do Professor*), *International Database of Educational Resources*⁹ (*Banco Internacional de Objetos Educacionais*)). Initiatives such as RIVED¹⁰ (Interactive Virtual Network of Education – *Rede Interativa Virtual de Educação*), were set up as a network of virtual learning objects rather than of open educational resources.

The participation of Brazil at RIVED started as early as 1999, at a time when the concept of open educational resources had not yet been developed; rather focus was on the concept of *learning objects* that was popular at the time. Since RIVED was born as a project based on the production of virtual learning objects, Brazil seemed at that time to be aligned with the educational perspectives of the time.

Since there is no *license* attached to RIVED's resources, but rather an expressed permission to use the resources free of charge, the question is the extent to which the 'definition' of OER allows us to consider RIVED's resources as such. If it is mandatory that OER have a license attached to them, independently of how those resources have been used or made available, then it seems that RIVED is an interesting initiative of free and open, unlicensed digital content, but not OER. If however, the 'purpose' of the initiative is taken into consideration, then RIVED, although not an intended OER project, could fit into this category.

RIVED is an example of the general situation of most open content repositories in Brazil. These initiatives are in line with government plans to make digital multimedia content available for teachers to use in classrooms in order to partially make up for the insufficiency of teaching resources in the country, but do not seem to be established as open educational resources initiatives as such.

8 <http://portaldoprofessor.mec.gov.br/index.html>

9 <http://objetoseducacionais2.mec.gov.br/>

10 <http://rived.mec.gov.br/>



2 The Brazilian Educational Landscape and OER – Perspectives and Challenges

2.1 The Brazilian Educational System

Education in Brazil is guaranteed to all citizens by the federal government until the end of the period described as ‘basic education’, which corresponds to the following: *early childhood education* (young children up until 5 year-olds); *fundamental education* (a nine-year cycle divided into two stages: grades 1st-5th (6-10 year olds) and 6th-9th (11-14 year olds) and *ensino médio* (secondary education) which is intended for students aged 15-17.

Table I. Basic Education System in Brazil

Early childhood	Age
Nursery	0 to 3
Preschool	4 to 5
Fundamental Education	Age
<i>Initial years – 1st year to 5th year</i>	
1st	6
2nd	7
3rd	8
4th	9
5th	10
<i>Final years – 6th year to 9th year</i>	
6th	11
7th	12
8th	13
9th	14
Secondary Education (Ensino Médio)	Age
1st	15
2nd	16
3rd	17

There are private schools in Brazil which offer basic education, and it is optional for the parents to register their children in either a public (free of charge, government-supported) or private (fee-based) school.

Higher education in Brazil is also provided by the government but on a much smaller scale as it is not compulsory, and entry can be highly competitive. The private education sector dominates the provision

of higher education in Brazil, catering for over 80% of students¹¹, despite the increasing efforts of the public system to increase its reach nationally, for example with the chartering of the Open University of Brazil (*Sistema Universidade Aberta do Brasil*, UAB) in 2006¹².

The Open University of Brazil was created to start filling a major gap in the higher education (HE) sector. Average access to HE in Brazil in 2005 was 10.5% of the population aged 18, compared to 40% in Argentina and 20.6% in Chile (Mota, Filho and Cassiano, 2006:15). In addition, the 2005 School Census¹³ has shown that out of 2.9 million teachers in Brazil from nursery to secondary education, 1.2 million did not have a university degree. This is one of the reasons why the first main goal of the UAB was to increase access to higher education in Brazil *mostly for teachers*, in order to increase the quality of education:

The level of training of teachers has a strong relationship with the achievement of the students in the INEP/SAEB¹⁴ testing (and of course also the socio-economic conditions of the student). Face this situation, it seems natural that we design public policies that aim to increase the training to higher education level – with quality – to all teachers who are working or will work with early childhood education, fundamental or secondary education.

(Mota, Chaves Filho and Cassiano, 2006:19)

The Brazilian Open University is mostly based on the distance-education, drawing on the affordances of ICTs to widen the reach of HE in the country, free of charge or at minimal cost system. The current Minister of Education, Fernando Haddad, refers to this process as “*interiorização da educação superior*”, meaning the UAB has been helping to bring HE in Brazil further inland, far away from large cities, to places where private HE institutions are fewer.

In addition to this accessibility objective, the main aim of the UAB has been to encourage investment in research and continuous professional development programs by means of distance education using ICTs to target the lack of graduate teachers in Brazil:

[...] Distance education as a modality is sustained by the ICTs [...] and in this sense, the adoption of distance education will present a positive impact in supplying the demand for the training of more than a million teachers for basic education.

(Secretary Ronaldo Mota, 2009:300)

11 Data from BNDES setorial 30 (2009), p. 103-156 (based on INEP - *Instituto Nacional de Pesquisa Educacional*).

12 UAB was made official on 8th June 2006 by decree no. 5,800.

13 Data from INEP School Census (2005) – National Institute for Educational Research – *Instituto Nacional de Pesquisa Educacional*.

14 Author’s note: SAEB: National System of Evaluation of Basic Education (*Sistema Nacional de Avaliação da Educação Básica*).

2.2 The National Education Plan (PNE) and the Educational Development Plan (PDE)

This review is being written in a transitional period, from a PNE which was valid from 2001-2010¹⁵, to a new one which is under assessment by the Commission of Education and Culture (*Comissão de Educação e Cultura*). As it is, this new PNE is a Bill¹⁶ (Projeto de Lei 8.035/2010), which can still be amended until its final approval. Nevertheless, even in its preliminary state, it presents a way of thinking that characterises a *systemic* view of education, a view which has been advocated by the Ministry of Education as a way forward to tackle a number of failures in the Brazilian educational system which has persisted in the past decades, such as the prioritization of certain educational areas in detriment of others:

The current PNE has a threefold structure based on “diagnosis-governance-goals”, replicated in the various phases and modalities of the education system. This normative structure has a double effect: on one hand it accentuates a fragmented and segmented view of education, as if, for example, reaching the goals for basic education could be possible without the expansion of higher education, which in turn cannot be achieved without widening the capacity of and reformulating the secondary education, and so on and so forth. On the other hand [...] the multiplication of goals for each educational stage or modality comes unaccompanied of the necessary strategies for the achievement of these goals.

(Minister Fernando Haddad, Bill for the National Education Plan 2011-2020:65)

2.2.I Bill for the new National Education Plan (PNE) – 2011-2020

The PNE¹⁷ presents 20 goals for national education, as proposed by the Commission for Education and Culture of the *Câmara dos Deputados*¹⁸. Each goal is to be achieved using a number of strategies, all originally written at a very general level, in order to be further developed and detailed as part of the PDE. Seven out of the 20 goals are presented in this section along with the strategies considered the most relevant to the OER context. These goals and strategies provide an overview of the systemic approach to the development of national education for the next decade in Brazil, with a number of priorities to foster the simultaneous development of interdependent areas, such as early childhood education, basic education, and higher education:

15 PNE 2011-2010 approved by the National Congress, Law 10.127 passed on 9th January 2001. This ten-year period was called The Education Decade (*Década da Educação*).

16 Projeto de Lei do Plano Nacional de Educação PNE – 2011/2020 - Comissão de Educação e Cultura, Brasília, Câmara dos Deputados, 2011, Edições Câmara, Série ação parlamentar, número 436).

17 This new PNE 2011-2020 is a Bill of Law soon to be approved and is intended to substitute the PNE valid until 2010.

18 Chamber of Deputies, the lower house of Brazil’s national parliament.

For the new PNE [...] we have opted for the adoption of a radically different strategy: the goals have been reduced to twenty and are presented accompanied by strategies that are indispensable for their reach. [...] The intention is to plan for the next decade [...] the conception of a systemic view of education, which encompasses all the stages and modalities of education in an integrated manner, so that they reciprocally reinforce each other and provoke a vicious cycle of investment in education.

(Minister Fernando Haddad, National Education Plan (Bill) 2011-2020:67)

The goals and strategies selected have been chosen for their close fit with the OER context, and in which there seems to be scope for OER initiatives to contribute towards these national targets:

Goal # 2: To universalize *Fundamental Education* to nine years for all 6-14 year-olds.

Strategy 2.11: To universalize access to high-speed broadband and to increase the number of computers per student in the classrooms of the public **basic education system**, promoting the pedagogical use of information and communication technologies.

Access to computers and broadband in all schools will enable the use of OER in the classrooms and the experimentation with new pedagogical practices using OER. So far, the use of ICTs in the schools is encouraged by the government, but seems to be concentrated in school labs rather than in the classrooms.

Goal # 3: To universalize access to schooling for all 15-17 year-olds by 2016, and ensure that 85% of students in this age range are enrolled in secondary education by 2020.

Strategy 3.2: To maintain and expand programs and actions to correct the flow of students in Fundamental Education by means of the individual monitoring of the progress of underachievers; and by adopting extra-curricular classes, progress monitoring and recuperation in order to promote the repositioning of students in the educational system in a way that is compatible with their age.

OER repositories can potentially help underachievers. Extra-curricular content, activities and games could support retention and progression of students in fundamental education. There is potential for OER to be used with tutoring and in self-study programs.

Goal #7: To achieve the following national marks for the IDEB¹⁹ (Index of Basic Education Development):

IDEB	2011	2013	2015	2017	2019	2021
Initial years of Fundamental Education	4.6	4.9	5.2	5.5	5.7	6.0
Final years of Fundamental Education	3.9	4.4	4.7	5.0	5.2	5.5
Secondary Education	3.7	3.9	4.3	4.7	5.0	5.2

Strategy 7.1: To formalize and put into practice the action plans which relate to the quality goals established for the public basic education and the strategies for technical and financial support related to improving educational management, teacher training, professional services and the development of pedagogical resources [...]

Strategy 7.6: To select, certify and disseminate educational technologies for fundamental and secondary education, ensuring a diversity of methods and pedagogical approaches, as well as the monitoring of the results in the educational system in which they are applied.

Strategy 7.9: To expand programs and actions aimed at supporting the student at all stages of the basic education system, by means of supplementary programs of extra educational resources, transportation, school meals and health assistance.

Strategy 7.11: To provide equipment and digital technological resources for pedagogical use in the school environment and at all schools providing fundamental and secondary education.

OER can be used in all these strategies: 7.1 for teaching training and the development of pedagogical resources, in the sense that it can be part of a continuous development plan for career teachers; 7.6 OER potentialise the sharing of best practices, and with it the experimentation with new pedagogical approaches; 7.9 OER repositories can offer extra-curricular resources for self-study and for tutorials at reduced costs in comparison to printed materials; 7.11 OER as digital technological resources can be offered in a variety of formats, to suit both fundamental and secondary education.

