

# Openness in Higher Education. How to set institutional repository of OER (case of AGH-University of Science and Technology)

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## **Abstract**

Authors explain the openness in the context of education and provide a short overview of the Polish projects aimed at Open Educational Resources development for formal and informal education. They focus on AGH-UST to be the first higher educational institution in Poland which launched institutional repository of OER – Open AGH. Authors describe a set of specific challenges that AGH has to face. Among others, the most important is a decision on appropriate Creative Commons license and choosing a tool for OER management. This paper should serve a starting point for sharing experiences, in establishing new OER repositories, especially between institutions from countries where there is little formal support for such initiatives.

**Keywords:** open education, open educational resources, OER, openness, higher education

## **1. Openness as innovation**

According to OECD report “Giving Knowledge for Free” (2007), the term *openness* has become a keyword for the last decade. Mostly it has positive association with innovation, shifts and progress. Openness can be understood differently in different context. But each time its common sense is about reducing barriers and giving people free and unlimited access to information/services itself and its usage. Tuomi (2006) distinguishes three areas of openness: technology, social and resources. Authors of this paper agree to change the third dimension from resources to law which is, indeed, a key aspect of openness worldwide.

Openness in technology dimension can be provided through reducing limited access to content e.g. login and password requirements, access restriction only to a specific groups, etc. Such closed content is invisible for search engines, thus non-searchable too. Also using open, editable format for digital content, instead of closed, inaccessible, allows for wide access (also for disabled users) and interoperability.

Socially constrained openness is related to an institution or economic aspects. For instance law can limit access as can the prices of access (Tuomi, 2006). Social dimension is also linked with social awareness and understanding of benefits from openness.

The last constraint of openness is law. Currently authors’ intellectual property rights are protected based on the old law system adequate to analogue works and culture. Those regulations are restrictive and provide more limitations than opportunities for sharing and re-using. Alternative law system like Creative Commons licenses which allows an author for defining what user can do with his/her own work seems to be reasonable solution.

Based on above dimensions, it can be said that the idea of openness is built on the common agreement that every citizen should have right and freedom to use and adapt the knowledge which is understood as common property.

## **Open decade**

Materu (2004) claims, that as the 1990s were called the e-decade, the present decade can be called the o-decade. We were witnesses of huge development of electronic services in education, business and commerce. Now new standards are being developed as open source, open systems, open archives, open content, etc.

The openness’ implementation in a variety of fields, has also influenced on education, science and research. Diagnosis of educational trends for 2010 formulated by New Media Consortium in annual Horizon Report (2010), confirms that development of open education

resources on wide scale takes not more than one year. Implementation of open approach to education is also an effect of a great progress in Web services. Last decade, called Web 2.0, make publication process very simple and feasible for almost everyone. Web 2.0 is the technology of participation. Wiki, blogs, social networking services allow for being active "online" user instead of passive recipients who can only search and see what others created. Next to the publication process, fast and easy communication and collaboration is feasible on more advanced level. In that sense, web 2.0 provides a great possibility for educators to work together with common agreement on open publication model. For example wiki can be very effective space for collaboration on open educational content.

Putting own work and sharing it with others, in fact is a matter of several clicks. However it also requires conscious decision and deep understanding the effect of making our work free to use for everybody.

## 2. Why OER are positive?

Web 2.0 has also change the way people learn and behave online. Because the publication process is very simple and everybody can become an author, low quality information and resources can be find on the Web. Today's learners, digital natives, use digital resources as basic source of information. The most popular web page in the Polish Internet is Wikipedia and Sciaga.pl where elaboration of school reading can be found (Lipszyc, 2010). In consequences learners do not read the literature. If situation won't change, the level of education further society are going to be low. For that reason, developing Open Educational Resources that can be used worldwide is a way to provide learning based on high quality resources and guarantee access to information, knowledge and experience exchange.

## 3. Open education in Poland

Open Educational Resources has been a global movement for about last decade. But there is still little awareness of open initiatives among Polish educators. As open source software is widely expected and used in the Polish higher education, the idea of sharing own work to others is rather new and revolutionary approach for academic faculty. In the Polish educational field there is common misunderstanding of openness, which usually meets with groundless argument that openness leads to abandon authors' intellectual property rights and profits. Coalition for Open Education, is a group responsible for shaping and promoting open education in Poland. It organises events like conferences and workshops where the idea of openness, OER and open education is explaining to educators. Currently it has seven institutions associated which launched several open educational projects. Worth mention here is **School Digital Library of Literature** (Szkolna Biblioteka Internetowa Wolne Lektury) with literature obligatory in Polish schools. The library has been developing since 2007 and give not-limited access to literature works that are in public domain (are not covered by intellectual property rights) and are recommended by Ministry of National Education. They are designed in several formats (html, odt, txt and pdf) and commented with information helpful for interpretation. They can be browsed for free, downloaded to a computer and shared with others under a Creative Commons Attribution license. The sister project of that is **Free Textbooks** with main objective here to develop open textbook in line with principles of open culture movement. This means that our common heritage – our knowledge – should be available and open freely for every citizen. Also there is several projects launched by Polish Wikimedia Foundation like as **Wikipedia, Wikibooks, Wikimedia Commons, Wikisources, Wikiquote, Wiktionary** each in the Polish language with content on Creative Commons BY SA. Those projects are also huge educational potential as the content can be used, share and remix creatively by teachers, learners and students.

