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Challenges and Opportunities

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Foreword

The UNESCO Institute for Information Technologies in Education (IITE) is implementing a project on Open Educational Resources (OER) aimed at promotion of the OER movement in non-English-speaking countries. Since 2009 the needs and challenges for open education and OER have been surveyed in Armenia, Azerbaijan, Belarus, Kazakhstan, Moldova, the Russian Federation, Ukraine, Uzbekistan. 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". Later the surveys in two Baltic countries — Latvia and Lithuania, and People's Republic of China and Brazil were completed, three of them were published. Further the geographical scope of the IITE survey expanded to include Japan, Turkey and Vietnam to provide further insight into the diversity of OER-related patterns in non-English-speaking countries. A revised and expanded study for the OER and educational portals in the Russian Federation was published in a separate volume.

I am pleased to present a new publication in this series produced by our Polish colleagues, Kamil Śliwowski and Karolina Grodecka. The study contains a description of the national educational policy and the structure of the recently reformed educational system of the country, national programmes and projects aimed at digitization of schools, top-down and bottom-up activities in the development of Open Educational Resources; an overview of Polish projects in open education and recommendations for development and use of Open Educational Resources. The country case revealed strong opposition of commercial publishers to the development and use of open digital content, in particular, electronic textbooks, their willingness to retain the market of textbooks and educational materials for primary, secondary and university education. It is noteworthy that teachers are willing to use digital resources available online but, as it happens in many other countries, are not aware of copyright issues. The programme "Digital School" is a now available in beta version http://www.epodreczniki.pl/front/welcome. This is a good example of how, despite all difficulties, OER can be promoted at the national level. The programme has already yielded its first results and we are looking forward to the end of 2015 when all its major goals should be achieved and further on when open digital textbooks for all levels of education should become available.

Dendev Badarch

UNESCO IITE Director a.i.

Preface

September 2013 was an important milestone in the development of open educational resources in Europe. Firstly, the European Commission launched the "Opening Up Education" initiative, a proposal for modernizing the European educational system that places strong emphasis on open educational resources as means towards achieving this goal. Secondly, the first modules of Polish open e-textbooks from "Digitial School" programme have been published. Thus, just a year after the UNESCO Paris OER Declaration of 2012, we see a massive and fast realisation of its provisions in Europe despite all barriers that education policies and programs face.

The Polish e-textbooks programme should be seen as the fulfillment of the goals set by the "Opening Up Education" initiative. Launched in 2011, The Digital School programme can be considered as an early implementation of the rules promoted both by the European initiative and the UNESCO Declaration. We are thus hoping that the Polish national open education initiative will become an example and best practice that will be useful and inspiring for other countries. This report shows the genesis of the Polish programme in the context of ICT-related educational policies, programs and initiatives in Poland.

The success of the open education model in Poland is partially due to well-conceived government policies, but also a consequence of action of a strong community of activists, educators and organizations that have been promoting and supporting its development for almost a decade. Creative Commons Poland (established eight years ago), together with the broad Coalition for Open Education (in existence for five years) have helped to develop and introduce a wide range of open projects in Poland, and to raise awareness about the advantages of openness. Current successes should be seen as a result of a collective impact of a broad group of open activists, who have organized events and trainings, worked directly with organizations, and advised the government on the shape of open policy.

Several years ago, the first requirements of openness introduced in public and private grant programs were seen in Poland as significant progress of the open education movement. As a result, many organizations and public institutions active in the field of education became aware of open licensing models, and begun creating open educational resources. But, as this publication shows, we soon became aware that this was only an initial trial in a longer-term efforts to make open education a standard, and not just a good but rare exception from closed norms. Over the last two-three years, Poland moved from being a country where openness of resources was just a topic of public discussion, awareness raising by activists, and limited use by the educational sector — to a country which is the first to introduce a national programme for the creation, with public funding, of textbooks that are open educational resources.

The publication of the first elements of open textbooks, together with a dedicated and open publishing platform are a significant milestone for open education in Poland. Yet larger goals are already clear. We hope that the Polish government will extend the model used for textbooks to all educational content created with public funding, and in this manner introduce a general open policy for education. Ultimately, we hope that an open policy will be introduced for all publicly funded content — and that the educational sector can spearhead these developments, in Poland and abroad.

Alek Tarkowski, Public Lead of Creative Commons Poland,
Cofounder and Director of think-tank Centrum Cyfrowe Projekt Polska

Introduction

The Horizon 2010 Report predicted that the time-to-adoption of open educational content is a question of one year or less, whereas the Horizon 2013 Report (K-12 Edition) determined this time as two to three years for secondary education. This forecast worked well for Poland: openness in education went beyond the prognosis scale and the predicted trends have already been shaped and secured by governmental, non-governmental and institutional regulations.

This publication outlines the current state of Open Educational Resources in Poland. It opens with a brief overview of the Polish educational system at primary, secondary and tertiary levels, the programmes for the digitalization of schools, and digital competencies of educators and students required to create educational resources. The second chapter contains a description of the school and academic textbook market, and the publishers' attitudes towards recent or planned changes in the governmental policy. The third chapter is a survey of national programmes and initiatives focused on the development of the Information Society. The first part of the chapter describes large-scale governmental and regional programmes for the digitalization of schools with an emphasis on the current "Digital School" programme and one of its components — e-textbooks. The second part is dedicated to an analysis of the other governmental programmes, which are related to open content. The chapter covers the programmes and projects implemented through the Ministry of National Education (MNE), the Ministry of Foreign Affairs (MFA) and the Ministry of Culture and National Heritage (MCNH). The chapter closes with the characteristics of non-governmental programmes, whose objective is the development of digital competencies among students. All programmes are analysed in the context of developing educational resources. The fourth chapter presents two approaches to the Open Educational Resources movement: top-down (initiated by the government) and bottom-up (nongovernmental initiatives). It also describes the role of the Coalition for Open Education in shaping the policy of openness in Poland, paying particular attention to recommendations for the openness of resources in the "Digital School" programme, in nongovernmental sector and academic environment. The chapter closes with a revision of selected openness-related projects implemented mainly by nongovernmental organisations.

The development of OER is considered in a five-year perspective, including those programmes that were precursors of the current openness programmes. The authors review and describe the initiatives, projects, programmes and activities aimed at promotion of openness, which, starting from 2009, have been completed or are still underway in Poland. In 2012 and 2013, the support for openness of educational, cultural and academic resources was building up. Some of the described projects and programmes emerged at the time of preparation of this publication. They were included in consideration because every case is crucial for determining the future picture of openness in Poland

and shaping the policies. However, some of the initiatives are at a very early stage, their outcomes can be assessed in few years.

The Polish education system undertakes active efforts to promote openness and the creation of new open resources tailored for various groups of users. It is noteworthy that certain governmental departments already follow the rule: all publicly funded resources should be available for free. Thus, they create public resources, which can be freely used by any citizen. After completion of pilot stage such activities acquire systematic character.

I. The Educational System in Poland

The national educational system has undergone dynamic changes during the last twenty years. The share of higher school and university graduates increased from 9.7% to 21.2% between 1995 and 2009. This is one of the most rapid growth rates among OECD countries. During this period the educational system was reformed and the core curriculum at all educational levels was modified. During the last decade the Polish society has been increasingly involved in the discussion of financing of the educational system, for example, the sustainability of small schools, teachers' salaries, the cost of textbooks, etc. Later on the debate covered the topics of quality of teaching and the degree of readiness of graduates to entering the changing job market, consistency of educational practice to the purpose of educating children for the future.

Since the downfall of the communist regime in 1989, the number of higher education institutions, non-public and private schools radically increased. Currently efforts are made to modernise schools and higher education institutions to bring the teaching of new media and ICT competences to a massive scale.

Below, basic data and information about the Polish educational system are presented. The Educational System Bill (*Ustawa o systemie oświaty*) approved in 1991 does not cover higher education institutions, but the Law on Higher Education (*Prawo o szkolnictwie wyższym*) of 30 August 2005 specifies that higher education institutions are an integral part of the national system of education and science.

I.I. Primary, secondary and post–secondary education

The Education System Bill of 7 September 1991 defines the scope and organization of the national educational system. A new structure of Polish schooling was introduced in 1999, with the reintroduction of middle schools (*gimnazjum*). This change divided educational levels into primary (grades 1-6), secondary (3 years) and post-secondary (3 years in the case of grammar school, 2-3 years of vocational school and 4 years of technical college) schools. Education at public schools within the core curriculum framework is free of charge.

Educational programmes for schools are based on the compulsory core curriculum, which has to be incorporated into the teaching programme. The core curriculum experienced many changes in 2002 and 2009; appropriate changes were introduced at the beginning of the school year 2012/2013. The educational community is skeptical about these frequent changes in the core curriculum and considers them as attempts to fix the 1999 reform and inability of appropriate ministries to follow consistent educational policy. Nevertheless, according to many indicators, the quality of education in Poland is improving. Poland ranking in PISA (Programme for International Student Assessment) research, which measures the performance of fifteen-year-olds in reading, comprehension, mathematics and natural sciences, has advanced in reading with comprehension from the 25th to 15th place. In the most recent PISA exercise conducted in 2009 Poland was ranked 19th in the natural sciences and the 25th in mathematics. At the same time, "Learning Curve" initiated by the Pearson Foundation (in cooperation with the weekly The Economist's Research Centre) in 2012 ranked Poland 14th. This report is based

on three studies, among others: PISA, PIRLS (an examination of achievements of ten-year-olds), and the TIMSS (examination of fifteen-year-olds' knowledge in mathematics and the science). PISA research yields interesting results about the usage of computers and Internet at schools that indicates lower than expected digital competencies of students and poor integration of new technology in pedagogical practice. Since 2011 the Modern Poland Foundation (*Fundacja Nowoczesna Polska*) has been working on expert analysis and development of new, flexible approach to research on digital competencies in the educational context.

The Polish educational system should also be considered from the perspective of society's professional and economic structure. The total expenditure on educational institutions is equal to 5.7% of the gross domestic product (GDP), they are financed by local authorities (from elementary schools to secondary and tertiary schools). Since 2006, thanks to an increased amount of European funding obtained through the Operational Programme "Human Capital" the expenditure on education from local governments has increased. The main part of the educational expenditure is teacher salaries (56.6%). The total amount of teachers exceeds 654,000 and they compose the largest professional category in Poland. This number remains unchanged despite the decreasing number of students, which also generates a debate about financing of education. From 2005 to 2011 the number of students decreased by a million, from 6.5 to 5.5 million. The expenditure on education from the national budget is growing, so does the family expenditure on children education. In this situation, the need to improve the efficiency of spending the resources and to lower the costs, especially for parents, is becoming increasingly urgent. The cost of school textbooks, next to teacher salaries, is the other item of expenses that is being debated.

I.2. The market for textbooks and educational materials for primary, secondary and post-secondary education

The model of distribution of textbooks and educational materials in Poland is based on the free-market approach. Private companies compete in the field of production and distribution of textbooks. The state regulates the market only by introducing certain legal limitations, reviewing the quality of textbooks in accordance with the core curriculum, and monitors financial aspects.

Since 1989 the process of privatising public publishers has started. Two largest publishers — Polish Scientific Publishers (*Wydawnictwa Naukowe*, PWN) and Educational and Pedagogical Publishers (*Wydawnictwa Szkolne i Pedagogiczne*, WSiP) — became private in 1991 and 1998, respectively. Liberating the market from the state monopoly and commercialization of publishers caused significant fragmentation of the market and expanded the range of textbooks. During the last few years the market was reconsolidated by a group of the three largest publishers: *WSiP, Grupa Edukacyjna* and *Wydawnictwa Nowa Era*, which jointly control over 70% of the school textbook market.

In the 1990s, the textbook market, although increasing every year, mainly still relied on the trade in used books. The content was updated rarely and nominally, thus it was possible to resell textbooks and reuse them. Significant changes were initiated by the educational reform in 1999 and the emergence of new

types of schools. The value of the market increased within one year from 360 to 450 million złotych, it continues growing, despite the decreasing number of students. Publishers have started to expand the range and actualize the list of textbooks (even though the curriculum remained unchanged) in order to minimize the market of second-hand textbooks. Some 4430 textbook titles appeared in 2011, out of which 1880 were new to the market. Publishers use various methods to increase the retail numbers of new textbooks and to distribute them more efficiently to schools. For example, textbooks and exercises are sold together (separate purchase of exercise books is not allowed). One of the most controversial methods is influencing teachers, for example, through various forms of credits from certain publishers that commit classes and schools to purchase textbooks or sets of textbooks produced by the publisher.

From economic perspective this is not a pure free-market model, because the consumer does not make the decision about the purchase. Teachers choose textbooks and parents have no influence over the selection in terms of quality or price, even though they pay the price. This situation evidences inadequate involvement of the authorities, which should support the assurance of the quality of textbooks available on the market and their distribution to students in the most efficient manner. Current growth of the number of textbooks is accompanied by increasing prices. The prices are adjusted to the system of accreditation of the Ministry of National Education despite the fact that teachers can develop and offer their own teaching programmes, which, after being approved, can be based on other textbooks than those approved by MNE.

This leaves no space for improvement of textbook quality and for innovation in technical aspects. For publishers it is more profitable to follow the Ministry's accreditation criteria and convince teachers to use standard products, which are supplemented with tools that help implementing the core curriculum.

2005 **2011**

1 **How much is the textbooks market worth?**

Since 2005 the number of students dropped by one million and the publishers' profits are growing, due to i.e. the increased number of sold exercise booklets and educational materials.