¹⁹ IDEB – Índice de Desenvolvimento da Educação Básica.

Goal #11: To double the registrations of professional technical education at secondary level, ensuring the quality of the courses offered.

Strategy 11.3: To foster the provision of professional education at secondary level in the distance-education mode, with the aim of increasing the provision of such courses and to democratize access to free-of-charge, public professional education.

The distance education mode used to help widening access to professional technical secondary education in Brazil enables OER to play an important role if supported by the local governments. The sharing of resources created to qualify learners in specific professions can mean the saving of public resources and the avoidance of duplication of efforts related to creating learning materials.

Goal #14: To gradually raise the number of registrations for *stricto sensu*²⁰ post-graduate degrees, in order to achieve the graduation of 60,000 Masters and 25,000 PhDs yearly.

By encouraging the availability of theses, dissertations and research papers with appropriate open licenses, universities can facilitate access to research, thus contributing to the training of postgraduate professionals.

Goal #15: To ensure that all basic-education teachers have a specific graduate degree in the area in which they teach, obtained in a collaborative effort between the Union, the States, the Federal District and the Municipalities.

Significant capacity building work has been done by the Open University of Brazil (UAB). An OER-based curriculum has the potential to help the consortium of universities involved in UAB to build and share training resources for teachers freely, at the same time encouraging the culture of repurposing and reusing content in education.

²⁰ These normally are *research degrees* in Brazil.

Goal #16: To train 50% of teachers in the basic-education system at a post-graduate level (*lato sensu*²¹ and *stricto sensu*) in order to ensure the continuous professional development of all teachers in their area of work.

Strategy 16.3: To expand the creation of programmes that make textbooks, literature books and dictionaries available to teachers at public schools in the basic-education system.

Strategy 16.4: To amplify and consolidate electronic portals in order to assist teachers in the preparation of classes, making available teacher's guides and other, supplementary materials.

Strategies 16.3 and 16.4 have the potential to contribute directly to the expansion of the OER movement in Brazil. The availability of textbooks as OER and the investments in the sustainable development of OER repositories aiming at the production and sharing of educational resources are actions aligned with the proposition of these strategies.

This section has summarized the main goals for national education for the next decade as it stands, and the potential of OER to help achieve those goals. In summary, OER can help bring about:

- Increased extra-curricular activities for basic and secondary education using ICTs;
- The leveling of the flow of students through the education system by encouraging the use of both tutored and self-study OER programs;
- Opportunities for career-development activities for teachers;
- The creation of collaborative textbooks for public access;
- The collaborative production of pedagogical and training materials for both teachers and students;
- Widening participation in higher education.

21 These are graduate degrees at specialization levels, equivalent to *diplomas* in the British education system.



3 Cases of International
Collaboration in OER

International collaborations in OER can play a very important role in the dissemination of OER best practices. Below are some examples of collaborations supported by international projects which helped a number of spin-off initiatives.

3.I Open University UK (OpenLearn and OLnet)

The Open University UK, by means of its projects OpenLearn²² and OLnet²³, has supported a number of awareness raising and collaboration actions regarding OER in Brazil. These include participation in international conferences²⁴, organization of OER workshops²⁵, research seminars²⁶ and research studies such as the ones cited in the subsections below.

3.I.I UnisulVirtual and OpenLearn/OLnet

The case of UnisulVirtual is a successful experience regarding OER reuse, prompting a dynamic collaboration between the higher-education institutions involved which started in 2007. Through an active collaboration cycle involving mentoring and supporting OER champions at UnisulVirtual (McAndrew, P. et al., 2009 : 54-55), this collaboration resulted in a number of outcomes: the translation of OpenLearn resources into Portuguese, the publication of UnisulVirtual's educational resources at the OpenLearn portal both in Portuguese and English, and the establishment of new modes of use of OER, which involved the community engagement in OER-based courses during the winter holidays (Santos, A.I. et al., 2010).

UnisulVirtual started this collaboration as an institutional user of the OpenLearn content, interested in finding courses at the portal which would be suitable for their cohort of students. After consultation with their lecturers, a number of courses have been identified and translated into Portuguese (see Figure 1) and published back at the OpenLearn website now adapted and translated. This is an interesting example of cross-national reuse and sharing of open educational resources. The students of UnisulVirtual were directed to these resources as extra materials to support their learning via a button linking their own virtual learning environment straight onto UnisulVirtual's collaboration page in the

22 www.open.ac.uk/openlearn

23 Open Learning Network – project derived from OpenLearn – <http://olnet.org>

24 The Open University, through its network of Brazilian researchers, supported OER promotion in various events from 2006-2011 in different states of Brazil, both on-site and at a distance. To cite a couple 1) Projeto Oficinas de Educação Aberta e a Distância – SEED/MEC and UNIDERP (2006) <http://www.abed.org.br/oficina2006/> and 2) Open Educational Resources for Virtual Learning: what works and what doesn't. GUIDE International Seminar on Virtual Higher Education (2010) http://www.unisulvirtual.com.br/GUIDE/programacao_english.html

25 Workshop: Potentialising the Use of Open Educational Resources in the Classroom – II Colóquio Regional: Educação a Distância, Cultura e Produção de Subjetividade (2010) - Universidade Federal de Juiz de Fora <http://aisantos.wordpress.com/2010/10/22/utilizando-recursos-educacionais-abertos-mural-de-ideias/>

26 International Research Seminar in Distance Education - <http://ead.folhadirigida.com.br/?p=3640>

Please [sign in](#) to tag your favourite units

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Send link ?

Permalink:
<http://labspace.open.ac.uk/UV>

Welcome to the Collaborations Area of UnisuVirtual at OpenLearn!

UnisuVirtual is the distance education campus of **UNISUL**, the University of Southern Santa Catarina, Brazil. It has been collaborating with The Open University in the OpenLearn project since March 2007. UnisuVirtual offers a range of undergraduate and graduate programmes and specialized online training programs for students in general as well as for various governmental and non-governmental Brazilian organizations.

UnisuVirtual uses OpenLearn Open Educational Resources (OER) in its courses and publishes some of its own content here in the LabSpace, enriching the diversity of materials in OpenLearn and enabling it to reach a larger Portuguese-speaking community. Additionally, UnisuVirtual materials have also been translated into English and made available to the English-speaking world, so that they can be remixed, re-used, localized, transformed... shared!

We firmly believe in the relevance of Open Educational Resources as a means of lessening educational inequalities throughout the world and of making education as far-reaching as possible.

Todos os materiais da Unisu no OpenLearn
All Unisu materials on OpenLearn

Business and Management:

- [UNISUL | Compreendendo a gestão \(PUB_25_2.0\)](#)
- [UNISUL | Curva ABC: uma ferramenta para administração de empresas \(PUB_185_1.0\)](#)
- [UNISUL | O conceito de inovação \(PUB_192_1.0\)](#)

IT and Computing:

- [UNISUL | Análise de Redes Sociais \(PUB_190_1.0\)](#)
- [UNISUL | Busca de informações na Web](#)
- [UNISUL | Criação da interface de usuário: texto, cores, imagens, imagens em movimento e sons \(PUB_191_1.0\)](#)
- [UNISUL | Informações na Web \(T180_5_4.0\)](#)
- [UNISUL | Social Network Analysis \(PUB_208_1.0\)](#)
- [UNISUL | Word Básico PUB_318_1.0](#)
- [UNISUL | Power Point \(PUB_319_1.0\)](#)
- [UNISUL | Iniciação ao Excel \(PUB_320_1.0\)](#)

OpenLearners also studied:

- [UNISUL](#)
- [Compreendendo as novas mídias](#)
- [COLEARN - Comunidade de Pesquisa sobre Aprendizagem Colaborativa e Tecnologias](#)
- [UNISUL Informações na Web](#)

Other sites
[See other resources](#)

Figure 1. UnisuVirtual & OpenLearn collaboration homepage

OpenLearn. Moreover, UnisuVirtual also identified some of their own courses which they considered interesting to be translated into English to be shared with the world. These courses have been published at OpenLearn in their original format in Portuguese and in their translated versions in English. At this point, the user institution also became a provider of OER, by sharing the same technological platform through collaboration, the LabSpace²⁷ of the OpenLearn portal.

These experiences of content publishing and translation at OpenLearn were part of the OER action research studies carried out by the OpenLearn research team (McAndrew et al., 2009).

²⁷ Nowadays the LabSpace is independent of OpenLearn and is part of the SCORE Project - Support Centre for Open Educational Resources in Education <http://www8.open.ac.uk/score/>

3.I.2 Fluminense Federal University and OpenLearn/OLnet

After a visit to the Open University UK, academics of the Fluminense Federal University (Universidade Federal Fluminense – UFF) decided to start an informal OER collaboration with the OLnet research team in the UK. The aim was to experience the use of OER to teach courses in formal education. UFF selected a course from the OpenLearn LabSpace which corresponded to the curriculum of the one of the graduate courses, in this experience, the Business and Management undergraduate course, which had about 40 students registered. The chosen courses at OpenLearn were called *Entrepreneurial Behaviour* and *An Introduction to Business Cultures*. The students studied the OER courses in English at the OpenLearn platform, with no adaptation to Portuguese, exactly as they were presented at the OpenLearn portal. In Brazil, however, English is a foreign language, not a second language. This means that although it is part of the curriculum in the basic education system, it is not necessarily true that students have mastered the language by the end of their formal education. Studying a course in English as they were doing, even if it means only reading the content in English, can be a very challenging task for some students. Nevertheless, they have accepted the challenge and were assessed by means of a quiz in Portuguese, carried out in the virtual learning environment of the course.

The experience of studying using OER, and in a foreign language, was a challenging experience for the students as the content was originally designed for the European context, with positive and negative points. For example, the *cases* in the course material were not adequate for the Brazilian context, and this was perceived as a negative point. The students and teachers had to work together to adapt the examples to the Brazilian reality, and for some students, having foreign cases for comparison, was perceived as a positive experience. Despite the different points of view, the students got very good marks at the assessment overall, and during a focus group, in which they analysed the experience, they emphasized the excitement of studying the same content as a student studying abroad would do. This means that there is an alignment of their curriculum with international standards, which they considered positive. Studying the curriculum in English was perceived as a positive factor for some, as it could help improve their foreign language skills, but as negative for others, who felt they had spent much longer to understand the content in foreign language.

In UFF's next experience with the OpenLearn OER, the intention is that the course should be translated into Portuguese in order to facilitate the learners' understanding of the content and to provide a different type of research data for the work in progress.