There are also projects addressed to higher education and scientific institutions. **Open a book** is a digital collection of contemporary scientific books made available online with agreement from their authors. The aim of this project is to bring scientific literature close to the readers. It was launched by the Interdisciplinary Centre for Mathematical and Computational Modelling at Warsaw University, within the Creative Commons Poland and Polish Virtual Library of Science initiatives. **Institute of Biochemistry and Biophysics at Polish Science Academy** has also opened access to own scientific publications. To this initiatives that shapes open education in Poland has joined at the beginning of 2010, AGH University of Science and Technology with OpenCourseWare project - Open AGH.

#### **4. Open AGH**

AGH University of Science and Technology in Krakow is one of the best technical universities in Poland. Established in 1919, this year AGH has celebrated the 90th anniversary of existence. AGH is seen as one of more progressive institution on the Polish educational market, opened for new initiatives and responsive to social, technologies and pedagogical changes. Thus, to continue and sustain such positive image, AGH is the first Polish higher education institution to establish an OER repository. AGH has been a pioneer in a new context.

When launched (January 2010) Open AGH included 70 courses. After eight months that number has increased to 87 courses. Before the official start of Open AGH, some of academic teachers had placed their resources on their home pages or in AGH VLE Moodle, but they were copyright protected. After Open AGH was launched, some of staff agreed to transfer those resources into open repository and making them available on open rules. Additional, the works of AGH students created in the competition 'Notes on the Internet' were a good starting point for developing open institutional repository.

#### **5. Building institutional repository of OER - key aspects**

In this part of the paper authors focuses on key aspects that should be reflect on the stage of planning institutional repository of OER. The effectiveness of such project depends on several strategic decisions. Authors have divided them in the following categories:

##### **5.1 Policy of openness**

Decision about policy of openness is the most important decision in setting OER repository. Choosing right licences for OER is a key to a success. It requires deep understanding advantages and disadvantages of chosen approach.

Coalition for Open Education in Poland has develop openness gradation based on the Polish law regulation (2010). This is a short guide that allow for answering the question: how open my institution is/can be? The first level of openness is public domain (where works are not covered by intellectual property rights) and free licenses (Creative Commons BY and BY-SA) which means that the content can be re-use and adapt for any purpose. Second level is partly openness where Coalition located the rest of Creative Commons which are not fully open and put restriction for instance non-commercial use, not derivative works etc. The third level is open access which is content available online publicly but copyright protected. The last level is copyright protected content with closed access (e.g. located in database that requires login and password).

Above described gradation help institutions make conscious decision on "law" openness. It is also important here to understand the implication of chosen model. The most liberal approach (CC BY or CC BY-SA) guarantees maximum usage of OER without constraints. However if an institution chooses more conservative solution e.g. CC licence with "No Derivative Works" condition, it automatically blocks right e.g to translate. Similar "Non Commercial" condition reduces opportunity for wide distribution of OER to rural areas where there is no Internet connection (materials can not be recorded on DVD/CD-roms and sells even at the very low price).

Having all this pros and cons in mind, OER in Open AGH are available publicly under the terms of Attribution - Non Commercial - Share Alike Creative Commons license. The decision about choosing Creative Commons BY-NC-SA license was driven by academic staff attitude to opening educational materials. While in Poland there is an agreement that fully open educational resources is only those published on license CC BY and CC BY-SA, AGH has decided to prevent from commercial usage of Open AGH resources. This decision gives the academic staff an assurance of not losing financial benefits. AGH authorities are convinced that with a chosen license, employees will be more willing to share their resources.

##### **5.2. Model of repository**

UNESCO OER Toolkit (2009) gives several examples how OER repository can be organised. First example, MIT OpenCourseWare, provides access to 2000 courses, containing syllabus, lectures, exercises, audio/video materials, test and references for further reading. All

materials were created by MIT employees, and are ready to download and use on CC BY-NC-SA license. The second example, Open Learn (Open University UK), provides not only open courses but also opportunity to learn in open virtual learning environment. Open Learn gives students a choice to use only open content for self-learning or become an open students who can participate in students community, use tools offered within VLE, communicate and collaborate within students networked.

At AGH we decided to implement MIT model and currently we provide access to open courses and open materials for self-education with right to re-use and adapt for any, except commercial, purpose.