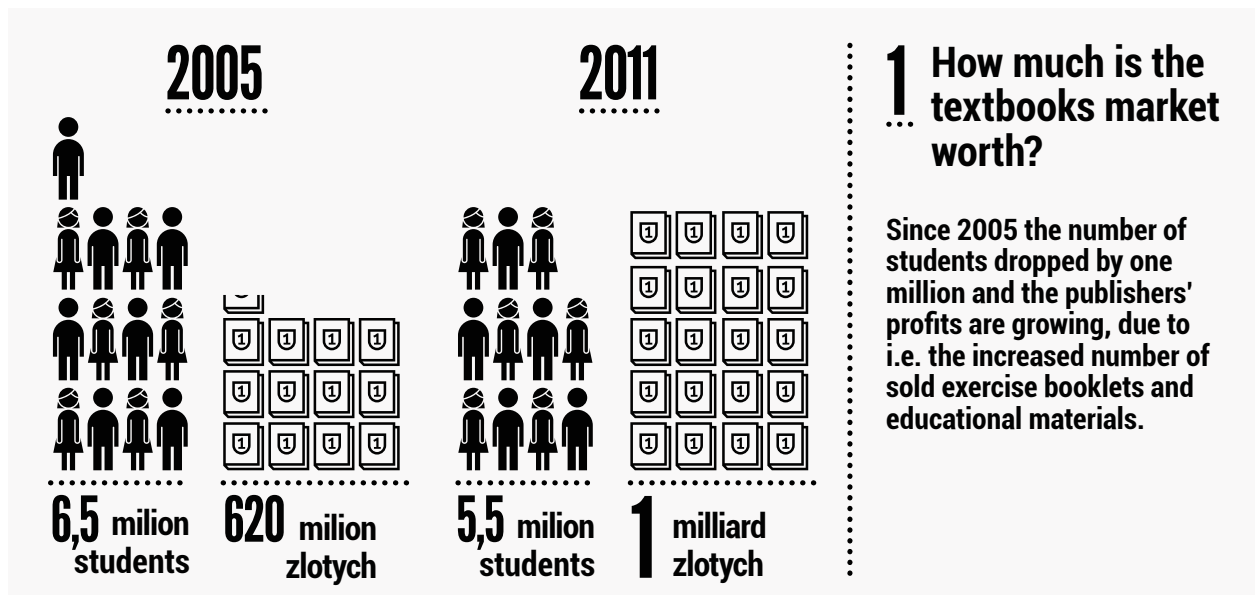**6,5** milion students **620** milion zlotych **5,5** milion students **1** milliard zlotych

Figure 1. The dynamics of the textbook market in Poland (Piotr Chuchla, 2012, CC BY)

This prevents teachers from personalizing the teaching process and using alternative educational resources. In recent years, however, certain efforts were taken by the Ministry of National Education in order to improve this situation. Limitations were introduced for textbooks approved by MNE: they have to be accessible on the market without any change for at least three years. The Ministry has also started investing in online educational resources by supporting the project aimed at revitalization of the portal of educational resources, Scholaris.pl. The portal has been operational for eight years, and since 2012 has been implementing a complex programme "Digital School" (*Cyfrowa Szkoła*), whose main objective is the development of a set of open digital textbooks.

According to the estimates of PricewaterhouseCoopers, the Polish textbook market in 2012 was worth over one billion złotych, as compared to 620 million złotych in 2005, despite the decreasing number of enrolled students and sold textbooks. This growth has been stipulated by the increase in the number of supplementary materials and sets of exercises and didactical tools for teachers. The publishing market is subject to interventions in the form of subsidies for textbooks for the poorest students. Those subsidies are part of the programme "School Starting Kit", which cost the government 128 million złotych in 2012.

There are other forms of earning money for publishers. They can bid for government and European Union money allocated for research and development. For example, the three largest publishing houses received 42 million złotych between 2009 and 2011.

I.3. Higher education

During the past twenty years the higher education system has also undergone considerable quantitative and organizational changes. The Higher Education Bill (*Ustawa o szkolnictwie wyższym*) of 12 September 1990 enacted the right to establish non-public higher education institutions and enabled the development of the system of distance education. From the beginning of the reforms to 2005 the share of graduates of higher schools was constantly growing. Higher education became a publicly accessible service. The introduction of free full-time studies and organization of evening, distance and post-graduate courses promoted the widespread popularization of studying. Currently there are 461 universities, of which 330 are private. According to the Central Statistical Office of Poland (GUS) data, during the peak of 2005 as much as 1,940,000 students were enrolled in higher education. In the academic year 2010/2011 student numbers decreased to 1,841,300. Although the number of students is constantly decreasing, the scale of this decrease is rather small (5.8% over 5 years).

The existing state of the educational system is a result of regulations introduced by the amendment to the Law on Higher Education (*Prawo o szkolnictwie wyższym*) of 27 July 2005. The main novelty consists in inclusion of Poland in the Bologna process. Since the adoption of this Law the higher education system has undergone many changes. By joining the Bologna process Poland became a part of the community of countries that develop in the same direction, but also a "community of challenges" related to the development and transformation of higher education. A three-step education system has been introduced: 3 years of bachelor studies, 2 years of master studies and, after that, doctoral

studies. Next revision to the Statute of 18 March 2011 introduced further changes, i.e. new rules for funding science, fees for enrollment in a second programme of full-time studies, and the obligation to sign an agreement between the university and the student, for example, on tuition.

One of the challenges faced by the Polish educational system at the time of the reforms was the adjustment of teaching to the requirements of the job market and education for the future. According to the results of a report from the second edition of the Employer-friendly University (*Uczelnia Przyjazna Pracodawcom*) project (2011), employers indicated that most often graduates were unable to merge theory with practice: up to 42% of respondents indicated that the major difficulty for graduates is application of theoretical knowledge in the work place. The development and implementation of the National Qualifications Framework (*Krajowych Ram Kwalifikacji*, KRK) for higher education in the academic year 2012/2013 is considered to be a long-term solution to this problem. The KRK are an element of the Bologna reform which describes the qualifications acquired through teaching in the Polish system of higher education. The introduction of the qualifications framework and related tools will increase the transparency of qualifications of graduates in the national and international context, which, in turn, should favor mobility and expand the opportunities for young people in the job market.

I.4. The market for academic textbooks

The academic textbook market differs significantly from the market for textbooks and educational materials for primary, secondary and post-secondary education. This distinction stems from differences in the model of funding and procedure for approving textbooks by the Ministry of Science and Higher Education (MSHE) and from the specific characteristics of educational institutions.

When analyzing the market of academic textbooks, one should take into account the fact that it is very difficult to identify one correct version of a textbook. Although the Article 188a of the Higher Education Bill mentioned funding for academic textbooks, the concept and range of an academic textbook was not specified. Thus, it is very difficult to get a proper definition for a textbook, as in practice they can appear in different forms. However, the statistical data available in the publications of GUS or the National Library of Poland (BN) evidence that there is a separate category of academic textbooks or textbooks for higher education, which were not identified as scientific publications. The annual edition of "Polish Publishing in Figures" (*Ruch Wydawniczy w Liczbach*) issued by the Department of Publication Statistics of the National Library of Poland (*Zakład Statystyki Wydawnictw Biblioteki Narodowej*) states that in 2011 the average print run for nonserial publications increased to 3000 copies (2800 copies in 2010). The academic textbook market showed a slight decline (36,000 copies) and was fixed at 1,293,000 copies in 2011 (1804 titles). The market share of academic textbooks in the Polish publishing market in 2011 was below 2%.

Despite the fact that the Ministry of Science and Higher Education provides some funding for academic textbooks (over 8.5 million złotych per year), the prices of textbooks published by academic and scientific publishers are still too high (from 80 to 150 złotych per textbook). Students often use lecture notes and

materials available on the Internet instead of the publications recommended by lecturers. They also make a lot of copies, because only few copies of each textbook are available in the libraries due to limited budgets, which were further reduced during the times of the economic crisis. The scope of borrowing from academic libraries is high, but it would be higher if academic libraries could afford purchasing more copies. Although making copies of textbooks (fragments or whole books) is a right guaranteed under the statute of authors' rights and derivative-work copyrights (allowing private use, and in the case of the academic staff, also educational use), academic publishers consider copying as illegitimate action. From the perspective of the publishers, copying is a reason of losses not only for publishers but also for users. In 2005, in an open letter to their readers the Scientific and Technical Publisher (*Wydawnictwa Naukowe i Techniczne*) argued that copying books affected sales and, therefore, decreased the print run, increased prices and even lead to discontinuing academic titles. For years publishers have been running campaigns to prevent copying of books. For example, since 2002 C.H. Beck has been placing on the second page of all books printed by his publishing house a logo "Attention!!! Copying kills books — The law is binding; I don't copy" (*Uwaga!!! Kopiowanie zabija książkę — Prawo zobowiązuje — nie kseruję*). The problem is that these campaigns are misleading and provide wrong information about the copyright.
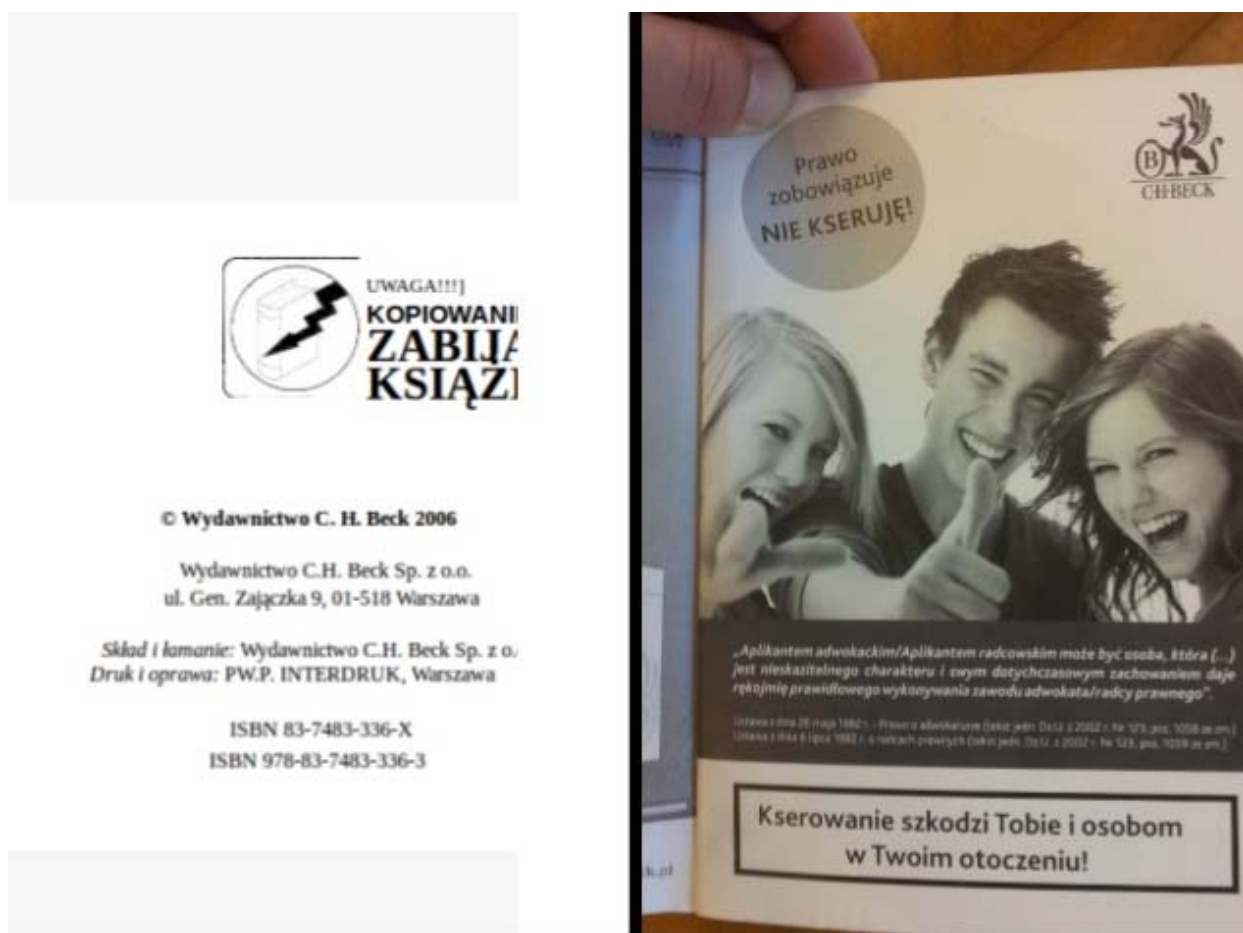
Figure 2. The page of a book published by C.H. Beck.

A campaign run since 2002 by the Polish Scientific Publishers "Cheaper than copying" (*Taniej niż ksero*) offers the solutions that promise benefits for both sides. A book worth between 70 and 80 złotych can be purchased for 30 to 40 złotych, which is less than the price of copying a whole book. During the first year of implementation of the initiative the number of textbooks purchased increased by 33,000 and reached 56,000.

The Ministry of Science and Higher Education is aware of the problems. In June 2012, representatives of the Section of Academic and Scientific Publishers of the Polish Book Chamber (*Sekcja Wydawców Akademickich i Naukowych Polskiej Izby Książki*) met Daria Nałęcz, Undersecretary of State in the Ministry, who was in favor of full openness of works produced with support of public funding. She formulated the objectives for a revision of the legislation regarding the funding of academic textbooks. In late December 2012, the Ministry published draft amendments for consultations. The Ministry decided to fund publishing the best versions of national textbooks, first translation of foreign textbooks into the Polish language, and revised editions of prominent academic textbooks. If a book is published for the first time, both paper and electronic versions can be funded. In the case of revised editions of textbooks, only electronic versions are funded. One of the criteria for allocating funding for academic textbooks is the compliance of the content with the requirements of the educational programmes developed in accordance with the National Qualifications Framework for Higher Education (*Krajowych Ram Kwalifikacji dla Szkolnictwa Wyższego*). According to the regulations, the publishers who get funding for a textbook are obliged to deposit an electronic version of the textbook in PDF format at the National Library of Poland. Electronic versions of textbooks will be made available at the digital platform for interlibrary exchange. Furthermore, publishers will be required to use the digital formats that allow reading a textbook on desktops or mobile devices, as well as uploading converted files to the digital platform or a repository. These actions would not require any additional efforts from the publishers because they already offer academic and scientific publications as e-books. A recently launched service IBUK Plus offers access to over 3000 academic textbooks from tens of publishers in all disciplines. For a fee of 99 złotych a student can use any 25 books during one semester (five months). In addition, each student can print out 20% of books added to the IBUK Plus account.

Consultations for the proposed amendments to the legislation completed in early January 2013. However, the final version of the document is not yet available at the time of writing. The amendments are aimed at increasing the accessibility of academic textbooks for students which, in turn, would open access to education for students residing in the regions where the educational institutions are few. Applying the rule that publicly funded textbooks should be publicly accessible without any additional charges is fair in every respect. However, the legislation lacks any specification of how students can use electronic versions of textbooks (download them to their personal computers, print the whole book or fragments, use a digital copy and add notes, etc.). The publishers warn that the files transferred to the National Library of Poland might be used in an inappropriate way.