This experience has helped to examine different pedagogical perspectives on OER in teaching, and contributed to studies on cross-cultural OER use and reuse.

3.2 Open Society Foundation, USA (OER-BR Project)²⁸

The work of OER Brazil began in late 2008, supported by the Open Society Foundation. This first cycle (2008-2011) was focused on OER awareness raising, advocacy and networking with key policy makers and government representatives, and community capacity building to develop and adopt OER projects and project partnerships. The project team is formed by experts in intellectual property issues and technology for education who provide pro-bono advice and project coordination on OER.

One of the early results of the project was a policy paper published in 2009 mapping the OER situation in Brazil and published by the Berkman Center at Harvard University (Rossini, 2009), analysing the textbook market and government purchase process and setting a series of public policy recommendations that laid out the project strategies in regard to policy development and opened the doors for the project to work with the Ministry of Education and others in Brazil²⁹.

The project works through a series of alliances with policy makers, academics, consumer advocates, and institutions which want to implement and support OER projects, policies and mandates. Alliances have been formed in Brazil, Latin America and abroad to facilitate cross-pollination of OER practices and policies. The project has facilitated training of teachers in OER practices and OER partnerships, examples of which are the training of teachers and school in the use of OER platforms, such as Connexions (www.cnx.org), the participation in OER-UNESCO discussions and community and the constant support to schools and universities to join international initiatives such as the Open Course Ware Consortium. The tangible results are: two private schools have already developed projects and one has joined OCWC.

Project related initiatives were featured in national TV channels such as Globo and TV Cultura and newspapers such as *Estadão*, and in the grassroots media, newsletters, magazines and in social networks. OER Brazil has also established its own communication channels with society through mailing lists, social communities, micro blogging (@reanetbr) and blogging (www.rea.net.br), and by contributing to international forum³⁰ on OER. The objective is to develop a broad base of support to advance policy and practice adoption.

The project has organized events and workshops at national and regional levels to engage education, technology and policy experts and advance the adoption of OER in Brazil, and is represented at international OER-advocacy groups and high-level meetings with policy makers from US, Australia,

²⁸ Projeto REA-Brasil

²⁹ <http://rea.net.br/2010/08/19/audiencia-sobre-rea-no-ministerio-da-educacao/>

³⁰ e.g. <http://openeducationnews.org/>

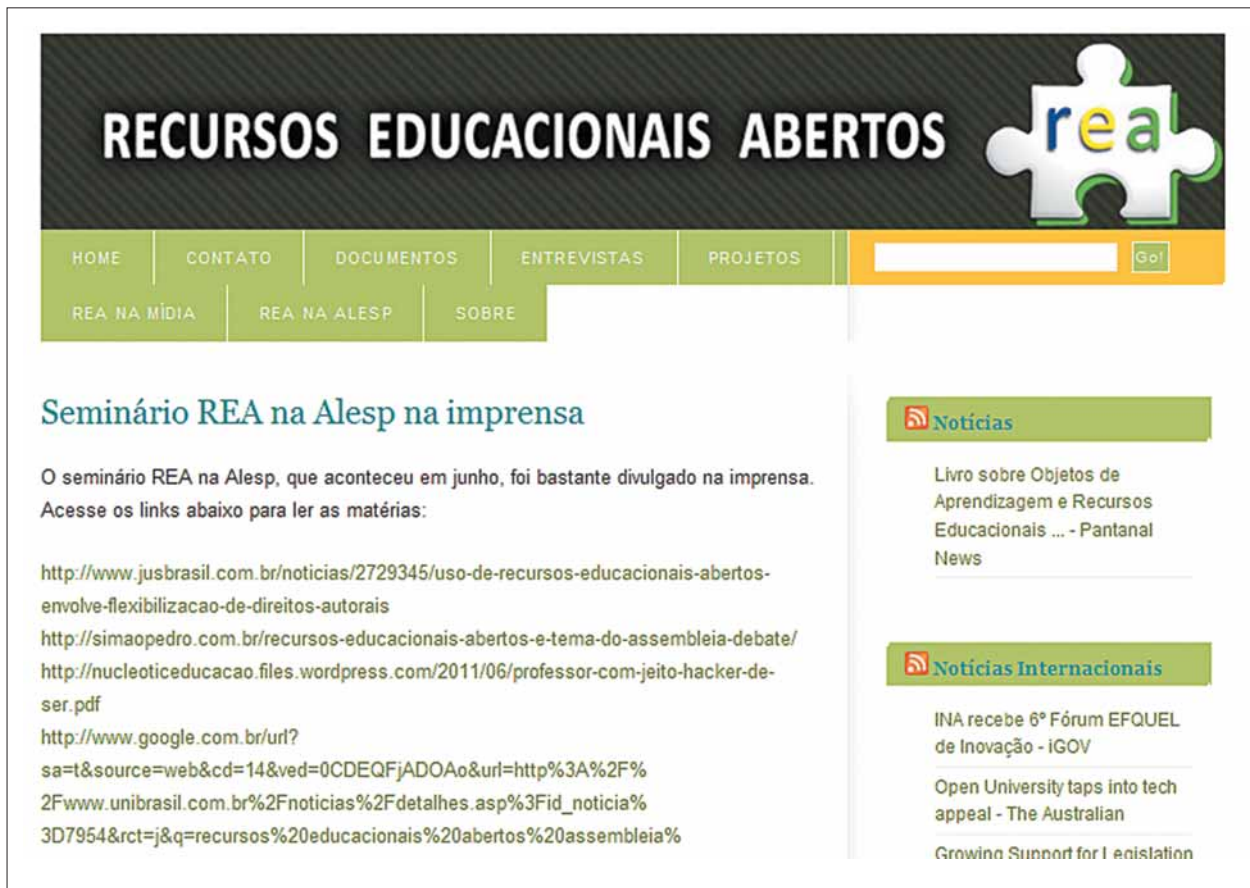


Figure 2. OER-BRAZIL blog (www.rea.net.br)

Poland, among others, as a way to collaborate in the development of policy language and strategies. The OER-Br team sits on the UNESCO expert group for OER, and works to implement the Cape Town Declaration on Open Education³¹.

In the first half of 2011 alone, legislation developed by OER-Br and its ally Paulo Teixeira was introduced in the Brazilian House of Representatives, and the Municipality of Sao Paulo adopted the use of Creative Commons copyright licenses for all their educational materials (see 5.10). Additionally, OER-Br projects have resulted in two major private schools developing OER, non-profit institutions which produce educational resources licensing educational resources openly, and built significant opportunities at the legislative level for the State of São Paulo to introduce in the next months an OER bill, which introduces the idea that publicly funded resources should be made publicly available. The bill will need to be

31 <http://www.capetowndeclaration.org/translations/portuguese-translation>

approved by the Chamber of Deputies, by the Federal Senate and by the President in order to become a national law. If approved, educational materials financed by educational secretariats and developed by public universities, for example, will be released under open licenses to be freely used. Finally, the OER-Br team develops OER collaborations with technical colleges and universities, and aims to host an international conference in 2012 for the 10th anniversary of OER.

3.3 The role of international collaborations for OER development in Brazil

The types of collaborations presented in this section have a key role in the appropriation of the international discussions of OER in the Brazilian context. International collaborations encourage the sharing of best practices and the access to a number of different pedagogical, political and technological perspectives in OER, from all involved in the process.

Moreover, they provide rich research data for the understanding of how open educational resources can be used cross-culturally, and since some Brazilian repositories have an international audience (i.e. BIOE), the international collaborations seem to be in line with these outreach efforts and are essential for the steady development of the field in the country.



4 Brazilian experiences with open-digital-content repositories and OER

This section presents both OER and open-digital-content initiatives. The latter are often repositories which do not have a full open licence (such as Creative Commons) applied to its resources, or are only partly licensed. These repositories, however, correspond to the vast majority of the government-supported projects, and its potential to become full OER initiatives should not be taken for granted. A couple of reasons arguing for the advantages of these initiatives to become OER would be : 1) content with an open licence is safe in terms of protecting the author’s copyright as the licence ensures the content remains attributed to the original author (Butcher, 2011), and 2) sharing of materials provides institutions opportunities to market their services, offer tutorials, practical sessions, individual feedback (Butcher, 2011); among other services that can generate opportunities for new business models to emerge (in the private education sector). In the public sector, OER has the potential to build capacity by providing institutions and educators access to learning resources which can be adapted thus allowing its users to develop competence in evaluating and co-producing educational materials. In addition, the sharing of resources cross-culturally is also enabled when educational platforms (or open-digital-content repositories) are set with open standards and Web 2.0 tools - a higher level of interoperability and usability is established. This encourages the exchange of OER between institutions (see section 3.1.1 – UnisuVirtual and OpenLearn collaboration case).

The list presented below is comprehensive, but not necessarily exhaustive, as there may be some recently emergent OER initiatives and others that may simply not have been identified during the research for this review.

4.I Bibvirt-LabVirt – Interactive Virtual Network of Education

Bibvirt, the Brazilian Student’s Virtual Library, was an activity of research and development of the “School of the Future”, interdisciplinary research laboratory of the University of São Paulo, which started in 1994 and made available a range of educational materials free of charge on the Internet. It was a pioneer

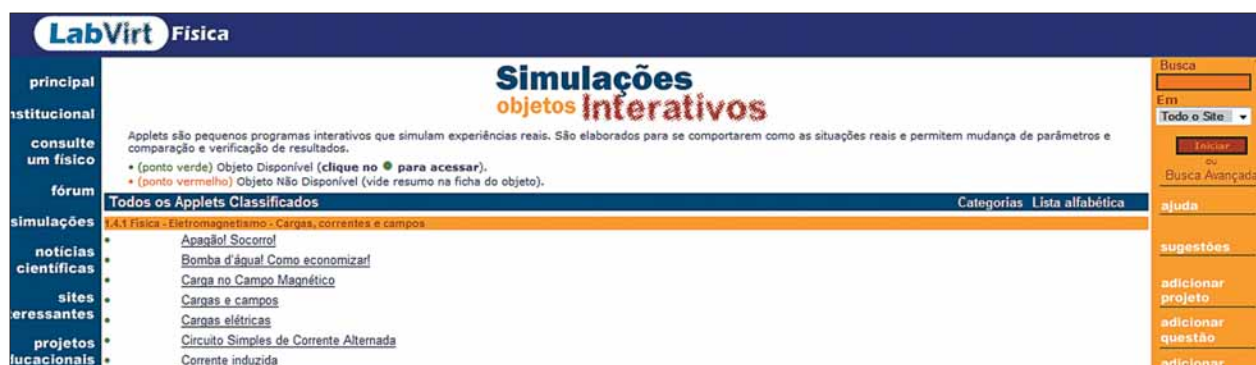


Figure 3. LabVirt homepage (<http://www.labvirt.fe.usp.br/>)

experience as a digital content repository in Brazil, and made available materials from the Fundação Roberto Marinho's Telecurso 2000 (open education on TV, similar to the OU –UK and BBC initiatives in the late 60s and 70s), the SBPC's³² archive of radio interviews with scientists, amongst other educational resources. Bibvirt project was discontinued in 2006 due to technical and financial reasons, and LabVirt came into existence.