### **5.3 Type of resources**

Decision about type of resources in OER repository and way of acquire them should definitely be written in our planning strategy. OpenCourseWare Consortium (OCWC) promotes OpenCourseWare which is understand us educational materials developed for educational purpose, while OER are defined as every material that can be used for learning. According to the policy of Open AGH, in repository can be published online courses as well as single documents – syllabuses, e-books, notes from lectures and video recording lectures, simulations, animations, podcasts, etc. The basic rule here is to place recourses that could supports academic teachers in teaching practice.

While choosing financial benefits for employees as a way of acquisition new resources is rather risky one (what if the budget for OER production ends?), direct reaching the potential authors and convincing them to share resources can be effective one. According to the results of survey on OER condition at University of Michigan presented in Hardin's paper (2010), if 30% of employees are engaged in OER development and creation, that can be seen as great success.

### **5.4 Technology**

The basic question to be answered here is what tool can be used for repository platform to be easy manageable on the level of content and metadata. There are several option to be chosen. The question is: should it be dedicated software, open source or proprietary one? Due to the fact that from 2006 AGH staff has been developing their courses on Moodle, this CMS was chosen as basic system for managing OER. Such decision maximised the simplicity of the process of 'opening' resources for AGH academic staff.

Open AGH has separate installation (due to have unique webpage address) and specific configuration in order to allow for access without any limitation (even option login as a guest was deleted). However in future there are plans to transfer Open AGH database to some dedicated content management systems. After 8 months working, several problems were identified. For instance with updating the content, with locating materials manually on separate Moodle installation in parallel to the installation on university institutes' servers, etc. It is though that software only for metadata management would be good solution for AGH where the educational materials are distributed among different Moodle installations.

### **5.5 Target group**

Target group can be understood in two ways. First of all we have to decide who can be an author of OER in our institutional repository. In majority the group is consist of the university employees who are academic teachers and create course materials for students. This is part of their vocational activity that could be transferred into OpenCourseWare. Another group that can make great input are students. Engaging students in developing institutional repository is rather innovative approach which requires additional support and supervision of professors. At AGH we have decided to give students a chance to become part of Open AGH. „Notes on the Internet” is a annual competition for AGH students, who prepare digital educational resources under the supervision of their professors. Best materials from earlier years are already in our repository. This year an amendment has been made to the rules of the contest and it is explicitly stated that all the submissions should be CC-licensed and will be made available on Open AGH. Also OpenCourseWare Consortium has launched new initiatives called Students for OCW (<http://studentocw.ning.com/>) in order to increase the awareness of OCW and promote its use. Students participate through evaluation the course

materials, translations, promotion in their countries as well as collaborate and network with students from all over the world.

Before setting university repository of OER it is worth spending some time for carrying out a short survey on attitude to openness among our further authors in order to receive important knowledge on level of awareness. Based on the results we could plan particular steps and think on comprehensive strategy for OER creation like as internal workshops for employees, promotion, individual contact, etc. Similar research was conducted at University of Michigan (Hardin, 2010).

The target group is also consist of future recipients of OER. We have to decide who can have access to the repository and have right to re-using the materials. It is important decision here and we have to remember the basic principles of being open. Providing differentiation in access or giving more right to a particular group is far from best practice.

### **5.6 Support from authorities**

Without the support of the authorities such innovative initiative like OER repository has little chance of success. Thus, one of our priority should focus on convincing a rector and deens about benefits of such project for the whole institution. Arguments worth remembering here are: prestige of university that makes its education process transparent, high quality of resources (we show what we have the best), lower costs of creating materials, increasing citation rate of employees, etc.

At AGH we have been fortunate that the authorities were interested in Open Educational Resources initiative. Their general attitude towards new ideas is positive. Some of them have even had educational resources placed on the Internet though, it has been still copyrighted. Nevertheless, the idea of sharing results of one's own work for free was not strange to them. (Marković, Grodecka, 2010). This is very important to gain "green light" from the highest authorities.

### **5.7 Support from environment**

Support from external institutions-experts in open education field is crucial at the very beginning. Experts can provide relevant support and find solutions for problems concerning technology, law and resources, as well as can disseminate knowledge of our new initiative.

In AGH case, one of such institution was OCWC, from whom we received not only helpful advice but also an invitation to join the consortium as soon as Open AGH was accessible to public. This assured AGH authorities that our efforts will not be left in void, but that we will be formally linked to an active, international organisation, which can provide us with further help (Marković, Grodecka, 2010). Also Coalition for Open Education in Poland gave us great support while choosing Creative Commons license for Open AGH resources. Effective strategy here can be also looking for the institutions in and outside our own country which have experience in the field and can provide us with valuable advice (Marković, Grodecka, 2010).

### **Conclusion**

Launching OER repository requires thinking on variety of levels concerning technology, law and social attitude and awareness. Strategic decisions for OCW creation on planning stage are crucial for further effectiveness and success. However, success at the beginning won't be constant, if we do not plan further steps concerning development and acquisition of resources and new authors. Success of any OER initiatives depends on people who understand the idea of open education and want to share their work with others.

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