Furthermore, some directives of the Ministry of Science and Higher Education in a few years can impact the approach to the development of educational resources at the academic level. One of these documents is a directive of the Ministry of 25 September 2007 and its amendment of 2 November

2011, which specify the requirements that have to be satisfied to deliver university courses in distance mode. The directive allows delivery of 60% of the total number of academic hours (as specified for each educational programme for particular subjects and levels of study) in the form of e-learning. Apart from provision of legal support to the activities which were already in place in the academic community, the legislation also indirectly touches on the issue of educational materials which teachers can use in their e-learning courses. Of particular interest for the academic community are the widely discussed issues of copyright, the range of allowed practices and forms of use for educational purposes, and, also the subject of using resources created by other authors under the Creative Commons licenses. The use of already available digital resources has expanded as Internet is increasingly used for education purposes. Teachers face the need to choose and/or develop educational materials that comply with the new curriculum that was developed on the basis of the requirements of the National Qualifications Framework. In fact, this kind of activity takes place beyond the time allocated to regular teacher activities (apart from extending their skills). Regular teacher training courses do not contain information on intellectual property rights, which results in lack of awareness in these issues. Teachers are willing to use digital resources available online but are concerned that in most cases the materials are protected by copyright and fear of committing plagiarism. They are not certain which classroom activities that suggest the use of new technologies are allowed. Therefore, one of the challenges faced by the academic community during the reform times is also the need to increase the level of awareness of the legal issues related to copyright and to equip academics with the knowledge that will give them confidence in the digital environment and allow them to use Internet resources with the full awareness of their rights and liabilities.

The Ministry of Science and Higher Education started the second phase of reforms in higher education. The Minister Barbara Kudrycka outlined the priority activities for science, one of which is to build a model of "open science" in Poland. In 2011, the Ministry commissioned a report to the Interdisciplinary Centre of Mathematical and Computational Modelling at the University of Warsaw (ICM UW), presumably the topics included in this report can underlie the strategy of implementation of the reforms. The report recommendations include introduction of the Open Access (OA) and practical steps that would help solve many problems, both legal and technological.

2. National Programmes and Initiatives

2.1. Programmes aimed at digitalization of schools and creating educational resources

2.1.1. National programmes for the digitalization of schools

The digitalization of Polish schools is an attempt to use a cohesive approach that would ensure upgrading the infrastructure and improvement of the competencies of students and teachers that would enable them creating and using digital resources. Implementation of this task is complicated by the fact that there is no clear distinction between centralised and regional undertakings, which often results in overlapping of activities. The "Digital School" programme initiated in 2011 gave an impetus to the discussion of the digitalization of schools and to the implementation of the idea. Equipping schools with computers and providing them with access to broadband Internet can be considered as a part of the digitalization process. In most cases this means providing equipment to school computer laboratories and libraries. Establishing e-schools and e-classrooms can be considered as an ultimate target for digitalization.

Massive initiatives in digitization of schools started in the late 1990s, however, the faster progress occurred in 2000-2005 with the introduction of governmental, private and public-private programmes aimed at supplying schools with computer equipment. The most influential programmes are worth mentioning: SBSMEN (implemented in collaboration with Microsoft), Ikonk@ implemented by the Ministry of the Interior (*Ministerstwo Spraw Wewnętrznych*) or European Computer Programme (by Microsoft and Device). According to the data provided by GUS for 2011, computers with Internet access were available in eight out of ten schools and their number, as compared to the previous year, grew by about 0.7 per cent for upper secondary schools (*liceum ogolnoksztalcące*) and by 3.9 per cent for lower secondary schools (*gimnazjum*). While in 2003 about 70% of Polish schools had computer rooms, ten years after all schools are equipped with computers, although there are still problems with Internet access, and the student-computer ratio (as well as the quality of computers) could be improved. However according to the estimates, due to the lack of proper control over the provision and update of IT infrastructure, over a half of school IT equipment is over 8 years old.

It should be mentioned that investments were mainly made in hardware, and only some programmes, for example those dealing with safe use of the Internet, were focused on creation of educational content. At that time educational resources were the area of responsibility of the Central Institute for Teacher Training (*Centralny Ośrodek Doskonalenia Nauczycieli*), which was transformed into the Centre for Education Development. These institutions have been responsible for developing the most important project for digital resources in education — the portal Scholaris.pl.

The change of attitude to digital education became tangible in the course of implementation of the governmental programme "One Pupil — One Computer" (2009) aimed at providing access to a personal computer and to Internet to every pupil. A special task force was coordinated by the Head of the Chancellery of the Prime Minister, Tomasz Arabski. The pilot project was supposed to be implemented

during the academic year 2010-2011 under the supervision of the Ministry of National Education. According to the plan, secondary school pupils would have been provided with laptops and educational software. Initially the programme budget was estimated as approximately 500 million złotych per year, and financing would have been shared by the government and the local authorities with possible contribution of parents. Unfortunately, the programme was suspended in 2009, upon completion of the pilot training courses for 30,000 teachers, which cost the government 16 million złotych. However, the concept, which has already gained public support, in 2011 was promoted through the proposal for the "Digital School" programme.

2.1.2. Regional activities for digitalization of schools

To replace the "One Pupil — One Computer" programme, with the support of European funding obtained by certain voivodships, the "e-School" programme was run. The programme involved local authorities and local universities and was focused on the development of programmes for training in project management and problem-based learning supported by the educational Internet platform. The aim is to connect all schools involved in the project through a so-called "Educational Grid" in a network of schools. The project started on 1 July 2011 and will run 31 October 2014. It covers 105 schools in the Wielkopolskie voivodship, which gain access to the platform, equipment, training and knowledge support. In the projects of e-School type, educational resources are not the key element, but they stimulate presentation and exchange of resources (including the results of student projects) on the common platform through the cooperation between students and teachers. The "e-School" programmes are functioning in the Wielkopolskie, Opolskie and Małopolskie voivodships.

Local programmes of digitalising schools are run independently in many Polish regions. In 2008, the Education Office (*Kuratorium Oświaty*) in Katowice initiated a new pilot programme "Light as a feather" (*Lekki jak piórko*). In Jarocin, the local government allotted funds for hardware for students within the programme "Creative school" (*Kreatywna szkoł@*). The programme aims to deliver 850 computers to schools, optimize school networks, enhance the traffic connection and train teachers. E-classes emerge here and there, as well as initiatives of collecting and structuring digital resources that are created or used by teachers.

As much as 645 pupils and 40 teachers of upper secondary public schools in Wielkopolskie voivodship benefited from the pilot project "eTornister" (eSatchel) which provides small tablets with uploaded textbooks for the Polish language, math, music, both exercises and reading materials. The tablet enables wireless access to the Internet, but only to the wikipedia page in Polish and English. The project advantages are as follows. Firstly it makes school bags less heavy. Secondly, psychologists believe that technical innovation can motivate children to study, encourage interest in science and self-study activities, etc. The pilot project was supported by local authorities, Polkomtel, Mobile Box, MAC Publishing Company Education and CTI. The project was awarded the Marshal Prize «i-Wielkopolska — Innovation for Wielkopolskie voivodship».

In recent years, the process of digitalising schools and modernising education through an expansion of resources and e-learning became the subject of a profound debate among experts in many disciplines.

The report about the information society prepared in 2009 by the Parliament Analysis Bureau provides an overview of different e-school concepts and of their impact on the final concept of the "Digital School" programme.

2.1.3 The "Digital School" programme

Since 2011 the efforts aimed at digitalization of schools have been resumed through a centralized "Digital School" programme. Thanks to the financial resources obtained from the planned allotments for UMTS network use, the Ministry of Infrastructure offered to spend the funds from the concession fees (as stated in the statute justification):

1. Investments in the development of the telecommunication infrastructure to ensure broadband access to the Internet.

2. Purchase of broadband-compatible mobile devices for pupils of the first classes of primary school (except for special schools).

Figure 3. Official webpage of the "Digital School" programme (http://www.cyfrowaszkola.men.gov.pl/)

On 2 April 2012, the Council of Ministers approved the governmental programme "Digital School" aimed at developing student and teacher competences in applying ICT. The programme was scheduled for April 2012 — August 2013 and was a pilot stage for the long-term governmental programme (until 2015).

The four components are implemented during the pilot stage:

- **e-teacher:** preparing teachers for teaching, communicating with students and parents, and documenting the educational process using ICT

- **e-textbook**: producing public digital educational resources, also ensuring access to free and open e-textbooks

- **e-school:** providing schools with the necessary infrastructure, especially modern didactic tools

- **e-student**: providing students, especially those at risk of digital exclusion, with access to modern didactic tools.

As a part of the pilot project 380 schools were equipped by hardware (tablets, computers for students, additional IT-room equipment). It is planned to introduce free digital textbooks (under a Creative Commons or another open license) for grades 4-6. Schools that participate in the project received an 80% subsidy for the purchase of computer equipment. To ensure the match of the procurement to school needs, head teachers are given freedom in choosing the equipment and applications from the programme's catalogue.

The programme "Digital School" perfectly fits the priorities set by the European and international strategic documents on the development of the information society, such as the European Commission's "Opening Up Education" programme. The EC programme is underlied by the assumption that ICT in education will contribute to the development of informal learning and self-learning among students and teachers. These strategic trends are expected to support building up life-long learning and better adaptation of the educational system to personalized learning as well as increasing flexibility in the range of competences, which students can attain and develop for better use in their future life and on the job.

The concept of the "Digital School" programme was developed under the supervision of Witold Przeciechowski (representing the Chancellery of the Prime Minister) with the contribution of the experts: Jarosław Lipszyc (Modern Poland Foundation), Piotr Pacewicz, Alicja Pacewicz (Centre for Citizenship Education) and Alek Tarkowski (Creative Commons Polska). At the early stages of the programme the concept was frequently revised. For example, the item related to the requirement to publish educational materials created within the programme was repeatedly discussed and removed at the stage of interdepartmental consultations. It was finally included in the approved version of the programme with the support of the Ministry of Regional Development regarding the possibility of financing it from the funds of the Operational Programme "Human Capital": Open Educational Resources on Creative Commons.

The "Digital School" programme is the first large-scale governmental project in Poland that deals with creation of Open Educational Resources. At the same time, it is the largest government-supported pilot project aimed at the complex digitalization of schools.

2.1.4. Educational resources in the "Digital School"

A set of textbooks for 18 primary-school curriculum subjects will be prepared for the Ministry of Education pilot "Digital School" project by 2015. This task implemented by the Centre of Educational Development (*Ośrodek Rozowju Edukacji*, ORE) has been the topic for intense discussions from the start of the programme. The intentions of promoting open educational resources through the nation-wide programme were criticized by the publishing sector.

The Centre for Education Development is in charge of the e-textbook component, it has organized tenders for all technical and content partners. The project of creating a set of textbooks includes technological component. The Poznan Supercomputing and Networking Centre (PCSS) is the main partner supported by four partners, each being in charge of one content area:

- Education Group S.A.: early education

- University of Wrocław: the humanities

- Wrocław University of Environmental and Life Sciences: life sciences

- Łódz University of Technology: mathematics and information technology

Apart from developing e-textbooks, which are expected to cost 43 million złotych, "Digital School" earmarked funds for creating supplementary educational materials, which will be published on the Scholaris.pl portal. It is important to mention that the tenders were announced twice (the first tender results were cancelled for procedural reasons); some of the publishers decided to boycott the tenders, and participating universities were warned of legal consequences by representatives of the publishers.

2 How much is the state spending on the textbooks?

Ever year the state allocates funds from the budget to textbooks for the poorest students. The investment in digital textbooks and hardware can facilitate a better allocation of those funds.

128 milion zlotych

The amount spent from the public budget in 2012

1 zł

PUBLIC BUDGET

43 milion zlotych

The cost of developing 18 open e-textbooks

Figure 4. National funding for textbooks (Piotr Chuchla, 2012, CC BY)

The second key component, e-teacher, is implemented by one of the most experienced NGOs in the field of training and pedagogy, the Centre for Citizenship Education (*Centrum Edukacji Obywatelskiej*, CCE). The CCE is also a member of the Coalition for Open Education. It publishes some of its materials as OERs and supports opening up the resources developed by teachers.

Electronic textbooks, which will be produced within the "Digital School" programme as "electronic educational resources" for teaching in grades 4-6, will be then "made available on an open public educational portal" and published as Open Educational Resources under Creative Commons licenses. Resources that are works, derivative works or databases will be shared under the Creative Commons (CC) Attribution license or any other free license that provides nonexclusive rights for unlimited free-of-charge use of resources and their derivatives.

The Ministry of National Education is to ensure free access to resources, in compliance with the rules of the Operational Programme "Human Capital", despite the fact that the CC license enables commercial and non-commercial use. This might allow publishers to commercially develop new resources based on the open resources developed within the governmental project. Resources will become available in at least one open format, the full specification of the format will be accessible without any technical or legal limitations. Recent Web Content Accessibility Guidelines published by the W3C organisation will be considered for resources made available on the Internet. Within the framework of developing open e-textbooks and additional educational materials, which are created by the Centre for Education Development, there are preparations underway to make possible the publication of Open Educational Resources on Scholaris.pl. The current regulations of the portal prohibit publishing OER, which should be revised because a set of new e-textbooks is being developed within the «Digital School" programme as OER.
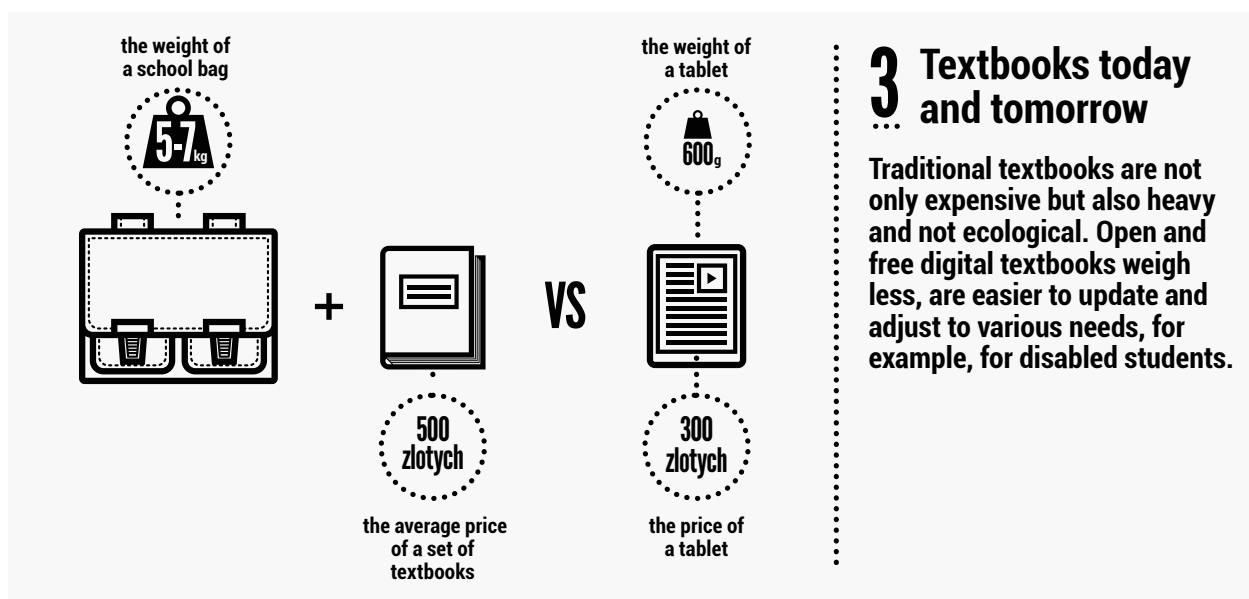
Figure 5. Textbook today and tomorrow (Piotr Chuchla, 2012, CC BY)

Prepared by PCSS and presented in November 2012, the technical concept of the e-textbooks platform includes:

- a multi-platform approach: support for diverse applications and users,

- flexibility: various modes of work (on- and offline),

- modularity: the possibility to generate various versions of e-textbooks and giving access to different functions,

- security: selection and continuous maintenance of the infrastructure, security, technology and the process of production, control and integration of the software,

- scalability: for a growing number of users as well as available digital resources and educational services.