LabVirt started at the Institute of Physics of the University of São Paulo (USP), then moved to the School of the Future (USP) and since 2007 it has been hosted by the Faculty of Education of São Paulo University (FEUSP).

LabVirt aims to improve and support students' learning by means of developing a community of schools and universities in the production and exchange of knowledge, and in the creation of a contextualized, less fragmented scientific education. It focuses on resources in the areas of physics and chemistry. LabVirt is supported by the School of the Future (University of São Paulo), Telefônica Foundation and the São Paulo State Secretariat of Education.

BibVirt and LabVirt's Copyright situation

According to information received from the founders of BibVirt at USP, the resources were published with permission to be used and some of them were in the public domain.

The copyright situation of the resources at LabVirt, however, is not clear. There is not an open license applied to the entire website, and there is inconsistency in presenting information on how each OER is licensed. There are resources which are labeled as in the public domain, and others which carry no copyright information at all.

4.2 RIVED – Interactive Virtual Network of Education³³

The project derived from a 1997 agreement between Brazil and the United States on the development of technology for pedagogical uses. The participation of Brazil in the project began in 1999, further on Peru and Venezuela joined the project. The project aimed at the production of multimedia learning objects, mostly animations and simulations. RIVED's definition of learning object is any resource that can be reused to support learning.

32 SBPC - Sociedade Brasileira para o Progresso da Ciência (Brazilian Society for Science Progress) <http://www.sbpnet.org.br/site/home/>

33 This repository was originally known as International Virtual Network of Education.



Figure 4. RIVED's main navigation page (rived.mec.gov.br)

The Brazilian project team at RIVED was based at SEED³⁴ and was responsible for the production of 120 learning objects in biology, physics and mathematics, aimed at secondary education. In 2004 the process of production of learning objects was transferred from SEED to universities, and this shift has brought to the project the use of the name Virtual Factory (*Fábrica Virtual*). With RIVED's expansion to universities new subject areas have been added to the production of content to both *fundamental* and special needs education.

RIVED's copyright situation:

There is no license attached to RIVED's resources but there is an *expressed permission* for them to be used free of charge. However, recent notice on RIVED's website states:

"Use license: the contents produced by RIVED are public and will be, gradually, licensed through a Creative Commons license. [...]"

34 SEED – Secretariat for Distance Education (*Secretaria de Educação a Distância*). At the time of writing this report SEED has been restructured and renamed to Secretariat of Regulation and Supervision (*Secretaria de Regulação e Supervisão*).

4.3 International Database of Educational Objects (BIEO)

The International Database of Educational Objects (*Banco Internacional de Objetos Educacionais* – BIEO) is a web portal of learning resources in various formats and at all educational levels, which are publicly available. As of May 2011 the database has 13,615 published objects and a further 3,068 being assessed or waiting for authorization from its authors. It has received a total of 2,122,256³⁵ visits from users in 167 countries. It was created in 2008 by the Ministry of Education in partnership with the Ministry of Science and Technology, the Latin American Network of Educational Portals (RELPE), the Organization of Ibero-American States and others. The aim of the portal is to keep and share open-access digital resources, elaborated in a variety of formats, such as images, maps, audio, videos, animations, simulations, educational software, with the higher purpose of respecting regional differences of language and culture. The BIEO is integrated with the *Teacher's Portal* of the Ministry of Education.

The screenshot shows the BIEO home page with the following elements:

- Header:** "Educação Ministério da Educação" logo, "Logar", "Portal do Professor", "TV Escola", "Domínio Público".
- Main Title:** "Banco Internacional de Objetos Educacionais" with a globe icon.
- Search:** "Busca objetos neste portal" with a search box and "Busca Avançada" link.
- Navigation:** "Banco Internacional de Objetos Educacionais: Ensino Médio".
- Grid of Educational Levels:**
 - educação infantil
 - ensino fundamental
 - ensino médio
 - educação profissional
 - educação superior
 - modalidades de ensino
- Search Bar:** "Buscar em" with a search box and "ok" and "Avançada" buttons.
- Table Headers:** "Título", "Autor", "Data", "Assunto", "Tema".
- Section: Ensino Médio [6042]**
 - Link direto: <http://objetoseducacionais2.mec.gov.br/handle/mec/33>
 - Ensino Médio logo
 - Total de recursos [6042]
- Subject List:**
 - Artes [59]
 - Biologia [836]
 - Educação Física [23]
 - Filosofia [79]
 - Física [1329]
 - Geografia [128]
 - História [200]
 - Língua Estrangeira [703]
- Footer:** <http://objetoseducacionais2.mec.gov.br/handle/mec/33/browse?type=title&so=d>
- Right Sidebar:**
 - Todo o BIEO
 - Comece aqui
 - Níveis de ensino & Tipos de recursos
 - Título dos objetos
 - Título das coleções
 - Autor
 - Assunto
 - Tema
 - Pela data de envio
 - Ajuda
 - Minha conta
 - Submissões recentes
 - + pesquisados
 - Estatísticas

Figure 5. BIEO's home page (<http://objetoseducacionais.mec.gov.br>)

35 Information available at the website <http://objetoseducacionais2.mec.gov.br/>, last accessed May 2011.

It is expected that this repository will stimulate and support the individual experiences of various countries, at the same time promoting a democratic and participatory learning experience. The aim is to foster an educational leveraging by drawing on the educational strengths of some countries to help the disadvantaged ones.

Since the repository is designed to have resources of different countries and languages, teachers worldwide will be able to access them in their own language, translate them as well as publish their own content in a collaborative process.

The resources published in this portal are available to educational policy makers, school directors and managers of educational repositories, as well as teachers in the basic, professional and higher educational systems. They are also available to producers of digital pedagogic resources, researchers and the general public.

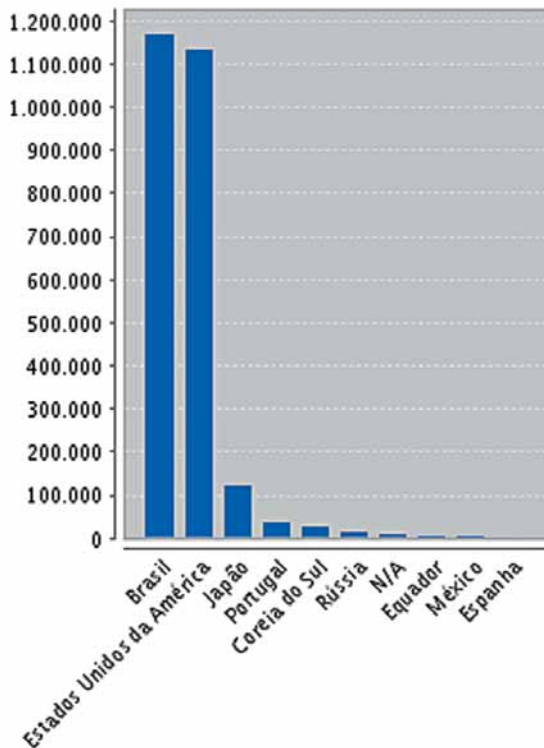


Figure 6. Visualisations by country - top 10 - May 2011

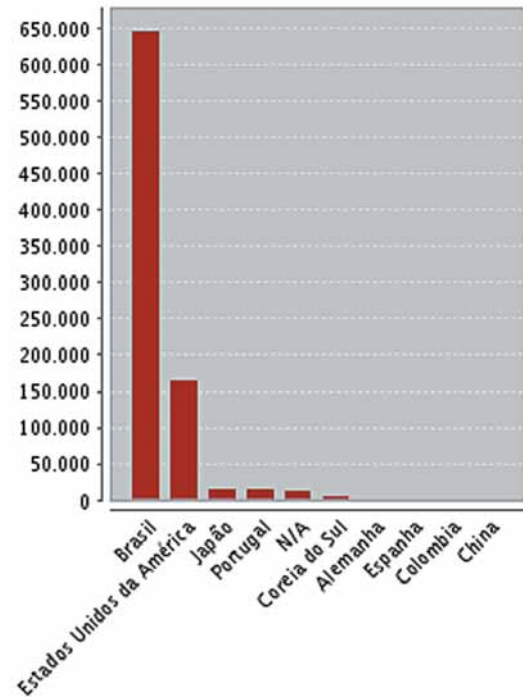


Figure 7. Downloads by country - top 10 - May 2011

BIOE's copyright situation

The content available in the portal consists of educational resources that are in the public domain or that have an appropriate license attached to them, conferred by the copyright holders, which would enable the visualization, copy, distribution and translation of the resources that show the original authorship. This is a partial license, free of charge and non-exclusive. Thus, the author will continue to use their materials as they wish, being able to negotiate them commercially, since it has not been given to the Ministry of Education (MEC) the exclusive rights to use and explore the resources handed over to MEC. The user is prohibited to use the digital resources found in the portal for commercial purposes. The use of the resources must be exclusively for educational purposes.

BIOE has tried not to violate the intellectual property rights of the authors. However, if any of the resources in the portal is found to be violating authorship, versioning, translation, exhibition or any other rights, the team at the repository must be informed so that the situation can be immediately corrected.

Examples of how the licenses may appear in the portal, attached to each individual resource:

"Resource made available for use by the author, giving the Ministry of Education the right to use it under the existing modalities, such as reproduction, translation, distribution, transfer or edition, as long as the original credit is given to the author. It is prohibited the commercial use of the resource."

"Creative Commons license allowing derivative works, copy, distribution, exhibition and performance. Commercial use not allowed."

"[Name of author] responsible for the portal [name of portal offering the resource], authorises by email the publication of this media."

"USGS-authored or produced data and information are considered to be in the U.S. public domain. When using information from USGS information products, publications, or Web sites, we ask that proper credit be given."

"It is allowed to copy, to distribute, to translate, to perform publicly and to create derivative works. Conditions of use: credit must be given to the original author, in the way specified by the author or licensee; It is forbidden to use this work for commercial purposes; for each new use or distribution, the license of use must be made clear."

"Yale University 2009. Some rights reserved. Unless otherwise indicated in the applicable Credits section of certain lecture pages, all content on this web site is licensed under a Creative Commons License. Please refer to the Credits section to determine whether third-party restrictions on the use of content apply."