The concept of PCSS project supports the teaching process and enables remote access to e-textbooks (for other purposes than presentation ones). The classic programme foundation and the level of teaching are supposed to ensure the structured connections between the digital resources. PCSS also adopts publishing content in a way that allows using it both by means of the computer interface as well as by simply exporting the content in various formats (for mobile or stationary devices) or printing. According to the PCSS project, the platform should be open for use by anonymous and registered users, registration will allow different groups to present different versions of the textbooks (individualised versions).

In early October 2013, the first modules of Polish open e-textbooks from "Digitial School" programme have been published. They are available online at http://epodreczniki.pl, where the first functionalities of the platform can be publicly tested. The audience of the e-textbook evaluate this first experience as very possitive. The Coalition for Open Education organised a press conference to present the important features of the project related to the dissemination and re-use of the e-textbooks. The Coalition emphasizes the need of clear definition of the legal status of e-textbooks, which will allow to re-use the content in external projects in a proper way. The lack of information on how to comply with the condition contained in the license Attribution Creative Commons Attribution (CC BY) was also indicated.

2.1.5. Criticism of the Programme

Within the first six months since the start of the programme accusations against the institutions and people involved in the programme appeared in the press, as well as those against the deputy minister of education and the coordinator of the e-textbook component of the project. A number of the most prominent publishers formed the "Contemporary Education Alliance" (*Porozumienie Nowoczesna Edukacja*), which arranged opposition to the "Digital School" programme through a spokesman and press releases.

In early June 2012, the Polish Booksellers Association (*Polska Izba Książki*) sent a letter of complaint to José Manuel Barroso, President of the European Commission, to protest against the initiative of the Ministry of National Education to introduce e-textbooks into the Polish education through the "Digital School" programme. In their letter the publishers accused the Ministry of violating the rules of fair competition. The letter blamed the programme for introducing state monopoly and the infringement of the rules of fair competition. The European Commission reply supported the current trends of digitalization of education:

> *"nowadays digital technologies are the source of transformations that influence the public sector and all aspects of functioning in the main branches of economy. It is inevitable that these technologies challenge existing systems of formal teaching in all EU member states".* (Eckert, D., 2012)

At the same time, the Centre for Education Development was audited by the Supreme Audit Office, but the audit conclusions were positive for the Centre (no cases of malfunctioning stated in the press were revealed) and the perspectives of the project.

Furthermore, constructive criticism was offered by the Coalition for Open Education (KOED), whose experts took part in writing the postulates of "Digital School". KOED presented two sets of recommendations to the Ministry of National Education regarding the implementation of the programme. The first set of recommendations refer to ensuring legal and technical conditions which would guarantee that the content developed within the "Digital School" programme will be both open and technically accessible. KOED presented also a variety of suggestions on possible ways of improving the control over the quality of resources developed within the programme. The second opinion was a response to the accusations from commercial publishers and was aimed at presenting Open Educational Resources as an opportunity rather than a threat for the Polish education system and for the publishers themselves. KOED also presented the context in which OER became an increasingly popular model of publicly financed educational resources and stressed the opportunities for the commercial use of this emerging free infrastructure.

2.2. Examples of the policy of openness in other governmental programmes

The "Digital School" programme is the first large-scale governmental programme, which envisages production of publicly funded Open Educational Resources for general education. Although Open Educational Resources are by definition available for everyone to use, the context in which they are developed puts them in the framework corresponding to the specific needs of a target group or standards set for a given field or environment. Previously completed national initiatives were targeted to specific areas or groups of beneficiaries.

This chapter describes the examples of the currently launched or announced grant-funded programmes and projects implemented at the ministerial level. In December 2012, the Ministry of Administration

and Digitalization published the draft of the Open Public Resources Act for public consultations. The Act will regulate the principles of acquiring, sharing and reusing public resources in the fields of science, education and culture.

In education, the Act aims at ensuring free access and the right to modify and reuse the following materials: publicly funded handbooks, resources created by the employees of public educational institutions and resources financed by the Ministry of National Education. In the field of culture the aim is to secure access and flexible rules of sharing. This would mean complete openness of resources created by the employees of public cultural institutions and digitalization of publicly funded resources, long periods of embargo in the case of resources of high commercial value (for example, current public media productions) and the opportunity to charge for the commercial use of resources. Elaboration and finalization of the Act will continue until the end of 2013. Thus, the examples described below should be considered as positive examples, which are ahead of the established practice in the sense that they are in line with the idea that everything that was created at the expense of public funds is a public property.

2.2.1. Education for Poles living abroad

Apart from the "Digital School" programme, the agenda of the MNE activities aimed at promoting openness includes a very interesting project under the working title "Involve Poland!" (*Włącz Polskę*!). This is the first project of Open Educational Resources implemented with the participation of the MEN. Its aim is to prepare and implement innovative teaching programmes for Polish children living abroad. The programme was carried out with the support of the programme "Human Capital: National Cohesion Strategy" (*Kapitał Ludzki Narodowa Strategia Spójnośc*i). The project started in 2008 and was scheduled for 4 years. The first stage finished at the end of 2010; the second stage lasted from January 2011 until December 2012. Initially the project was coordinated by the Ministry of Education, in July 2011 this role was taken over by The Centre for the Development of Polish Education Abroad (*Ośrodek Rozwoju Polskiej Edukacji za Granicą* — CDPEA).

The project "Involve Poland!" was initiated upon the examination of educational needs of Polish expatriates and the analysis of migration during the last years, which have significantly intensified after Poland admission to the European Union. With a growing number of Poles leaving the country together with their families to work abroad for several years new needs emerged among Polish expatriate communities. The priority is to guarantee the continuity of education for children, so that after several years spent abroad they are able to join their schools without the need to compensate for curricular differences. Keeping in touch with a Polish school when staying abroad brings an advantage of preserving contact with the mother tongue and national traditions.

Based on the above needs the Ministry identified the main objectives of the project: (1) to prepare programme documents in line with the core curriculum applied in Polish schools, (2) to prepare a set of digital educational materials relevant to students' needs and adhering to the core curriculum, (3) to equip the staff with the necessary tools and to train the teachers working with Polish students living abroad.

Elaboration of the project documents (core curriculum and curriculum framework) required an analysis of the new national core curriculum for preschool and general education (from 2008) in the light of the needs of students living abroad. This analysis identified specific language competencies, subject areas, reading lists and competencies in history, geography and the natural sciences for various age groups. The programme documents prepared within the project form the basis for the creation of local programmes for learning the Polish language, history, culture, geography and knowledge about contemporary Poland — in other words, subjects which are not taught abroad.

A set of digital educational materials, which are available on the "Involve Poland!" website, was published under Creative Commons license Attribution — Share Alike 3.0 Polska (CC BY-SA). The license allow to copy, print, modify, adapt, localise and convert resources to PDF format for use offline and on mobile devices. The resources are accessible without registration and free of charge.

Figure 6. "Involve Poland!" start page (http://wlaczpolske.pl/)

On one hand the resources developed within "Involve Poland!" are a set of predefined handbooks — a ready set of materials authored by experts. On the other hand, they are a tool for developing new handbooks from the content units using the Ajax mechanism. Because of the diversity of educational needs among Polish students living abroad and the specific character of teaching in Polish abroad, the authors decided that they should be available in the form of modules and units. The units can be freely combined to create a handbook adapted to the needs of a group and a programme. Currently, the database contains 450 units for early education, 400 — for teaching Polish language, 205 — for knowledge about Poland and an atlas of historical maps. These units can be used to make up a total of thirteen programmes: four for early education, four for the Polish language and five for general information about Poland.

The training component of this project served mainly to prepare teachers to work with new materials and to build a network of contacts among Polish schools abroad. 433 trainers, whose task is to support teachers abroad, participated in the training sessions. The project completed in December 2012. CDPEA intends to develop the database and adapt it to the current needs of students and requirements of the educational system. This project is not integrated into other MNE activities, thus the degree to which MNE applies its results in Ministry's initiatives in the area of educational resources is inadequate. The lack of openness hinders attempts to publish the resources at the Scholaris portal due to licensing regulations.

"Cooperation with Poles and the Polish community abroad" is the title of a new competition announced by the Ministry of Foreign Affairs for 2013. The primary objective is to support activities that address the Polish community and Poles living abroad in the following areas: education of the Polish community and Poles living abroad, mobilisation in all areas of life, support for Polish communities, Polish minorities' rights, support for Poles coming back to Poland. The regulations of the competition contain an entry about open publishing, which is in compliance with the competition's regulations of the programme "Polish Development Aid":

> *Recipients of the programme's funding will be obliged to share the results of the project on the CC BY Polska 3.0 license, so that the licensed work could be copied, shared, reproduced and repurposed, and that derivative works are allowed.*

Based on successful practice, the new compeetion of the Ministry of Foreign Affairs is another proof that openness is a part of the Ministry's agenda and regular practice.

2.2.2. International cooperation

For the last three years the Ministry of Foreign Affairs has been opening up public resources and supplementing its grants regulations with requirements to publish project results using a Creative Commons license.

Thanks to the collaboration with Creative Commons Poland, in 2011 the MFA acknowledged for the first time a free Creative Commons Attribution (CC BY) license in the regulations of grant competitions carried out within the programme "Polish Aid". The pilot involving the implementation of publishing regulations on the free license showed that the policy of openness positively influences

the implementation of the projects. The CC BY license was implemented as a standard in all grant competitions of the MFA programme "Polish Development Aid" (*Polska Pomoc Rozwojowa*). The increased transparency of the results had direct impact on the level of the projects. It became an invaluable aid for the grant applicants who got access to a rich database for inspiration and examples of completed projects, as well as a reference for the level of competiveness of the submitted proposals.

Since 2011 open licenses became a standard in the policies of the MFA. Special provisions were included in the regulations governing grant competitions announced by the Ministry, which require applicants who received funding to share all results of the project on the Creative Commons Attribution 3.0 Poland (CC BY) license, so that the licensed product can be copied, shared, played and repurposed, and used in derivative works.

The regulations of "Polish Development Aid" can be considered as one of the best practices. In addition to the provisions regarding licenses, they provide detailed explanations related to the method of marking/tagging the project's results. Moreover, the relationship between publishing under the CC license and the rights resulting from the 1994 Copyright Bill and other related rights are explained:

The license has no impact on the following rights: rights resulting from the permitted use or any other limitations or exemptions from the author's rights; personal author's rights; possible third parties' rights to the work or the way the work is being used, such as the right to the public image or the privacy right. In order to make the work available under this type of license the applicant must obtain copyrights for those works which will be under this license.

This condition was included in the regulations of the grant competitions within the following programmes (as of 15 December 2012):

- Polish Development Aid launched in 2004: nongovernmental organisations, local authorities, state and private higher education institutions, research institutes, the Polish Academy of Sciences and its agencies can participate in the programme. The main priorities are: support for disadvantaged social groups, protection of environment, agriculture and development of rural areas, creation of new work places, public safety and border management, regional development and building the potential of public and local administration, local self-governance and strengthening of local communities, water and sanitary management, education, and others. The projects are implemented in Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine, countries of East-Africa, Kyrghyz Republic, Tajikistan and the Palestinian Autonomy.

- Voluntary Polish Aid launched in 2008: the aim of the programme is to support direct involvement of Polish citizens in aid for the population of developing countries and distributing within Polish society the knowledge about the problems those countries are facing.

- Global Education programme implemented since 2006 supports the initiatives aimed at increasing the awareness in the Polish society about the global processes and challenges in the contemporary world.

Figure 7. Super Science Class webpage (http://lesson.org.pl/)

In the two years of implementation of the programmes by the MFA numerous educational resources were developed and made available free of charge with the right to be reused in an open manner. An example of a project that has to be mentioned is the project (Super Science Class (*Ściśle fajna lekcja*). It combines the activity of the The Partners Poland Foundation (*Fundacja Partners Polska*) and its partners, such as the Copernicus Science Centre (*Centrum Nauki Kopernik*).

The aim of the project is to support teachers in designing interesting lessons and using on-line materials (mainly video) in Biology, Chemistry and Physics. The actions are "directed at providing equal access to the modern open education in order to accelerate social development, provide equal opportunities in education and create international network of people who want to change the world of education." All content (especially interesting exercise scenarios and videos for Physics, Chemistry or Biology studies) are available in three languages: Polish, Russian and Georgian. They were published in accordance with the competition's regulations under the Creative Commons Attribution 3.0 Poland (CC BY) license.

Undoubtedly, the policy of openness in the MFA grant programmes should be praised for applying the most open licensing form, which offers users the highest level of freedom. However, despite the unquestionable advantages of the ministerial programmes, there is a lack of an efficient mechanism to monitor whether the outcomes are published according to the regulations. As a result, the spectrum of

different types of licenses under which the resources are made accessible is very wide, ranging from the free-of-charge model (publicly available with all rights reserved by the grant operators) through open licenses with Share Alike or Noncommercial conditions to licenses that comply with the regulations of the grants competition. Implementing an effective verification mechanism could become an element of the projects' evaluation process and be observed at the stage of financial reporting.