The copyright situation of the works at BIOE is diverse. Often the original author retains the right to commercialize the resources and to be cited as original authors at all times. MEC sometimes holds the copyright of the resources in the portal, enabling the user to do certain things with the resources, such as to copy, distribute, translate, adapt, etc. as long as they do not violate the original author's rights. However, we have found materials in the repository in which the rights holder was still the original author (particularly in the case of videos), not MEC, and a license granting a specific type of right to use was given directly to the user of the portal. This seems to be the case for resources published in the early days of the portal, as early as 2008 and 2009. Newer resources tend to be licensed under Creative Commons. There are also some resources which do not carry neither copyright nor licensing information.

The screenshot shows a detailed description of a resource in the BIOE repository. The page is divided into several sections:

- Ranking:** Five stars and a 'View' link with a sub-link 'View / Open'.
- Statistical Summary:** A table with columns for Files, Size, Format, and Download. The file is 'internet.zip' (40.59Mb, application/zip format). A download link is provided.
- Social Networks:** Links for Twitter, Facebook, and OpenID.
- Metadata:**
 - Title:** A física e o cotidiano - Fique sabendo! - A Internet
 - Type of Resource:** Animação/simulação
 - Objective:** Saber relacionar a Física com as tecnologias que envolvem a internet e o computador, além de compreender a importância da internet no cotidiano
 - Abstract:** O Fique Sabendo A Internet demonstra o funcionamento e a utilização da internet. O software aborda a evolução da internet, os tipos de conexões e os princípios físicos responsáveis por eles, os protocolos, a presença da Física na internet e nos computadores, indispensáveis no uso da internet, dentre outros aspectos relacionados ao tema
 - Observation:** Navegador Internet: Internet Explorer 6.0, Mozilla Firefox 2.0, Opera 9 Plugins do navegador: Adobe Flash Player
 - Curriculum Component:** Ensino Médio::Física
 - Theme:** Educação Básica::Ensino Médio::Física::Equipamentos elétricos e telecomunicações
 - Author:** Projeto Condigital MEC - MCT; Grupo de Trabalho de Produção de Conteúdos Digitais Educacionais da Secretaria de Educação do Estado da Bahia
 - Language:** Portuguesa (pt)
 - Country:** Brazil (br)
 - Date:** 2011-05-11
 - Rightsholder:** MEC
 - License:** Selo Creative Commons permitido para copiar, distribuir, exibir e executar a obra; criar obras derivadas; não permitir uso comercial
 - Submitter:** Secretaria de Educação a Distância (SEED/MEC)
 - URI:** <http://objetoseducacionais2.mec.gov.br/handle/mec/17465>
- Classification:** This Educational Object appears in the following Types of resources: [Ensino Médio: Física: Animações/Simulações](#)
- Actions:** A 'Show full item record' button is located at the bottom left.
- Right Sidebar:** Contains navigation links (Authors, Subjects, Themes, By Issue Date, Help), user account options (My Account, Recent Submissions, + Searched, Statistics, Subscribe RSS), and RSS feeds (RSS 1.0, RSS 2.0).

Figure 8. BIOE resource description example

Table 2. BIOE - number of resources childhood education

Early Childhood Education	
<i>Subject</i>	<i>Number of resources</i>
Visual Arts	18
Written and spoken language	195
Mathematics	19
Movement	22
Music	0
Nature and society	375
Total	629

Table 3. BIOE - number of resources fundamental education – initial years

Fundamental Education – Initial years	
<i>Subject</i>	<i>Number of resources</i>
Literacy teaching	122
Arts	7
Natural Sciences	190
Physical Education	21
Ethics	6
Geography	53
History	16
Portuguese	209
Mathematics	192
Environment	198
Sexual education	2
Cultural plurality	89
Health	11
Total	1116

Table 4. BIOE - number of resources fundamental education – final years

Fundamental Education - Final years	
<i>Subject</i>	<i>Number of resources</i>
Arts	36
Natural sciences	321
Geography	101
History	81
Foreign languages	439
Portuguese	228
Mathematics	667
Environment	820
Sexual education	8
Cultural plurality	171
Health	46
Physical education	27
Total	2945

Table 5. BIOE - number of resources ensino médio

Secondary Education	
<i>Subject</i>	<i>Number of resources</i>
Arts	59
Biology	836
Physical education	23
Phylosophy	79
Physics	1329
Geography	128
History	200
Foreign languages	703
Portuguese	428
Literature	393
Mathematics	1030
Chemistry	665
Sociology	169
Total	6042

Table 6. BIOE - number of resources professional education

Professional Education	
<i>Subject</i>	<i>Number of resources</i>
Environment, Health and Safety	60
School support	8
Industrial processes and control	19
Hospitality and Leisure	1
Business and Management	4
Information and Communication	1
Infra-structure	0
Food production	31
Cultural production and design	0
Industrial production	0
Material resources	22
Total	146

Table 7. BIOE - number of resources higher education (new structure)

Higher Education (New Structure)	
<i>Subject</i>	<i>Number of resources</i>
Rural Sciences	928
Biological Sciences	1181
Health Sciences	382
Hard and Earth Sciences	2309
Human Sciences	717
Applied Social Sciences	141
Engineering	124
Linguistics, Languages and Arts	706
Multidisciplinary	51
Total	6539

Table 8. BIOE - number of resources teaching modalities

Teaching Modalities	
<i>Modality</i>	<i>Number of resources</i>
Youth and Adults' Education (EJA - Educação de Jovens e Adultos)	290
Indigenous Education (Educação Indígena)	9
Total	299

4.4 Folhas Project (Projeto Folhas)³⁶

Projeto Folhas was an initiative of the State Secretariat for Education of Paraná. It started in 2003 and its aim was to encourage the continued training of teachers by means of the collaborative production of teaching materials in the format of *folhas* (pages). This began in the secondary-education classroom with a kind of problem-based approach in which a theme was chosen to be discussed, followed by the support of an underpinning theoretical approach to the problem, bringing an interdisciplinary perspective to the discussion. As a result of this collaboration in class, the teacher produced the learning material and asked other teachers to validate the content. After the validation process, the content produced was submitted to the *Folhas* system, and this material would go through another two stages of validation: one by the Educational Regional Nucleus (NRE) and one by the Secretariat of Education. Once the material had been validated, it was officially published in a portal called *Dia-a-Dia Educação* (*Day-by-Day Educational Portal*) to be used by teachers.

The innovative aspect of the Folhas Project was the continuous process of training of teachers, by means of the collaborative production of course materials, involving learners and the academic community of various disciplines.

One of the results of the Folhas Project³⁷ is the *Public Textbook* programme. Produced by teachers of public schools in Paraná state, it is directed at learners and teachers in secondary education. Paraná produces and distributes textbooks free of charge, encompassing all the subject areas of secondary education. More than 450,000 students per year benefit from the programme³⁸.

³⁶ www.diaadiaeducacao.pr.gov.br

³⁷ As of writing this review (May 2011) we have been informed that due to changes in the current government of Paraná state, the *Folhas Project* is not receiving any further funding and has stopped its activities.

³⁸ For a review of the situation of public textbooks in Brazil, see Rossini, 2009 : 48-56.

Dia-a-dia Educação
Portal Educacional do Estado do Paraná

Projeto Folhas

P R O J E T O

folhas

O que é o Projeto Folhas?

O Projeto Folhas é um projeto de Formação Continuada que oportuniza ao profissional da educação a reflexão sobre sua concepção de ciência, conhecimento e disciplina, que influencia a prática docente.

O Projeto Folhas integra o projeto de formação continuada e valorização dos profissionais da Educação da Rede Estadual do Paraná, instituído pelo Plano Estadual de Desenvolvimento Educacional.

O Folhas, nesta dimensão formativa, é a produção colaborativa, pelos profissionais da educação, de textos de conteúdos pedagógicos que constituirão material didático para os alunos e apoio ao trabalho docente.

- ▶ Acesse as orientações
- ▶ Consulte os Folhas Publicados
- ▶ Quem são os responsáveis?
- ▶ Inscrições Folhas
- ▶ Livro Didático Público
- ▶ Acompanhe sua inscrição
- ▶ Fale Conosco

Copyright © 2003 - Portal Educacional do Estado do Paraná
Secretaria de Estado da Educação do Paraná
Av. Água Verde, 2140 - Água Verde - CEP 80240-900 Curitiba-PR - Fone: (41) 3340-1500
Desenvolvido pela Celepar

SOFTWARE LIVRE PARANÁ

Figure 9. Folhas Project homepage

The books are divided into twelve volumes, consisting of Portuguese, Literature, Mathematics, History, Philosophy, Chemistry, Biology, Sociology, Physics, Geography, Arts, Foreign Languages (Spanish and English) and Physical Education.

The full content of the books is available in the educational portal of the Paraná State Government (www.diadiaeducacao.pr.gov.br).

Folhas Project - Public Textbook copyright situation

The books are published as *public*, and it is stated that the total or partial reproduction of the works is permitted as long as the original authors are cited.

4.5 UNICAMP OpenCourseware

UNICAMP OpenCourseware is a portal launched in 2011 with the aim of hosting graduate educational content in digital format. The content originates from the academic production of the lecturers of the university, and is available to the general public to be accessed free of charge. It aims to cover all subject areas and was inspired by MIT's OpenCourseware.

The content is published in PDF format, and to date there has been content published in subject areas such as humanities, health and biological sciences, technology, geosciences and engineering. It does not offer certificates or any type of study support to the users.

UNICAMP OpenCourseware is regulated by a *terms of use* which entitles the portal to make changes in its content at any times.



Figure 10. UNICAMP OpenCourseWare homepage (www.ocw.unicamp.br)

UNICAMP OpenCourseWare copyright³⁹ situation

The UNICAMP OpenCourseWare is licensed under *Creative Commons* and explicitly mentions Brazilian copyright law 9,610/98, which states Brazil's understanding what an author is, and what the moral rights are amongst other particularities of the law.

³⁹ Brazilian law 9.610/98 can be found at <http://www.planalto.gov.br/CCIVIL/Leis/L9610.htm>, last accessed May 2011.

4.6 Multimedia Mathematics (Matemática Multimídia)

The Mathematics Multimedia, or simply M^3 , is a collection of multimedia educational resources developed by UNICAMP with funding from FNDE (National Fund for the Development of Education), SEED (Secretariat of Distance Education), MCT (Ministry of Science and Technology) and MEC (Ministry of Education) for the teaching of mathematics to secondary education. It makes available more than 350 multimedia educational resources in the format of videos, audio, software and experiments that are available to all. The multimedia resources available at M^3 consist of the following types:

Audio

The audio programs are divided into two parts of five minutes each. They can be listened to as a group or individual activity.

Experiments

These are classroom activities that can be done in one or two classes, in which the aim is for the student to build a concept or a mathematical formulation. The experiments have a teachers' guide and also a guide with additional information for the teacher.



Matemática Multimídia

Apresentação

Matemática Multimídia, ou apenas M^3 , é uma coleção de recursos educacionais multimídia e digitais desenvolvidos pela Unicamp com financiamento do FNDE, SED, MCT e MEC para o Ensino Médio de Matemática. São mais de 350 recursos educacionais no formato de vídeos, áudios, softwares e experimentos que ficarão disponíveis gratuitamente para todos que quiserem usar.

[Equipe do projeto.](#)

Faça sua busca

Indique nos campos abaixo as características do recurso educacional que você procura: mídia (áudio, vídeo, software ou experimento), conteúdo ou nome (caso você já saiba qual o recurso educacional que quer encontrar).

Nome:

Mídia: Conteúdo:

Conheça as mídias:

Áudios

Programas de áudio divididos em duas partes de 5 minutos cada, que podem ser ouvidos em grupo ou individualmente. Eles podem fazer parte de séries que têm características distintas. As séries são: Estimativas; O que é?; Problemas e Soluções; Cultura; Matemática e Rádio. [Conheça os áudios da coleção \$M^3\$ Matemática Multimídia](#)

Experimentos

Atividades práticas instigantes que podem ser feitas em uma ou duas aulas em que se constrói algum conceito ou formalização matemática. Eles contam com um roteiro explicativo para o professor, uma folha de acompanhamento para os alunos e um guia com informações adicionais ou complementares para o professor. [Conheça os experimentos da coleção \$M^3\$ Matemática Multimídia.](#)

Figure 11. Multimedia Mathematics homepage (<http://www.m3.mat.br/>)

Software

These are interactive activities to be done at a computer with the aim of self-study, application or formalisation of mathematical concepts at a secondary education level. The software comes with a guide for the learner, and also a teachers' guide.

Videos⁴⁰

These are 10-minute audiovideo programs which can be used in the classroom to introduce concepts, but with very little mathematical formalisation. They can be used as part of the series 'Mathematics at School' and 'Professions'.

Multimedia Mathematics copyright situation

All the content of the M³ project is available under *Creative Commons* license (CC-BY-NC-SA)⁴¹

4.7 Condigital Project (Projeto Condigital)

In 2007 the Ministry of Education, by means of SEED, launched a call for the Condigital Project, which aimed at the production of multimedia educational content. The general goals were:

- To support the production of multimedia digital content to enrich curricula and teaching practices;
- To encourage the production of content in the sciences and technology for secondary education;
- To contribute to the improvement of both initial and continuing teacher training;
- To make content, methodologies, resources and pedagogical practices available for the teaching of Chemistry, Physics, Biology, Mathematics and Portuguese, with an emphasis on creativity, experimentation and interdisciplinarity.

The target audience of users for the resources is geographically dispersed, so the production of the resources must take into account cultural and regional differences.

The educational resources should be produced in the format of learning objects, and have been commissioned to be made available at the International Database of Learning Objects (IBOE) and at the Teacher's Portal, both governmental initiatives supporting the production and availability of digital learning resources free of charge.

⁴⁰ Example of video produced by Matemática Multimedia: <http://youtu.be/9LcTOIuj8xQ>

⁴¹ CC-BY-NC-SA = Creative Commons, attribution, non-commercial, share-alike. For further information on the licensing of the resources of the Multimedia Mathematics Project see <http://rea.net.br/2010/12/23/parceria-entre-mec-e-unicamp-gera-projeto-de-recursos-educacionais-abertos-online/>

4.8 Public Domain Portal (Portal Domínio Público)

The Public domain portal was launched in 2004, initially with 500 works, and to date it contains 192,650 resources. It proposes the sharing of knowledge, making available a virtual library which is intended to be a reference for teachers, students, researchers and the general population.

This portal consists of a virtual environment with a collection of works which are in the public domain — mostly literary, scientific and artistic works in the format of texts, audio, images and videos. The works that are not in the public domain are authorised to be disseminated, and consist of a public and universal heritage. Its aim is to help build social consciousness, citizenship and democracy in Brazil.

Media	Total
Texts	177.045
Images	11.904
Audio	2.494
Videos	1.207
Total	192.650

The screenshot shows the Domínio Público website homepage. At the top, there is a navigation bar with the logo of the Ministry of Education and several menu items: 'Missão', 'Política do Acervo', 'Estatísticas', 'Fale Conosco', 'Quero Colaborar', and 'Ajuda'. Below the navigation bar, the main content area is divided into two columns. On the left, there is a search section titled 'Pesquisa Básica' with a search bar and several filters: 'Tipo de Mídia', 'Categoria', 'Autor', 'Título', and 'Idioma'. On the right, there is a 'Destakes' section with a list of featured resources, each with a small icon and a title. The resources listed include 'Machado de Assis: obra completa', 'Plano de Desenvolvimento da Educação', 'Música Erudita Brasileira', 'Obras Machado de Assis', 'Vídeo Paulo Freire Contemporâneo', 'Poesia de Fernando Pessoa', 'Literatura Infantil em português', 'A Divina Comédia em português', 'Publicações sobre educação', and 'Obras de Joaquim Nabuco'. At the bottom of the page, there are several promotional banners for various educational materials, including 'DOSSIÊ', 'Legislação Educacional de 2003 a 2010', 'Coleção EDUCADORES', and 'COLEÇÃO HISTÓRIA GERAL DA ÁFRICA'.

Figure 12. Public Domain Portal homepage (www.dominiopublico.gov.br)

Images of works of art, national hymns, and literary texts and are amongst the most accessed in the repository. There is also a database of theses in a variety of subject areas.

Public Domain Portal copyright situation

The information provided in the portal is that all the published works are either in the public domain or have been given authorization for publication by the authors. Rossini (2009:62), however, points to the following situation which is still valid:

[...] the download of a sample of contents showed that not all contents have Creative Commons licenses associated with them and many are not in the public domain based on a simple count of years. It is true that many do not have a copyright notice or symbol in the material, however the Brazilian law – implementing the international copyright system – does not require notice for copyright to hold true. Thus, while recognizing that our sample is not statistically significant, it is fair to say that the examples we found break down the copyright statement from the Public Domain project.

4.9 Teacher's Portal (Portal do Professor)

The launch of the Teachers' Portal by the Ministry of Education in partnership with the Ministry of Science and Technology took place in June 2008. The aim was to support the teacher training process and to enrich their pedagogical practices. The portal is a collaborative public space which can be accessed by all.

There are multimedia resources in many languages and in different formats, which can be downloaded, copied and distributed, but not commercialized. The resources have been created and adapted by educational institutions, foundations, institutes, private and public organizations of different countries and offered to be published at the International Database of Educational Objects (BIOE). The resources are assessed by Brazilian universities and catalogued in accordance with the *Dublin Core Standard*. After being assessed and catalogued, the resources migrate to the Teacher's Portal so that, alongside other resources coming from initiatives such *TV Escola* and *Public Domain Portal*, they can be used by teachers to plan and enrich their classes.

Since its launch in 2008 the portal has had a total of 8,074,797 unique visits and now has 9,279 resources.

TEACHER'S PORTAL COPYRIGHT SITUATION

The resources published at the Teacher's Portal are either licensed under Creative Commons or authorised by the authors to be used by the Ministry of Education.

Open Educational Resources in Brazil



Figure 13. Teacher's Portal homepage (portaldoprofessor.mec.gov.br)

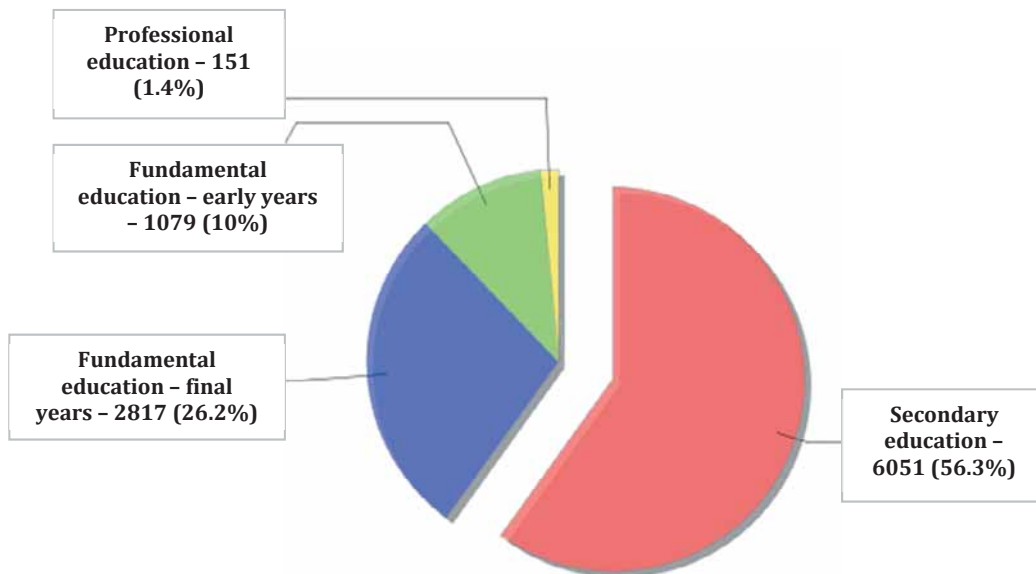


Figure 14. Resources per educational level

4.10 SENAI Distance Education Courses

SENAI (National Service of Industrial Learning) is a national centre of knowledge creation and dissemination aimed at the industrial sector. Created in 1942, it is part of the CNI system (National Industrial Confederation). It is the biggest centre for professional education in Latin America. At present SENAI offers distance education courses free of charge for anyone interested in learning about six different areas of knowledge: Environmental Education, Entrepreneurship, Labour Legislation, Safety at Work, Communication and Information Technologies and Intellectual Property. The courses are offered in two distance education modalities: via printed materials and online. The courses have 14 study-hours each and are made available to the students via a virtual learning environment over a period of about 20 days. The students are assessed at the end of the course period and receive a course certificate.

SENAI'S COURSES COPYRIGHT SITUATION

The educational resources offered at SENAI do not have open licenses. They are not primarily intended to be used by teachers, but to serve as sources of information and knowledge for the population who meet the target audience criteria. In this sense, there does not seem to be a concern with open licenses for the reuse of the content, but with widening participation in education. However, to date, the courses are restricted to specific geographical locations in Brazil and have a full enrollment procedure before the repositories can be accessed.