2.2.3. Media and cultural education

Activities promoting openness, although not as systematic as those of the MFA, are currently also supported within the initiatives run by the Ministry of Culture and National Heritage (MCNH). In the last three years the Ministry has initiated two programmes that addressed the issue of publishing the results of the projects as open resources.

The aim of the programme "Education" is to promote artistic expression and creativity, to expand artistic skills and to support research in the field of culture. One of the priorities of the programme is Cultural Education (*Edukacja Kulturalna*), which solicits proposals for funding of activities related to the media education, including creating, sharing under free licenses and piloting of open educational resources in the field of cultural and media education. Additionally the MCNH encourages publishing the results of the projects under free licenses. One of the criteria of evaluation is the popularisation of the results and the documentation of the project in the form of traditional or multimedia publications together with the rights to further use (for example, under one of the free licenses). If the project meets this criterion, it can receive a maximum of 10 points, which equals to 1/6 of the total amount of points that can be awarded in the assessment. This criterion is very important in the programme as it changes the manner of sharing the results of the projects that were funded by the MCNH. The regulations for the future use of the project's results depend on the type of the selected license.

The MCNH does not require but encourage publishing under free licenses. As an exception, in 2012 within one of the priorities of the programme — Media Education; Research — the MCNH required the beneficiaries to make available the results of their research (together with the electronic data that was part of co-funded project) for open access with reference to the Creative Commons Attribution 3.0 Poland license.

Media Education yielded very valuable materials that relate to digital competencies and awareness of author's rights for creators and users. Worth noticing are the activities within the project "Children of the Internet: the communication competences of the youngest" (*Dzieci sieci — kompetencje komunikacyjne najmłodszych*) carried out in 2012 by the Instiute of Urban Culture (*Instytut Kultury Miejskiej*). The main outcome of the project is a report that monitors the state and level of communication skills (related to Internet use) among children aged from 9 to 13 (2nd educational stage — primary school). The report of the research is available under the CC BY license.

At the end of 2012, the MCNH started a new programme "Culture Observatory" (*Obserwatorium Kultury*). Its aim is to reveal extremely important areas of activity in cultural politics through co-funding research projects and projects interpreting data about culture. The Ministry very clearly specified the

beneficiary's responsibilities with respect to open solutions. The regulations guarantee free use of all materials, results and software code produced within this priority without any legal limitations.

The regulations specifying areas of the programme's policy of openness are as follows:

1. The beneficiary shall transfer to the Ministry the project results under the Creative Commons Attribution 3.0 Poland license, including data and databases that were produced on its basis, as long as they are covered by the activities supported by the MCNH funding.

2. If the MCNH funding exceeds 50% of the project budget, the beneficiary shall grant (free of charge) research questionnaires that were produced during the project to the Ministry under Creative Commons Attribution 3.0 Poland license.

3. The beneficiary shall share software code that has been created within the project funded by the Ministry.

The results of the projects implemented by Culture Observatory will be available at the end of 2013.

2.3. Openness and ICT competences in nongovernmental programmes

Nongovernmental sector has been very active in introducing Open Educational Resources in Poland. The first initiatives to develop resources based on the content from the public domain started in 2007 (e.g. *Wolne Lektury*, see chapter 2.2). According to the Coalition for Open Education, which prepared recommendations for rules governing the Openness of Publications for the Nationwide Federation of Non-governmental Organisations (*Ogólnopolska Federacja Organizacji Pozarządowych*):

> *openness is an important feature in organisations acting for the common good and solving social problems. Openness means readiness for cooperation and the transparency of actions; it enables exchange of information and joint production of knowledge. Finally, it allows for an increased efficiency in spending funds by widening the circle of beneficiaries and enhancing positive effects of the project during its implementation. By "openness" we understand, in particular, that organisations open access to the resources they created and the knowledge they accumulated.*

According to the Coalition for Open Education the rule of openness generates only positive outcomes:

> *Openness in nongovernmental grant-funded programmes supports cooperation within the third sector and reinforces the potential of knowledge and good practice. It has also practical outcomes in the form of dramatic increase in the scale, impact and influence of the ideas which are being promoted by the organisation. Open distribution of knowledge and information among organisations facilitates the development of new projects, speeds up the process of implementation and actualisation of knowledge, and finally prevents the duplication of efforts. In economic language, open publications bring significantly higher returns of investments.*

Among programmes focused on forming ICT competences and creating OER two stand out because of their wide range and the rule of openness, accompanied by regulatory policies.

2.3.1. The Orange Academy

Since 2009 the Orange Foundation has been offering grants to organisations dealing with modern cultural education, the Orange Academy. The main objective of this programme is to promote the modern education of children and young people by supporting the innovative activities of nongovernmental organizations, educational centres and cultural institutions. The Foundation supports the projects educating children and young people, explaining that participation in culture provides equal life chances of those who are excluded because of poverty, disability, or place of residence. Schools, libraries, universities, cultural centres, and other publicly financed cultural institutions (such as museums, theatres, cinemas, public galleries) can participate in the programme.

Figure 8. Orange Academy webpage (http://www.akademiaorange.pl/)

Since 2009 the Foundation has organized four competitions. In the first three calls for proposals announced by the Orange Academy, 4.5 million złotych were awarded in grants, and 126 educational projects have been completed, which involved over 15,000 children and young people. The Orange Foundation's programme is innovative and it yields innovative results, e.g. educational programmes and didactic tools containing educational materials which are both innovative and inspiring: publications, on-line materials, class scripts, etc. Materials of the Academy are available in a repository, which can be searched by subject, type of organisation, target group, location of the project and edition. Access to the repository is open; it does not require registration or fees. The Orange Academy supports the idea of Open Educational Resources, all the content is available under the Creative Commons Attribution 3.0 Poland license (CC BY 3.0 PL). This means that anyone may use, modify, repurpose and share them while respecting certain authorship rights.

The Orange Foundation took a decisive step towards open access to project results. The requirement of openness in the regulations is not an encouragement, as in the case of the MCNH "Cultural Education" contest (see 1.2.3), but a liability of project team. An additional advantage is the complete openness of educational materials. The license selected by the foundation is the least restrictive among all types of CC licenses. It gives users of the materials the right to use, change and repurpose the materials.

To promote reuse of project results, in 2012 the Academy grants were available not only for original ideas of organisations throughout the country but also for the projects inspired by one of 120 scenarios available in the repository. This simple procedure enabled organisations, teachers and students involved in the Academy to try adaptation of existing resources to their own needs, localisation to their context in accordance with the Creative Commons license.

The Academy produced an open online course "Authors' rights and publishing work on the Internet". The course provides theoretical support to the Academy participants and helps to learn the programme rules and good project practices. The course consists of (a) an openness test developed by the Coalition for Open Education, which offers an initial diagnostics of openness; (b) a module dedicated to the authors' rights and Creative Commons licenses; (c) a module about publishing content, containing practical advice on how to prepare project presentation, create scenarios for classes and workshops together with examples, how to properly label the materials with the CC license, how to prepare the resources so that they are available for various audiences; (d) knowledge assessment test. The course is accessible upon logging in as a guest (for those who are not members of the Orange Academy), its content is available under the CC BY license.

2.3.2. "School with Class 2.0"

"School with Class 2.0" aims to develop rules for using modern information and communication technologies (ICT) in education. "School with Class 2.0" is managed by the Centre for Citizenship Education and Gazeta Wyborcza, the largest daily newspaper in Poland, with support from the Polish-American Freedom Foundation and the Agora Foundation. The programme started in the academic years 2010/2011 and 2011/2012. In September 2012, the third round was opened. In 2012, "School with Class 2.0" was nominated for a UNESCO King Hamad bin Isa Al-Khalifa award. The nomination was submitted through the Polish National Commission for UNESCO in agreement with the Ministry of National Education.

Figure 9. "School with Class 2.0" webpage (http://www.szkolazklasa20.pl/)

Unlike the programmes "e-School", "One Pupil — One Computer", "Cre@tive School", etc., "School with Class 2.0" does not focus on ICT infrastructure for schools, it is aimed at developing digital skills of students and teachers, teaching how to use ICT in the learning process. Students develop the ability of critical thinking, responsible use of resources and applying their knowledge. According to the most recent report "Children of the Internet" (monitoring of the level of internet skills among children aged 9-13), media education should be provided systematically. The research showed that Polish children, though they live in the world of online communication, are not able to fully use the opportunities offered by the Internet, they often do not know how to protect themselves against threats, they have not fully discovered social media and the potential of publishing their own content. Young people often can, for example, recognise an advertisement but cannot reveal associations hidden in the content and marketing context.

The work in "School with Class 2.0" is planned at two levels: a cycle of participation and a cycle of work in the programme. New schools and "experienced" schools can participate in the programme, which allows for an exchange of experience and draws on the results of work done in previous editions.

The cycle of work in the programme was divided into two semesters in accordance with the academic year. During the first semester students and teachers test the rules of Codex 2.0 and prepare statements which refer to it; they participate in class debate about the main problems associated with the use of ICT at school. One of the keystones of "School with Class 2.0" is student involvement in the educational

process: as part of their classes students have to complete the assignment "We Teach with ICT", where they have to prepare classes for other students. Through this assignment they consolidate their knowledge and skills acquired in the programme. During the second semester students develop an educational project, according to the directive from the Ministry of National Education with effect of September 2010. The project differs from traditional classes: it emphases the students' ability to think independently, choose a topic, plan, coordinate and present the results during Festival 2.0.

In September 2012, the third academic year 2012/2013 of the "School with Class 2.0" was launched. This time the theme was "Cooperation 2.0". One of the new and most important undertakings of "School with Class 2.0" is the creation and sharing of materials. The aim is not only to test the usefulness of selected educational materials and ICT tools but also to accustom teachers and students to the idea of sharing resources and reusing them. Completion of this task is rewarded with badges on the blogs of those students who create and share their materials. To receive a badge one should share three materials, for example, a short guide to making Internet puzzles or an interactive card.

Materials prepared within the "School with Class 2.0" are published in the repository Base 2.0 (*Baza 2.0*). This repository is also a support for students and teachers. Base 2.0 (http://www.szkolazklasa20.pl/materialy) ensures access to manuals, lesson scenarios, tools, assignments, programmes and projects implemented within the programme. The repository is continuously updated. After each round of the programme the Base 2.0 is supplemented with the best projects on the use of ICT, as well as movies placed on YouTube. All the materials are available without logging in. Resources in Base 2.0 are made accessible on various conditions: under Creative Commons licenses, in the public domain, as well as protected by copyright. The repository offers a complex search mechanism: by type of activity, support material, subject, level of education, and license.

3. Open Educational Resources in Poland

3.1. The development of Open Educational Resources: top-down initiatives

Although Poland has an extensive tradition in digitalization programmes, the issue of developing educational resources has not been addressed until recent. The conference organised by the Coalition for Open Education on 23 April 2009 in the National Assembly was the first political action for promoting Open Educational Resources in Poland. During this conference an important declaration of support for OER was delivered by the Minister of National Education Katarzyna Hall, the Undersecretary in the Ministry of Education Krzysztof Stanowski and parliamentary deputies and experts working in the field of education. In 2009, MNE started work on the educational project "Involve Poland!", which became the first MNE-funded service offering open education resources. Official inauguration of "Involve Poland!" took place in 2012, but it has been active since July 2011.

The portal Scholaris.pl was the first attempt to create a database to be used by teachers and, later, also to possibly integrate resources developed. Launched in 2005, the website was supposed to be an answer to the growing need for digital educational resources (for example, lesson scenarios) and multimedia (movies, games, interactive exercises, maps, etc.) not available in traditional formats,

Figure 10. Scholaris.pl webpage

such as paper textbooks and paper editions for teachers. Apart from being a repository of resources ordered and added by teachers, Scholaris enabled elaboration of assignments and test for students, which they can complete after logging in to the website. From the beginning the website also offered multimedia e-lessons or sets of multimedia subjects linked to assignments. Resources and e-lessons on the Scholaris can be divided into those addressed to students and those addressed to teachers, as support for their classes. In the early years the Scholaris was very popular among teachers as similar resources on the Internet were few.

With time the website became less popular, due to the emergence of commercial and grassroots websites with educational resources (for example, *Polski Portal Edukacyjny Interkl@sa*). The portal was not able to respond to users' rapidly changing requirements, despite two attempts to restructure it. Both attempts faced sharp criticism from experts involved in new technologies in education (Sysło, M., 2011). The portal was undergoing changes that were implemented by two commercial companies active on the market with similar products, i.e. Young Digital Poland. Presently the website is undergoing its third round of upgrade, which is supposed to adapt it for incorporating resources developed within the "Digital School" programme.

The example of the Scholaris.pl is a good illustration of the numerous problems that were encountered on the way to promoting open educational resources in Poland in recent years. Scholaris, which is currently managed by the Centre of Educational Development (*Ośrodek Rozwoju Edukacji,* ORE) that is now in charge of the implementation of the open e-textbooks project "Digital School", has already had a chance to become a website that is open to educational resources developed by teachers and that integrates open educational resources. In 2011, the ORE started working on new regulations. Despite consultations they accepted a solution that prohibits sharing educational materials published under open licenses. This solution did not apply only to nongovernmental organisations and educational institutions, which were developing those materials, but also to educational publications financed from the governmental budget through public institutions. According to the new regulations teachers and organisations could place materials on the Scholaris website, but only granting exclusive copyrights for those materials to the website.

At the same time the Ministry of National Education was already developing the project "Involve Poland!", while the Ministry of Culture and National Heritage and the Ministry of Foreign Affairs were introducing open license requirements into the condition of their calls for proposals. However, the materials created within the abovementioned governmental projects could not be published on Scholaris solely because of the nature of its regulations. During consultations about the new regulations adapted by the Centre of Educational Development, the Coalition for Open Education pointed out to the need to analyse if there is conflict between the initiatives of various public institutions associated with education. As of spring 2013, the changes enforced by the "Digital School" programme (see Chapter 1.1.4) made it possible to upload educational resources under any license without the obligation to grant the exclusive license to the operator of the website. Appropriate revision of regulations should enable Scholaris to play the role of a national platform for educational resources.