Conheça os Cursos a Distância de Competências Transversais

O SENAI oferece cursos gratuitos a distância sobre temas transversais que desenvolvem capacidades para a iniciação no mundo do trabalho ou, no caso de quem já está trabalhando, para a atualização das competências profissionais. Os temas disponíveis atualmente são: *Educação Ambiental, Empreendedorismo, Legislação Trabalhista, Segurança do Trabalho, Tecnologia da Informação e Comunicação e Propriedade Intelectual.*

Os cursos estão sendo oferecidos em duas formas a distância: [on-line](#) (conectado a internet) ou com [material impresso](#) (MDI).

Agora é com você! Faça a sua escolha e bons estudos!

SENAI - OI
REFERÊNCIA NACIONAL

OUTROS CURSOS A DISTÂNCIA:
VERIFIQUE CONDIÇÕES E DISPONIBILIDADE

VEJA MAIS

ACESSE O TUTORIAL DO SITE

Figure 15. SENAI - courses homepage (<http://www.senai.br/ead/transversais/>)

4.II São Paulo Municipal Secretariat of Education Portal

The São Paulo Municipal Secretariat of Education licensed its website under Creative Commons 3.0 Brasil in June 2011. The website provides access to publications mostly aimed at basic education, for teachers and learners. These include guidelines for teachers on learning expectations and support textbooks for learners focusing on Portuguese and Mathematics.

Education Secretariats from other municipalities and states can now make use of these educational resources should they wish, adapting them to their local needs; potentially resulting in considerable savings to public money usually invested in the production of learning materials. There is a need, however, to disseminate to stakeholders and the general public the understanding that these resources can now be reused in such ways.

SP EDUCATION SECRETARIAT PORTAL'S COPYRIGHT SITUATION

The website is licensed under Creative Commons 3.0, therefore it is understood that all the educational content published in the website also holds the same license.



Figure 16. São Paulo Municipal Education Secretariat Portal
 (<http://portalsme.prefeitura.sp.gov.br/Projetos/BibliPed/Anonimo/ApoioLPortaluno.aspx>)

4.I2 SEBRAE (Brazilian Support Service to Micro and Small Businesses)

SEBRAE offers about 15 courses free of charge to anyone wishing to learn more about business management and entrepreneurship. The courses are tutored on a virtual learning environment (platform webAula), and the learners receive a course certificate on completion.

The courses offered by SEBRAE focus on the learner, and aim to widen participation in education and access to knowledge. The reuse of such courses by other teachers do not seem to be the focus of SEBRAE, therefore the courses do not hold an open license. They are, however, offered free of charge and open to anyone to study them. Users only need to have access to the Internet and commit to a certain number of study hours over a given period of time so that they can complete the syllabus.

SEBRAE'S COURSES COPYRIGHT SITUATION

SEBRAE's initiative targets qualifying new micro and small entrepreneurs free of charge. It has not been designed to be an OER initiative, nor an open digital content repository, but to offer education to the population in the format of full courses, with assessment and certification. However, it does hold all characteristics to be an OER initiative, except that its content does not have open licenses. Nevertheless, it is an innovative model of free, open education in Brazil.



Figure 17. SEBRAE courses homepage
(SEBRAE – Serviço Brasileiro de Apoio às Micro e Pequenas Empresas - <http://www.ead.sebrae.com.br/HotSite/>)

4.I3 Fundação Getulio Vargas (FGV)

FGV is a member of the OpenCourseWare Consortium having joined in July 2008. Its courses can be considered OER by definition. They are 5, 15 or 30-hr courses on a variety of subject areas such as finances, business administration, science and technology, philosophy and sociology. Some courses have external sponsors, and this looks like a new business model for OER provision that FGV is experimenting with in their website. For example, in partnership with an insurance company, FGV will make available a series of 5 courses teaching Brazilians how to save and invest their money, in response to the increasing stabilization of the Brazilian economy over the past two decades. The courses will aim to explain the various types of investments available and how to organize a family budget.

FGV OER allows learners to print a certificate of participation at the end of the course.

FGV COURSES COPYRIGHT SITUATION

The courses offered at FGV OpenCourseWare are licensed under Creative Commons.

The screenshot shows the FGV Online OER homepage. At the top left is the FGV online logo. A navigation bar contains links for 'Página Principal', 'Cursos', 'Inscrição', 'FGV Online', 'Notícias', and 'Contato'. Below the navigation bar, the breadcrumb trail reads 'home / cursos / cursos gratuitos'. On the right, there is a link to 'alterar tamanho da letra' with '-A' and '+A' buttons. The main heading is 'Cursos gratuitos'. The text below states: 'A Fundação Getulio Vargas é a primeira instituição brasileira a ser membro do OCWC (Open Course Ware Consortium), o consórcio de instituições de ensino de diversos países que oferecem conteúdos e materiais didáticos de graça pela internet.' It also mentions: 'Para ter acesso ao que o FGV Online oferece a você nesse Consórcio, veja as opções abaixo. Em caso de dúvidas, consulte a página de [Dúvidas Frequentes](#).' There are two sections of sponsored courses: 'Cursos na área de Finanças Pessoais' with a link to 'Como organizar o orçamento familiar – 5h – NOVO!' and 'Cursos na área de Sustentabilidade' with links to 'Sustentabilidade no dia a dia: orientações para o cidadão – 5 h' and 'Sustentabilidade, um valor para a nova geração: orientações para o professor de ensino fundamental – 5 h'. On the right side, there are logos for sponsors: 'Icatu SEGUROS' and 'Walmart Brasil'.

Figure 18. FGV Online OER homepage (<http://www5.fgv.br/fgvonline/cursosgratuitos.aspx>)

4.14 REA Dante

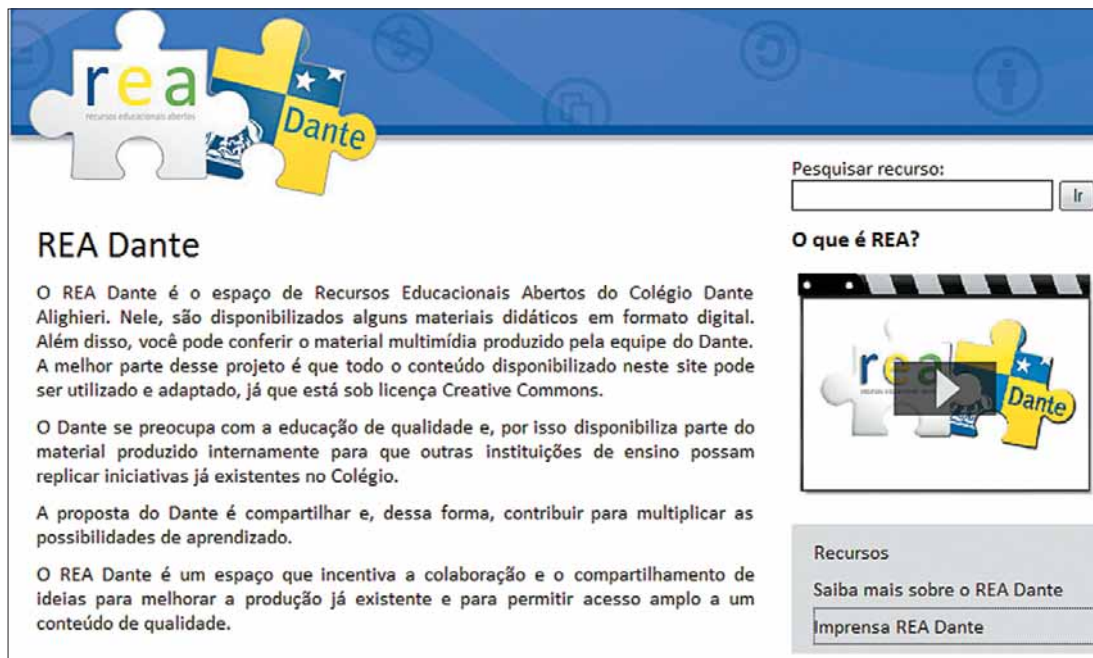
REA Dante is the open educational resources initiative of the school Dante Alighieri, in São Paulo. The project started on the 17th of June 2011. All content available in the website can be downloaded and adapted. Dante aims to share its resources with other schools and learners, this way opening up possibilities to multiply learning opportunities.

Due to being a recent OER project in Brazil, REA Dante could not yet map the profile of their users, but it is believed that it includes both public and private educational institutions which are looking for ideas for educational projects and tasks. So far, in two months since its launch, Rea Dante has received over 700 accesses on its website. The project also has a Facebook page to help disseminate its content.

REA Dante aims to encourage collaboration and the sharing of ideas in order to improve the production of educational resources locally, ensure quality and open up global access.

REA DANTE COPYRIGHT SITUATION

The educational resources available at REA Dante are licensed under Creative Commons Attribution 2.0, except where otherwise stated.



REA Dante

O REA Dante é o espaço de Recursos Educacionais Abertos do Colégio Dante Alighieri. Nele, são disponibilizados alguns materiais didáticos em formato digital. Além disso, você pode conferir o material multimídia produzido pela equipe do Dante. A melhor parte desse projeto é que todo o conteúdo disponibilizado neste site pode ser utilizado e adaptado, já que está sob licença Creative Commons.

O Dante se preocupa com a educação de qualidade e, por isso disponibiliza parte do material produzido internamente para que outras instituições de ensino possam replicar iniciativas já existentes no Colégio.

A proposta do Dante é compartilhar e, dessa forma, contribuir para multiplicar as possibilidades de aprendizado.

O REA Dante é um espaço que incentiva a colaboração e o compartilhamento de ideias para melhorar a produção já existente e para permitir acesso amplo a um conteúdo de qualidade.

Pesquisar recurso: Ir

O que é REA?