The "Digital School" programme, considered in Chapters 2.1.4 and 2.1.5, finally brought about radical change in fragmented and inconsistent approach to educational resources. Over two years of consultations resulted in obtaining funding for a set of e-textbooks, but also in a change of approach to open resources at the Ministry of National Education. During the official meeting of the Coalition for Open Education Minister Krystyna Szumilas declared that her department would revise its policy and publish Open Educational Resources in all areas of activity, not only within the "Digital School" programme. This programme and the MEN actions in advocating openness, should help Poland to meet the objectives set up by the newest educational strategy of the European Commission, "Opening Up Education", which says:

> The quality of education relies on a mix of different educational materials. To achieve this, wider access and use of OER needs to be accompanied by clear quality standards and mechanisms to assess and validate skills and competences acquired through it. Education and training institutions which have not yet integrated OER should also seek cooperation with technologically more advanced educational providers in order to meet the expectations of digital-born learners.

Another milestone was to define in more detail the conditions and possibilities of applying free licenses within the framework of the projects funded through the Operational Programme "Human Capital".

Table 1. Budget of Priority III (Structural funding for education) for 2007–2013 (in EUR)

Priority III	In total	EFS	Priority/in total	National resources
High quality of the educational system	1,006,236,268	855,300,828	8.8%	150,935,440

In Poland, a significant amount of educational programmes, ranging from research and development to education and training for educators, is funded by this programme. Open e-textbooks in the "Digital School" programme are also funded from this programme. At the same time, it is one of the most difficult programmes in terms of interpreting copyright regulations within EU programmes. Many of the grant beneficiaries opted for full copyright protection or for a license with an NC (noncommercial) condition due to complex regulations governing the prohibition of commercial use of developed resources. At the same time, closer study of the regulations suggests the use of free licenses (CC BY or CC BY-SA) as the most effective way of realizing the programme main objectives. The prohibition to gain commercial benefits (commercialization) from the resources produced at the expense of grant money is often confused with the prohibition of the commercial use of the resources by the beneficiaries of the project. In 2011, a report on this topic was commissioned to two prominent lawyers, Janusz Barta and Ryszard Markiewicz (Jagiellonian University). The report was published only in early 2013, together with a handbook (by Ministry of Regional Development and Ministry of National Education) about the authors' rights in programmes funded by the Operational Programme "Human Capital".

3.2. Development of Open Educational Resources: grassroots initiatives

The first initiatives for promoting Open Educational Resources in Poland started less than ten years ago. Since 2004 educational projects promoting openness were mainly carried out by nongovernmental organizations as a response to governmental initiatives.

A pioneering initiative aimed at development of educational resources for students, teachers and parents was undertaken by the nongovernmental programme "*Interkl@sa*". It was launched in 1998 as a national programme for information society, whose objective was providing schools with the necessary infrastructure.

Figure 11. Polish Educational Portal "*Interkl@sa*" (http://www.interklasa.pl/portal/index/strony)

The Polish Educational Portal "*Interkl@sa" (Polski Portal Edukacyjny Interkl@sa*), launched in 2001 and a year later supplemented by resources from the Eduseek website, became the largest educational platform in Poland by that time. "*Interkl@sa*" resources include over 5000 educational materials. They can be used free of charge, in accordance with regulations governing private and educational use. Since 2001 "*Interkl@sa*" has been awarding the *Interkl@sa's* Sign of Quality (*Znak Jakości Interkl@sy*), which promotes schools that prepare children to live in the information society according to EU standards. In 2013, "Interkl@sa" will take into account the openness criteria suggested by the Coalition for Open Education in their own criteria for awarding the Sign of Quality. This is a very important step because the "*Interkl@sa*" competition has a considerable impact on school activities actions, and other schools willingly copy the models prepared within this programme.

"*Interkl@sa*" is noteworthy for the pioneering character of its activities. The year 2010 was the time of breakthrough in making the website resources open. Due to the emergence of *Fundacja Polskiego Portalu Edukacyjnego Interkl@sa*, the website is constantly updated. The foundation's charter allows obtaining MNE funding for the project ("Competences in media are the key to success of the young generation" (*Kompetencja medialna kluczem do sukcesu młodego pokolenia w społeczeństwie wiedzy*). The results of this project, such as online training materials on media education, are available on "*Interkl@*

Figure 12. Biblioteka Internetowa Wolne Lektury webpage

sa" platform as Open Educational Resources under the Creative Commons Attribution Non-Commercial 3.0 Poland license.

The "*Interkl@sa*" website has undergone many transformations from the moment of publishing resources to the moment of releasing the first materials under the Creative Commons licenses. In the meantime nongovernmental organisations became very active and started to implement programmes to promote and develop Open Educational Resources. In 2004, the Modern Poland Foundation (*Fundacja Nowoczesna Polska*) established Free Readings Internet Library (*Biblioteka Internetowa Wolne Lektury*).

Among its resources there are almost 2000 works by 120 authors, which are daily accessed by up to 9000 users. The Library includes educational materials recommended by the Ministry of National Education, which can be used without paying fees or setting up an account. The foundation focuses mainly on editing texts that moved into the public domain. Since 2002 the foundation has been obtaining rights to protected works, including, for instance, those by Maria Dąbrowska or Miłosz Biedrzycki, which are shared under the free license CC BY-SA. All texts are properly edited: they contain footnotes, literary motifs and are available in HTML, TXT, PDF, EPUB, MOBI, and FB2 formats. There are also a few hundred audiobooks (available in several formats, for users who have reading difficulties).

In 2005, the Polish section of Creative Commons was established, joining the international Creative Commons community, which has branches and sections in about seventy countries. At the moment, the *Centrum Cyfrowe Projekt*: Polska and Interdisciplinary Centre for Mathematical and Computational Modelling (ICM UW) are its institutional partners. Thanks to the active involvement of CC Polska and to its cooperation with lawyers, Creative Commons licenses have been translated into Polish and analysed with respect to their compatibility with the Polish legislation. Creative Commons has also prepared the first handbooks about the licenses and their possible applications, and has offered support to people and organisations willing to implement the policy of openness. Since its inception CC Polska is very active in the legal field (the porting of licenses, preparing analyses about the compatibility with the Polish legislation, advising on the application of licenses) and in the area of education (training sessions, cooperation with institutions that use CC in their activities, for example the Orange Foundation, the National Art Gallery Zachęta, and the Ministry of Foreign Affairs).

The Wikimedia Polska Association is one of the most active among nongovernmental organisations. Since 2005 it has been promoting and supporting the projects by the Wikimedia Foundation developed on Polish grounds. The most popular project is the Wikipedia Free Encyclopedia, which is being developed by its users. Wikipedia emerged at the beginning of 2001. Polish Wikipedia has almost 1 million entries, created and developed by over half a million users, and their number is constantly growing. Wikimedia Commons, second in size foundation project, was initially created as a repository for multimedia files for various Wikipedia language versions. Presently it is the largest collection of pictures, graphics, models, movies and music on the Internet, all of them being available under free licenses.

Among other projects worth mentioning are the activities of the wiki community in the area of creating books and textbooks, known as WikiBooks — library of free textbooks. The Polish version has 6000 pages of texts. A project derived from this initiative is a library of books and textbooks created for children: Wikijunior. The Wikimedia Polska association also runs projects for the development of a community gathered around open resources and related activities. Since 2006 they organize a yearly conference, Wikimedia Polska, which aims at the exchange of experience among users who participate in developing Wikimedia projects and deal with open software and free access to knowledge. Wikiekspedycja exists since 2009, and its objective is to photograph various places in Poland and around the world to illustrate Wikipedia entries. In 2011, the Association launched a competition "Wiki likes monuments" (*Wiki Lubi Zabytki*) and organised a mobile gallery of the photos — winners of the Polish competition.

Figure 13. Wikibooks — library of free textbooks webpage

3.3. Role of the Coalition for Open Education

The emergence, at the end of 2008, of the Coalition for Open Education (KOED) was the consolidating event for projects advocating openness implemented at the time. The Coalition for Open Education was created through the initiative of four institutions: Modern Poland Foundation (*Fundacja Nowoczesna Polska*), Wikimedia Poland Association (*Stowarzyszenie Wikimedia Polska*), Polish Librarians' Association (*Stowarzyszenia Bibliotekarzy Polskich*) and Interdisciplinary Centre for Mathematical and Computational Modelling (*Interdyscyplinarne Centrum Modelowania Matematycznego i Komputerowego Uniwersytetu Warszawskiego*). Since 2009 the Coalition has been funded by the Open Society Foundation, which enables it to be actively engaged in shaping of openness policies in Poland.

Figure 14. Coalition for Open Education webpage (http://koed.org.pl)

The Coalition objectives are actions that support, promote and expand the area of Open Educational Resources. KOED main activities can be grouped into three categories. The most crucial, from the point of view of the development of openness in Poland, are activities that shape the policy of openness. This is also the most dynamically growing direction of activities. Since 2009 KOED members have prepared 29 position papers, opinions and recommendations, 23 of them — in 2011 and 2012. This reflects the scale of development and intensity of the phenomenon of opening up resources in Poland. The KOED works both on the level of governmental policies as well as on the level of nongovernmental and public institutions. KOED contribution to the consultations about the foundations of the governmental "Digital School" programme is the most important achievement on the governmental level. The Coalition has prepared two position papers and approaches for the programme and recommendations for the e-textbook component, which include legal, methodological, technical, financial and organisational aspects. An important step for the promotion of open education was a petition in support of free textbooks prepared by the KOED. The petition was addressed to the Prime Minister and the Cabinet. It catalyzed changes in the Polish educational system trough making school textbooks available on the Internet and initiated a petition stating that all publicly funded educational materials be made available online for unrestricted use. 3000 people signed

the petition. The demands included in the petition were backed by Róża Thun (MEP), Adam Bodnar (Vice-President of the Board of the Helsinki Foundation for Human Rights), Beata Chmiel (Obywatele Kultury), Lidia Kołucka-Żuk (Executive Director of the Central Eastern European Trust) and all KOED members. The petition contributed to creating positive attitude towards open resources and was a response to the activities of commercial publishers who acted against the ideas of openness in "Digital School".

The members of the coalition are actively responding to every proposition for a new statute or regulation, which involves regulations governing access to knowledge. The KOED and its members are strongly involved in consultations about governmental projects such as "Laptops for school starters" (*Laptop dla pierwszaka*) and "Pact for Culture" (*Pakt dla Kultury*), a project to establish the basis for legislation regulating open educational resources or a decree regulating access to public information. Institutions belonging to the Coalition, but representing the academic world, took a position in the public debate about projects for revising the acting regulations (for example those governing the funding of science), the European Research Area (ERA), free access to science. They also prepared recommendations on openness in academic community.

For five years the Coalition has been defending the public domain by publishing opinions and writing letters to the Ministry of Culture about the definition of the public domain according to the National Audiovisual Institute (NINA) in Wieloletni Programme Rządowy Kultura+ or Instytut Książki. The Coalition actively monitors the case of the literary legacy of Janusz Korczak, a Polish pedagogue, medical doctor and publicist who was murdered in the concentration camp at Treblinka in 1942. According to the Polish legislation governing art in force since 1 January 2013, his works should enter the public domain. However, this process was blocked by the actions of the publisher Instytut Ksiazki. In March 2012, the KOED sent a letter to the publisher asking to specify the date when the works of Janusz Korczak will enter the public domain and to provide the legal basis for their decision to extend the copyright. Independently of KOED the Modern Poland Foundation has appealed to the family court in Lublin to declare the official date of death of Janusz Korczak to officially confirm the expiry of the copyright on his works.

The Coalition cooperates with public institutions that assist them in opening up resources, for example, the National Art Gallery Zachęta *(Zachęta Narodowa Galeria Sztuki)*, which set up a service with open resources under the CC BY-SA license in 2011.

Another line of KOED activity is education and training: organising regular openness courses, which are supposed to create a network of activists and openness coaches all over Poland, who will implement open models in their own institutions and train people in their region. So far the KOED has trained over 100 activists, many of them are running openness projects in their own organisations.

The KOED promotes openness by organizing events that emphasize various aspects of openness and participation in educational-related cultural events. For five years the KOED has been organizing yearly celebrations of the Public Domain Day. It also coordinates Polish events within the international Open Access Week. For two years the Coalition has been coordinating Polish events as part of the global Open Education Week. Within their educational and promotional activities, KOED members produce

practical guides, handbooks and reports about openness, open educational resources, and legal and technological aspects, all of which are available as open resources on the KOED website and distributed during events, conferences or training courses.

Participation in the KOED activity is open for all nongovernmental organisations and institutions dealing with education, science and culture. Between 2008 and 2009 the KOED, apart from four founding organisations, had only three members. In 2011-2012, ten organisations joined the Coalition. After five years of activity the Coalition members are 19 organisations (as of January 2013) representing diverse areas in which openness is promoted. Using the recommendations for open models of publishing the Coalition is reaching out to the widest possible group of recipients who can implement the openness policy in their institutions or practice conscious use of the cultural products in the future. The KOED is also an umbrella for those organisations which cooperate in order to reach a common objective. It includes organisations and institutions whose activities vary in their degree of openness. Some organisations opt for full openness, applying all free Creative Commons licenses to the results of their projects. The others keep a less liberal position or stance and use open licenses with an NC or ND condition.

Although the Coalition often promotes the development of the most open resources (legally and technically), its members are aware that the process of creating such resources is difficult, requires time, supporters and an understanding of the role openness plays in innovation and the development of the country. Thus, the Coalition approves gradual openness of knowledge and information which facilitates cultural participation. To make the process of education easier, the KOED designed a pyramid illustrating the openness of resources in a legal context.
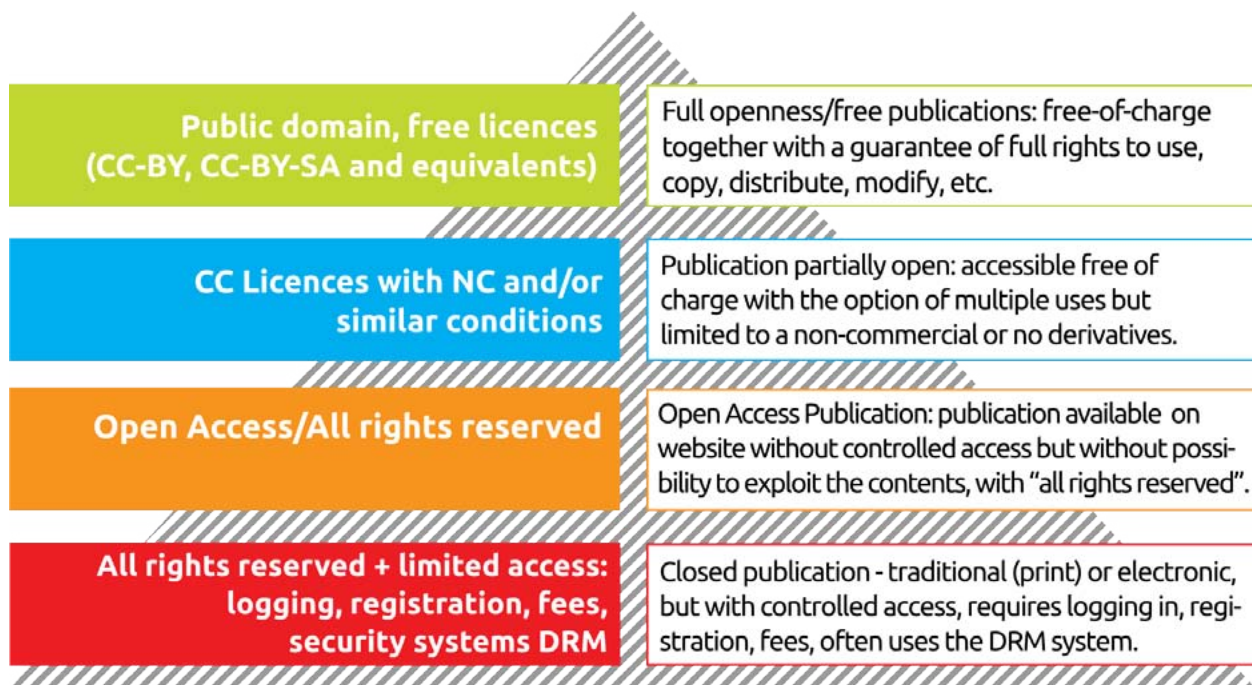

Figure 15. Piramid of openness (KOED)

3.4. Recommendations for creating and using Open Educational Resources

In the context of strengthening the trend to open public resources and materials created by nongovernmental organizations since 2009 it has been possible, mainly thanks to the actions of the KOED and its cooperation with other actors of the nongovernmental sector, to build a conceptual framework for the development of OER in Poland.

From the very beginning the Coalition for Open Education fulfilled its mission — promotion of Open Educational Resources according to definition formulated in the Cape Town Open Education Declaration. The defined aims and methods of the OER movement are in the spirit of this declaration, which the KOED has translated into detailed recommendations for Polish setting during the recent years. One of the first actions was to formulate a recommendation for the non-governmental sector, prepared for the largest Polish umbrella organization, which unites 124 foundations and associations — the Polish Federation of Nongovernmental Organisations (*Ogólnopolska Federacja Organizacji Pozarządowych*, OFOP). The recommendations were developed as guidelines for openness aimed at two target groups: donors, who wish the resources produced with their support to be open, and grant recipients using public funds. The KOED and OFOP recommendations suggest the possibility of increasing the efficiency of donor funding: by applying the requirement to grant a free license for the results produced by the recipients or by awarding openness in grant-funded programmes, for example by assigning additional points during the evaluation of proposals.

In the case of recommendations for the recipients of public funding they suggested a moral duty to share publicly funded products under free licenses, even if such obligations are not stated in contracts and regulations. In their recommendations of 2010 the KOED and OFOP went beyond the space of Open Educational Resources because a discussion about the wider aspect of open public resources emerged at the time. Apart from preparing recommendations, OFOP-related media launched the Open up (*Otwórz się*) campaign, which was aimed at explaining to nongovernmental organisations the advantages of opening up their resources and implementing their recommendations.

Members of the KOED connected to the academic community compiled recommendations for openness in the academic world. The recommendations were addressed to academic and governmental institutions, universities and their management, academic librarians and grant donors and sponsors of science. The recommendations are oriented towards the nongovernmental sector but they refer to sharing research results, articles and academic publications through open access. These recommendations were developed in 2010, therefore they do not refer directly to the accessibility of academic textbooks, although the recommendations for allowing public access to all results of publicly funded projects can be definitely imposed to textbooks.

It is worth mentioning that at this stage the Coalition for Open Education prepared parallel templates of agreements for granting licenses and for legal agreements which would include guarantees to make

the resources available under free licenses according to all standards of Web Content Accessibility Guidelines 3.0.

Since the initative run together with OFOP and the recommendations for the academic community were parts of one plan, consecutive initiatives of the Coalition for Open Education were a result of the growing criticism of open educational resources by the publishers willing to block the "Digital School" programme. The KOED presented two positions articulating recommendations for implementing the programme to the Ministry of National Education. These recommendations were accepted by MEN. The first recommendations referred to assuring legal and technical conditions to guarantee that the content created within the "Digital School" programme would be both open and technically available. The Coalition noticed that the Polish government decision to implement the programme is positively commented on and appreciated by education-related organisations, including those based abroad. Thanks to these decisions, Polish education appeared on the global map of initiatives focused on Open Educational Resources, along with those developed by the governments of the USA (California, Washington, Utah, Florida) and the Netherlands since 2009. In the Netherlands, a national repository Wikiwijs with open educational resources prepared by teachers has been launched. Also, there is the support and promotion of such initiatives offered to local governments by UNESCO, which perceives OER as a realisation of the rule of equality as expressed in the Universal Declaration of Human Rights. Through this the KOED has declared its readiness to support MEN as experts in implementing the "Digital School" programme. The KOED's first position paper, due to the prior engagement of the Coalition's members in writing up the programme fundamentals, contained a series of suggestions for possible improvements in the quality management of resources within "Digital School".

The second position paper of the KOED was a response to accusations from commercial publishers against the programme that included arguments in favour of Open Educational Resources as an opportunity (not a threat) for the Polish educational system and the publishers themselves. The KOED presented a broad context and possibilities for the coexistence of OER together with the publishers on the commercial market. Already at the consultation stage the KOED stressed the role of regulations incorporated into the programme, such as specified technical requirements for textbooks, guarantees of possibilities for easy and cheap printing when no facilities are available. To contradict the financial accusations of deregulating the market, the Coalition presented data on the amount of public funding for publishers in the years 2009-2012, which included various programmes, from a "starting kit" for pupils to programmes supporting research and development.

Due to its activities based on preparing openness recommendations for various groups or specific programmes the Coalition for Open Resources became a social advocate. KOED is involved in every activity related to access to resources. Certain KOED members and the Coalition as a whole are invited as experts to debates and consultations on the drafts of programmes, regulations and statutes.

4. An Overview of Polish Open Educational Projects

The overview of the most important or interesting Polish open educational resources is a selection from a growing number of projects, which are implemented mainly by nongovernmental organisations. Some of them are a result of planned activity, others were opened as a consequence of the obligations imposed by grant donors. These two models allow for a deeper analysis and comparison of models of establishing, maintaining, and providing quality assurance for open resources. In the overview we skip presentation of the projects which were described in detail in the previous chapters, such as Wolne Lektury, Akademia Orange, Włącz Polskę, etc. The OER catalogue, created under the auspices of the Coalition for Open Education on their website (www.otwartezasoby.pl) contains more information on Polish and other educational resources.
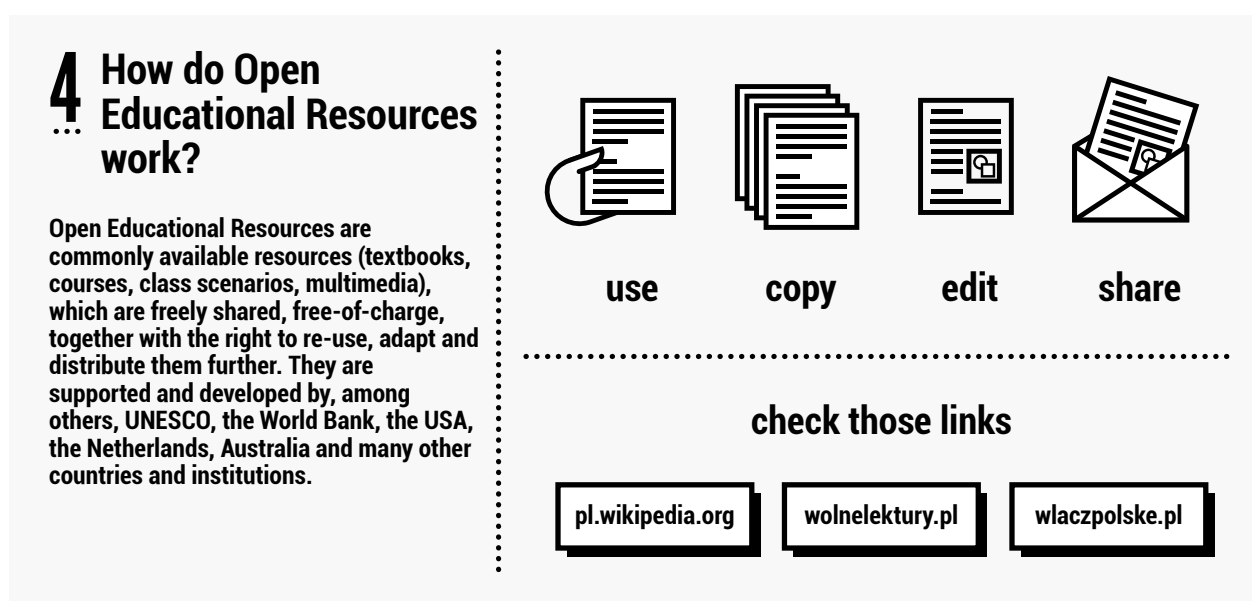
Figure 16. How do Open Educational Resources work? (Piotr Chuchla, 2012, CC BY)

The Database of Didactic Tools

The Database of Didactic Tools (http://bnd.ibe.edu.pl/) was set up by the Institute of Educational Research, a unit established by and reporting to the Ministry of National Education. The database is a collection of assignments for students in such subjects as Polish language, history, mathematics, biology, chemistry, physics and geography; all at the middle-school level. The assignments are developed by expert teachers who contributed to the elaboration of the core curriculum. The service is addressed to teachers and supposed to support their work with students. The objective of the database is to share assignments which challenge students to think as opposed to studying only for tests. After selecting the subject from the top menu, one can browse all of the assignments or search by programme curriculum or use the advanced search option (http://www.bnd.ibe.edu.pl/search).

Cultural education and open resources on modern art

Otwarta Zachęta, Sztuka24h.art.pl and *Mapa Kultury* are websites designed and maintained by the key public institutions in the area of modern art in Poland.

Otwarta Zachęta (http://otwartazacheta.pl/) is a project created by Zachęta Narodowa Galeria Sztuki (National Art Gallery Zachęta), which presents the resources of galleries, art from collections, educational materials, documentation from exhibitions and openings of exhibitions, movies and documentation related to exhibitions. The website serves cultural education, the history of art or research, and caters for simple "visiting" of the Zachęta resources. Most of the materials that can be found there are also available under a Creative Commons — Attribution Share Alike license.

Sztuka24h, which has been founded by the Cracow gallery Bunkier Sztuki, is addressed to teachers, animators and educators interested in education through art. There are lesson scenarios, scenarios for gallery tours, concept dictionaries, presentations, materials for workshops, animations, interactive games for children, educational movies and many other resources.

The website's content and the graphic design of the website are available under the Creative Commons — Attribution Share Alike license 3.0 Polska. On the Sztuka24h website it is also possible to order a free lesson, which will be given at school.
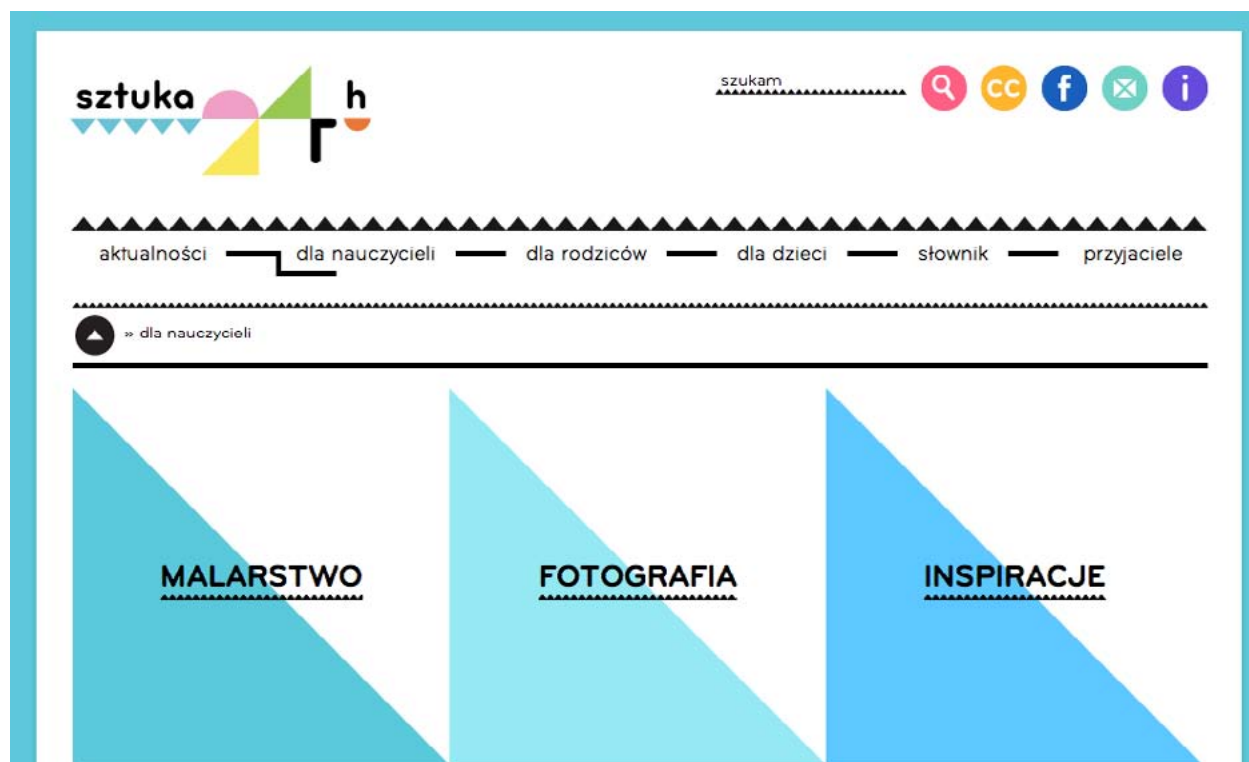
Figure 17. Sztuka24h webpage (http://sztuka24h.edu.pl/)

The website *Mapa Kultury* (http://www.mapakultury.pl/) contains resources for cultural education, developed by the *Narodowe Centrum Kultury*. The Interactive Map of Poland is used as its main tool, which allows to get to know people and various places associated with the culture of Poland's different regions. The map can be developed as a social tool. Everyone can add an interesting description of local traditions, events from their region, note or essay about the history of culture, instances of folk culture, but also of modern or popular culture. The contents published on the website are available under the Creative Commons — Attribution license 3.0 Polska.