Recursos

Saiba mais sobre o REA Dante

Imprensa REA Dante

Figure 19. REA Dante homepage (<http://www.colegiodante.com.br/rea/>)

OTHER FURTHER OPEN-DIGITAL-CONTENT REPOSITORIES

- Laboratório Didático Virtual (São Paulo University – LabVirt) <http://www.labvirt.fe.usp.br/>
- LUME – (Digital Repository of the Federal University of Rio Grande do Sul) Repositório Digital da Universidade Federal do Rio Grande do Sul - <http://www.lume.ufrgs.br/>
- Portal Ciência à Mão (Based at FEUSP, it has resources from BibVirt and LabVirt) - <http://www.cienciamao.if.usp.br/index.php>
- SciELO – Scientific Electronic Library Online – www.scielo.br



5 Recommendations
for the promotion
of OER in Brazil

This research revealed that the concept of OER in Brasil demands a lot more dissemination and practical implementation actions by the government and both public and private education sectors in order to harness the potential of OER to support the achievement of the national education goals. With the exception of a few educational institutions that are engaged in some sort of international collaboration or community, or individual educators who take up a personal interest in the theme, the OER movement in Brazil seems to revolve around governmental initiatives that do not, for the most part, go by the name of *open educational resources* initiatives. They are, instead, initiatives built around the concepts of *learning objects*, *digital content* and *educational objects*, with the added aim of making educational resources available free of charge for public use to enhance teaching and learning. Most of these initiatives had started prior to the take-off of OER as a movement (2002).

As far as *purpose* is concerned, the resources seem to have been useful, and fit for purpose, despite their not being OER as strictly defined. In the scenario for OER within the basic-education system, the statistics as presented indicate that the educational resources have been used by teachers in different subject areas, although very little has been said as to how, or how successfully. However, within this context, what seems to end up slightly compromised is the dissemination of the philosophy underpinning the OER movement amongst educators, learners and the general population in Brazil, which is the one of sharing, reusing, adapting, re-adapting, translating and localizing educational resources.

Quality control

In the government-supported initiatives, the evaluation of the content is usually done on a top-down basis, where the content is submitted by the teacher⁴², or educational institution, and then assessed by pre-selected specialists from universities or from the secretariats (sometimes both), and only then the content is made available in the portals. From a quality perspective, the process is in place to ensure that all the content published is in line with a minimum quality standard to be used by teachers.

The attempt to control the quality of the resources in the portals means that these are often either commissioned by MEC to be produced by universities for the schools or, when submitted by institutions or individuals, the resources have to go through an extensive process of evaluation by specialists from universities or from the secretariats in order to be published in the portals. This is not to say that having a quality-control procedure is not good, but that in certain cases it may restrict the spirit of collaboration and sharing that the OER movement often underpins, and therefore a lot of creativity and examples of good practice (including practices of healthy competition amongst schools) may be restrained. It also does not encourage the community itself to analyse and evaluate the resources. It would be valuable to consider, perhaps in addition to what has been done, to provide the public schools with the autonomy to showcase their own work and, from there, to choose best practice examples.

⁴² Individuals can sometimes submit content but often need to be associated to an educational institution.

Recommendation:

Alternative evaluation practices should be put in place alongside existing practices, encouraging a participatory culture involving the academic community and teachers in the evaluation of the resources produced by them, in the form of an open *peer-review* process. The involvement of teachers and users in the process of assessment and evaluation of both the portals and OER is essential to help build a culture of sharing, valuing third-party work, collaborating and helping develop the skills needed to assess both the quality of content and the originality of the work.

Policy

There is a need for further discussion on the role that OER can play in terms of widening participation in education in Brazil. There is a need for OER policies at both national and regional levels,⁴³ enabling the use of openly licensed educational resources, dealing with accreditation matters and funding. These would encourage and support government-funded strategies for OER promotion amongst schools and academia in general.

With the recent changes in the former SEED (Secretariat for Distance Education), which used to play a leading role in most of the government-supported initiatives presented in this review, little seems to be known to date about the prospects of financial support for the current initiatives, or whether there are plans for new initiatives to come into existence.

Recommendations:

- The continuation and extension of the work started by SEED by the new Secretariat of Regulation and Supervision .
- The allocation of public funds to support OER projects at national and regional levels, with the support of the State and Municipal Secretariats.
- Facilitated access to planning and evaluation reports by the general public for government-supported projects.
- The establishment of a national accreditation system for OER, allowing the most disadvantaged to have access to the professional market.

⁴³ There is a policy in place at São Paulo City stating that educational resources produced by the secretariat will be openly licensed (Decree 52.681, 26/11/11). There are other two bills of law in progress dealing with the licensing of publicly funded resources - one at São Paulo State (989/2011) and one at the Federal level (PL 1513/2011).

Copyright

There is a general inconsistency with regard to the types of licensing of the educational resources available in the portals. As a result, what the user is allowed to do with them can be unclear. When the educational resources are made available in the educational portals, they are often either bound by copyright restrictions which allow their use but not necessarily their modification, localization or translation, or they are licensed under Creative Commons.

Recommendation:

It is advised that the intellectual property rights of existing repositories should be aligned with open licenses in order to ensure consistency of rights of use, distribution and adaptation of the educational resources.

OER in the basic education sector

Government-supported open digital-content initiatives in Brazil are mostly designed to support teaching in the basic-education sector. There is a need to raise awareness in the sector regarding OER, going beyond the availability of content, but also encouraging a culture of sharing, adapting, translating and reusing licensed educational resources. There is also a perceived need for continuous needs analysis and the public setting of goals for new and existing projects. Easier access to project-evaluation reports would also be a social benefit.

Recommendations:

- The alignment of current digital content initiatives with the principles of sharing, reusing, translating and adapting content supported by the open educational resources movement.
- The organisation of strategic awareness-raising action supported by the public and private basic-education sector.
- The recognition of OER engagement by teachers as an activity of continuous professional development.
- The creation of repositories focusing on the learner, not only on the teacher.

OER in the higher education sector

In the higher-education sector OER initiatives tend to be more explicit about doing OER and being involved with the philosophy of the movement. Part of this engagement is due to the compromise with research and development that universities have. However, the take-up is so far illustrative, and shows that there is a strong need for awareness raising in the sector.

Recommendations:

- The organisation of strategic awareness-raising action supported by the private higher-education sector (since it is currently responsible for most of the offer of HE in Brazil) and its corresponding class associations.
- The participation of individual HE institutions in the Brazilian efforts in support of the OER movement through collaborative initiatives to reduce costs and avoid duplication of efforts where technology is concerned.
- The establishment of career-development plans that recognize OER engagement as academic output and continuous professional development in order to encourage academic staff to produce, share and reuse OER.
- To encourage publicly-funded HE institutions to collaborate and open their educational resources, particularly those offering courses in the distance-learning mode and part of the UAB system.

Pedagogy

The content in the portals allows for the teachers to draw on a number of different pedagogical perspectives, which can be used both on online and face-to-face courses. *Collaborative learning*, *problem-based learning*, and *didactic approaches* to teaching and learning are the most evident pedagogies found in the experiences we came across.

Recommendation:

Best-practice examples could be highlighted in the portals, illustrating how OER can bring about experimentation with a variety of pedagogical approaches.

Technology

The technology used in the portals for availability of content enables the download of the digital resources in different formats such as audio, video or pdf. Most of the portals also offer the necessary plugins for content visualization when necessary. However, tools that enable the re-upload of remixed content directly onto the portals, with versioning control, have not been found. Whilst downloading content may be facilitated by a number of tools and programs normally provided, uploading content seems to be a more controlled task with restricted sharing possibilities.

In order to keep the software of the portals up to date, it would be interesting to release them as 'open source' so that the community would be able to contribute to their research and development. This is in line with the 'open access' movement and the collaborative spirit of OER. It would also be interesting to see repositories with interoperable standards, in order to facilitate the sharing of resources and collaboration, such as the one presented in the section (3.1.1).

Recommendations:

- Increased use of Web 2.0 tools for user participation
- Release of OER software as open source
- Increased release of content in open file formats
- Increased interoperability of repositories



6 Final Considerations



The aim of this review was twofold: to present the state of OER in Brazil and to discuss the possibilities for OER to strategically contribute to the achievement of the national targets for education in 2011-2020.

It has been shown that Brazil has digital-content repository initiatives, but most of them are not called OER by the name. Quite often, however, the aim of such repositories is to open up access to educational materials to both teachers and learners. In order to have a better alignment with the OER movement, such repositories would have to undertake a clearer policy on copyright and reuse of resources.

For the last decade Brazil has been focusing on targeting the deficiencies highlighted by various systems of measuring educational performance, both national and international, such as the PISA results of 2000, the School Census of 2005 (INEP), and also by the other testing systems which are part of the Prova Brasil⁴⁴. The results seem to point to deficiencies at all levels, including a lack of trained teachers, poor performance by students at basic-education level, and poor access to higher education.

The systemic view of education proposed by MEC and the PNE, instrumentalised by the action plan of the PDE, seems to put the following at the forefront of actions, in terms of what matters for the purpose of this OER review:

- the need to widen participation at all stages of national education,
- to ensure progression by establishing extra-curricular recuperation mechanisms,
- increased schooling hours,
- the need to qualify teachers at graduate level to teach at basic-education stages,
- the need to increase teachers' access to digital content in order to improve teaching quality and the use of ICTs in education.

This systemic view of education suggests that education in Brazil should develop so as to include simultaneous focus on the three main systems: basic, secondary and higher. This way, when discussing OER, these three spheres of national education, in line with the national development plan for the sector, should ideally be considered. In addition, given that the private sector is a significant presence in HE in Brazil, its important role in creating and disseminating OER should not be neglected.

The OER recommendations provided in this review have attempted to take into account these nuances of education in Brazil, the plans, prospects and expectations, as well as the main areas in which there is

44 Large scale diagnostic evaluation of Brazilian education http://portal.mec.gov.br/index.php?Itemid=324&id=210&option=com_content&view=article

major cause for concern, such as the need to increase access to teacher-training and to extend teacher-student contact by increasing the duration of the school day.

The potential of OER to support the success of current and future actions in Brazilian education is immense. Brazil just needs to explore the possibilities for current OER and open-digital-content experiences to be further developed. This way, innovation in education can be fostered by OER, thus also advancing national policies which can truly support the agenda for widening participation in education.



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Creative Commons licenses

http://wikieducator.org/OER_Handbook/educator_version_one/License/License_compatibility

Survey on the Use of Information and Communication Technologies on Brazilian Schools

<http://www.cetic.br/tic/educacao/2010/index.htm>

Snapshot of OER in the media

‘Conversas Cruzadas’ - TV interview program about OER: <http://youtu.be/0Fpbb9Z8mDY>

TV news article about ICTs in education and OER: <http://www.info4.com.br/gomateria.asp?cod=462939&nome=1579&cliente=1579&tipo=2>

Aprendiz Portal (news article): <http://portal.aprendiz.uol.com.br/2011/07/07/recursos-educacionais-abertos-surgem-como-promessa-para-democratizar-acesso-a-educacao/>

CTAE-FGV Online (podcast – interview about OER): <http://saladosprofessores.ning.com/profiles/blogs/andrea-inamorato-rea-na-open>

Forum EAD (news article): <http://www.unisulvirtual.com.br/GUIDE/programacao.html>

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