Open Resources in life and hard science

In late 2011, a team of the project "Hands-On Universe, Europe" (an innovative programme for teaching astronomy in schools) together with experts from the Polish Science Academy and Google Polska, has started translating lectures and assignments of the Khan Academy. It was possible thanks to the CC BY-SA-NC license used by the Khan Academy, which allows for derivative works.

Figure 18. Polish Khan Academy webpage (http://www.khanacademy.pl/)

Presently the Polish Khan Academy has around 750 movies with Polish subtitles and 200 lectures by Polish lectors in astronomy and cosmology, biology, chemistry, economics, physics, history, computer science, arithmetic, algebra, geometry, probability, mathematical analysis, medicine and health. The list of all translated materials is available on the Polish site of the Khan Academy. It is possible to follow the Polish Khan Academy on Facebook for information about new uploads of lectures available in Polish. On average, 1 to 3 materials are uploaded

added daily. People who are closely working with the Khan Academy in Poland prepare (apart from the materials) sets of exercises for lectures, so that users could verify their knowledge by completing the assignments adjusted to their level. Presently assignments are available for the Mathematics division.

Sexual education

"ABC seksu" is a project which aims to present information about safe sex and STD prevention in a clear and simple way. It is addressed to everyone but focuses mainly on information for women. ABC seksu shares articles, comics and movies which illustrate the issues of sexual education.

Figure 19. ABC seksu webpage (http://abcseksu.com/index.html)

Apart from educational resources, the website provides an opportunity of obtaining advice from experts working with the topic of HIV/AIDS and other STDs for many years. It is possible to contact these experts through the Facebook profile of the ABC seksu project. Materials are available under the Creative Commons Attribution license. The project is organised by the Fundacja Pomoc Socjalna, the Fundacja Edukacji Seksualnej and City Hall Warszawa.

Resources on economic education and entrepreneurship

"Entrepreneurship for ambitious" (*Przedsiebiorczosc dla ambitnych*) and the Network of Innovative Academic Entrepreneurship Education (*Sieć Edukacyjna Innowacyjnej Przedsiębiorczości Akademickiej,* SEIPA) are two advanced university projects developed together with an academic

textbook. Both are already available on the Internet for several years. The websites and the resources they contain are available under the CC BY-SA license: free to use with attribution to the author and allowing for modification under the same license. "Entrepreneurship for ambitious" is addressed to young entrepreneurial initiatives that are especially creative and focus on entering international markets.

Figure 20. Entrepreneurship for ambitious webpage (http://www.cieslik.edu.pl/index.php/ida/3/)

SEIPA (http://www.seipa.edu.pl/) is a complex programme for lecturers and trainers who run educational and training-consultancy programmes in the area of entrepreneurship (especially for subjects not related to economy).

Open academic resources for engineers

Two universities in Poland develop open Educational Resources for engineers. In January 2010, the Akademia Górniczo-Hutnicza launched the Open AGH service, Poland's first university repository of Open Educational Resources. Presently the repository counts over 100 items. These include whole courses, textbooks, assignments, readers as well as single texts, graphics, simulations, course outlines, and audio and video recordings.

Figure 21. OpenAGH webpage (http://open.agh.edu.pl)

The best developed and most visited resources are in physics, chemistry and computer science. The materials are developed by employees, doctoral students and AGH's top students. This last group develops materials under the supervision of course lecturers within the competition "Notes on the Internet".

Further on other universities started to share their didactic materials under the same regulations. The resources of the Department of Mathematics, Computer Science and Mechanics of Warsaw University (http://mst.mimuw.edu.pl), which are used for teaching elective subjects in the third year of mathematics studies, are a good example. Materials are available under the Creative Commons Attribution Non-Commercial No Derivatives license.

A more liberal approach was applied by the Department of Physics at Warsaw University which, within the framework of the project *Fizyka wobec wyzwań XXI wieku*, prepared resources for studies in *Zastosowania Ffizyki w biologii i medycynie* (http://brain.fuw.edu.pl/edu/Strona_g%C5%82%C3%B3wna). These resources are available as a wiki under the Creative Commons Attribution Share Alike license, which significantly increases their usefulness. This approach is much more efficient because it aims not only to share the resources but also to develop them. MediaWiki's built-in tool allows users to print a book from the available resources that is customised to the learner's needs in PDF or ODT format or to download all of the materials as a PDF.

Open academic resources — the integrated university model

For years now, the Nicolas Copernicus University (UMK) has been working towards open resources and organising conferences on open access, as well as maintaining the KPBC digital library, which contains thousands of open digital resources (http://kpbc.umk.pl/dlibra). In 2012, it launched an open educational portal (http://portal.umk.pl/web/otwarte-zasoby), which contains videos of courses and lectures, webinars and materials from conferences and educational meetings.

UMK's activities on behalf of openness have the character of a conglomerate; within its framework UMK's institutional repository (http://repozytorium.umk.pl) and a website for open academic journals, located on the Open Journal Systems platform, were created in 2012. All these resources are supposed to support the education at the university.

Figure 22. UMK open educational portal webpage

Conclusion

Open Educational Resources are currently gaining momentum, both globally and in Poland. After many years of grassroots activities performed by nongovernmental organisations and groups of activists and enthusiasts of modern education (who see OER as an opportunity to support deep transformations in the educational system) the trend has evolved into the commonly accepted standard. However, this does not mean that everyone supports it. The year 2012 was particularly important in terms of the increased pace at which the changes were happening. The predictions for the systematic implementation of programmes that support and develop OER slowly started to materialise and became a reality. UNESCO adopted the Paris Declaration about OER. The US Department of Education accepted a $2 million programme for professional education (including a massive programme of open resources). The Province of Sao Paulo in Brazil and the State of Washington in the USA made a shift to open textbooks. The Polish government decided to launch the "Digital School" programme (and to create open e-textbooks within this programme). This last example is also the first complex governmental programme that creates open textbooks. At the same time, the OER community becomes more connected and networked. At the planning stage the Polish programme was reviewed by an expert of the World Bank, who, on behalf of the organisation, was responsible for making recommendations about national educational programmes. The UNESCO Congress in Paris showed the considerable opportunities for public institutions to cooperate and make use of the solutions developed by nongovernmental organisations all over the world. In its programme "Opening Up Education", the European Commission recommends similar solutions that are based on cooperation and draw on flexibility, an individual approach and the openness of educational initiatives which are being developed outside of the main educational system.

This publication aims at presenting how these trends are reflected in Poland. Because of language barriers Poland often finds itself in a difficult situation during the discussion about innovation and science and is often underrepresented or not adequately displayed. The case of Open Educational Resources is a chance to change the situation, enhance knowledge sharing and facilitate international cooperation involving Polish Open Educational Resources.

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Centrum Cyfrowe Projekt Polska

Centrum Cyfrowe Projekt Polska works towards social change and enhancing citizens' participation through the use of digital technologies and open, cooperative models based on sharing knowledge and other resources. Its projects fall into three main categories: Open Government, Open NGO, Open Culture.

Coalition for Open Education

The Coalition for Open Education, set in 2008, is an association of non-governmental organisations and institutions working in the field of education, science and culture. Its goal is to encourage operation, promotion and activism in favour of Open Educational Resources. The Coalition has strong voice in public consultation process concerning legislation change in education and science, offers trainings and builds the network of openness activists around Poland.

AGH University of Science and Technology is a high-rank university in modern technologies. In 2010, AGH launched "Open AGH" initiative — the first Polish repository of open learning resources for STEM at academic level. Since 2013 AGH has been working on development of open e-textbooks for science, technology, engineering and mathematics subjects in line with the National Qualifications Framework. The release of the first e-textbooks in physics is planned for March 2014.

IITE Publications in OER

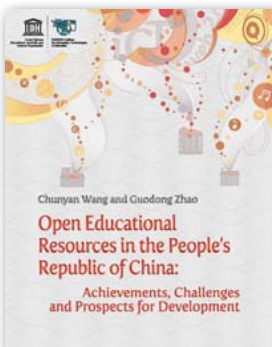**CIS on the Way to Open Educational Resources**
UNESCO IITE, Moscow, 2011
An overview of the use of information and communication technologies in education and prospects of the development of open educational resources in the CIS countries was developed by UNESCO IITE in close collaboration with experts from the CIS countries: Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyz Republic, Moldova, Russian Federation, Uzbekistan and Ukraine. The publication presents the results of analysis of national education policy in particular regarding informatization of education, features of current level of spread of open educational resources, major trends, problems and prospects of development of OER in each country, and the most successful initiatives in the field of open educational resources.
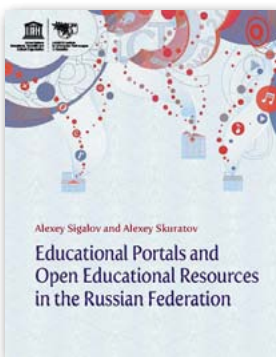
Educational Portals and Open Educational Resources in the Russian Federation
UNESCO IITE, Moscow, 2012
A new survey "Educational Portals and Open Educational Resources in the Russian Federation" (authors: Alexey Sigalov and Alexey Skuratov) has been published by IITE. The book provides an up-to-date survey of the current level of development of educational materials and repositories of educational resources in Russia.

Open Educational Resources in the People's Republic of China: Achievements, Challenges and Prospects for Development
The survey by Chunyan Wang and Guodong Zhao contains analysis of the technological prerequisites for the use of ICT in the higher education of China, governmental and institutional support to the promotion of OER that ensured successful implementation of major OER projects in China, legal and copyright perspectives with regard to OER as well as the summary of solutions proposed by the Creative Commons China Mainland. The authors have analyzed the importance of OER to meet the challenges faced by the educational system; educators' attitude towards OER; obstacles to a wider development and use of OER as well as the measures to be taken in the areas of financing, technology and infrastructure, quality assurance and sustainability, public awareness and promotion, pedagogy, etc.

Open Educational Resources in Brazil: State-of-the-Art, Challenges and Prospects for Development and Innovation

UNESCO IITE, Moscow, 2011

The book "Open Educational Resources in Brazil: State-of-the-Art, Challenges and Prospects for Development and Innovation" (author – Andreia Inamorato dos Santos) has been out of print. This is the second IITE publication within the series of case studies summarizing best practices of OER development in non-English-speaking countries. 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. The book is destined for those who study OER initiatives and projects on a national scale as well as promotion of OER movement worldwide.
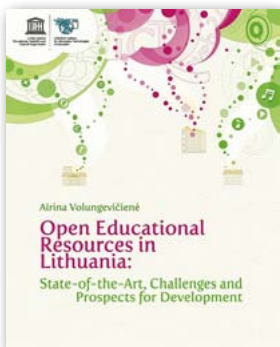
Open Educational Resources in Lithuania: State-of–the-Art, Challenges and Prospects for Development
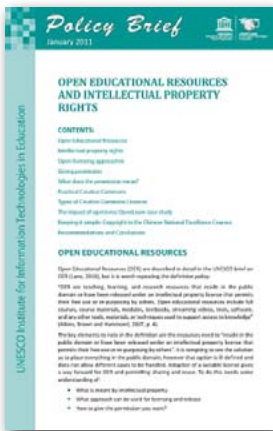
UNESCO IITE, Moscow, 2011

The analytical survey "Open Educational Resources in Lithuania: State-of–the-Art, Challenges and Prospects for Development" (author - Airina Volungeviciene) has been out of print. The publication opens the series of case studies summarizing best practices in OER in non-English-speaking countries. It contains an overview of political and regulatory issues related to OER introduction into educational environment in Lithuania, an in-depth analysis of development of ICT-infrastructure in the country, as well as the examples of the most successful OER initiatives.

Policy Brief "Introduction to MOOCs: Avalanche, Illusion or Augmentation?"

UNESCO IITE, Moscow, 2013

The New York Times labeled 2012 'The Year of the MOOC'. Less than 24 months after the launch of the first massive open online course (MOOC) at Stanford University and with potentially over 5 million students around the world now registered with a MOOC platform, massive open online courses would appear to be a new and significant force within higher education (HE). However, it is still unclear what effect, if any, MOOCs will have on the HE sector in the longer term and whether their explosion in popularity has enough momentum to sustain their method of educational delivery.

This Policy Brief aims to provide a background to the expansion of MOOCs, explain their differences and similarities, identify the types of students using MOOCs, investigate their business models and potential direction, and finally to scope the risks and benefits associated with their development.

Policy Brief "Open educational resources and intellectual property rights"
UNESCO IITE, Moscow, 2011
The Policy Brief describes the core element of OER, their openness, which is expressed through the use of a license that explicitly permits free use and reuse by those other than the rights holders (Bissell, 2010). Simply declaring permission can seem like a small step. However, that small step can have a big impact and help address several underlying problems that emerge when education moves online. Making material open needs an understanding of the way rights works in education and for OER in particular. The Creative Commons license has greatly moved the sharing of resources forward. Even so licensing is only part of the answer, alongside there has to be change in culture and practice to accept some risk in order to achieve the benefits of sharing and openness.

Policy Brief "Global trends in the development and use of open educational resources to reform educational practices"
UNESCO IITE, Moscow, 2010
This policy brief examines the major trends in the development and use of open educational resources (OER). It notes the growing expansion in the quantity of OER and how that is already impacting learners, teachers, educational institutions and governments. It argues that to be truly successful in improving educational opportunity and attainments OER are a necessary stimulus for a broader shift in opening up educational policies and practices. It concludes that such a cultural change needs a wider societal change to thinking of educational resources as largely a public rather than a private good.

Full-text versions of all IITE publications are available for downloading at www.iite.unesco.org

Kamil Śliwowski and Karolina Grodecka

Open Educational Resources in Poland:
Challenges and Opportunities

Edited by Svetlana Knyazeva, UNESCO IITE

UNESCO Institute for Information Technologies in Education
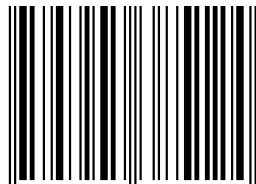
Moscow 2013

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