Global Open Education: A Roadmap for Internationalization
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> *To remain successful on the global educational market, Europe needs to engage a broad community in cross-border collaboration towards better education and global outreach.*

Introduction

The main goal of this paper is to stimulate the discussion on **future issues on Open Education** and Open Educational Resources (OER) in a mid- and long-term perspective. The main issue discussed is **how OER are utilized on an international level**.
Open Educational Resources are a hot topic in the communities of education and training – the idea of sharing free and/or open resources has led to various policy and research initiatives such as the EU program on Opening Up Education (European Commission, 2012) and the UNESCO Paris OER Declaration (UNESCO, 2012). However, there is currently no clear view which steps are necessary to bring OER into practice and what the impact on educational systems will be.
Internationalization and global collaboration is a key aspect to Open Education: how can OER be utilized across borders? How can OER contribute towards better education for less developed countries? How can Open Education contribute towards better collaboration in Europe and globally? These are just some questions to be explored and solved in the next years.
As a starting point, we have identified a **variety of barriers** (Clements & Pawlowski, 2012, Pirkkalainen & Pawlowski, 2013) towards acceptance of open education and OER, amongst them: Lack of trust, lack of curriculum integration, lack of IPR knowledge, fear of imitation, lack of policy support and many more. Even though Open Educational Resources (OER) as well as Open Educational Practices (OEP) are promising concepts, they are – in contrast to Open Access or Open Source – still far from being mainstreamed. However, the potentials are clear, in particular for cross-border utilization. Thus, I would recommend two key visions:

1. *Creating a European Open Education community towards collaboration, mutual support and participation.*
2. *Creating global outreach of European Open Education towards European leadership in both, the educational market and development cooperation.*

This paper aims at identifying key issues and potential solutions for international aspects regarding open education. Using a roadmapping methodology, I will propose steps and recommendations for advancing Open Education.

Open Education 2015: Immediate Actions

The initial phase of the roadmap aims at creating a solid base for European collaboration and global outreach. Currently, educators and learners have no clear understanding on 1) availability of OER for their context, 2) benefits of OER, 3) possible engagement. There are no central access points across Europe and no policies in place, both on national and

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institutional level. Community building across Europe is still weak. Furthermore, global outreach is not part of most relevant European programs (such as LLP and PSP programs). As immediate actions, current key barriers need to be addressed, in line with the recommendations of the UNESCO Paris OER Declaration (2012):

Recommendation 1 - Create an inventory of OER and OEP in collaboration with national and institutional stakeholders

It is highly necessary to understand which OER and OEP are available in different regions and languages. Stakeholders need a clear understanding which resources (OER) are available, how they are utilized (OEP) and how people can benefit.

Recommendation 2 – Integrate existing communities across Europe

It is highly necessary to invest in community building to increase collaboration and partnerships. This recommendation is not about creating new communities but integrating existing partnerships across sectors and domains, such as collaboration networks (e.g. e-twinning), sector networks (e.g. European Schoolnet), domain- specific networks (e.g. associations) and related communities (e.g. Open Access, Open Source communities).

Recommendation 3 – Integrate Curricula

One of the key barriers is not necessarily the lack of resources but a lack of knowledge how to find suitable resources for specific curricula. There are currently no possibilities to search for specific curricula parts. This means that curricula must be mapped against each other as well as to OER. This also includes technical aspects such as availability of machine-readable curricula and availability of curricula metadata.

Recommendation 4 – Create regional networks

Curricula and language barriers need to be addressed. One possible strategy is to encourage collaboration in regions which are similar in terms of culture and language (e.g. Nordic countries – for example see the Nordic Open Education Alliance[1]). These regional networks can act as starting points and good practices for cross-border collaborations.

Recommendation 5 – Create Global Outreach Programs

Europe has not yet succeeded in creating broad global interest in their educational resources. The current MOOCs are mainly created by US universities, development collaborations are isolated activities. Therefore, each program and project should be encouraged and enabled to include global partners (e.g. in less developed countries).

Recommendation 6 – Support Open Education Policy Building

The above mentioned aspects need support through policies from educational authorities and institutions. This needs to be encouraged and supported from a European perspective.

The above mentioned recommendations create a basis for European collaboration and outreach – these recommendations are complete but shall serve as a starting point for creating policies. programs and projects as a strong basis for internationalization of Open Education.

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[1] http://www.nordlet.org/?q=position

Open Education 2015-2030: Research Focuses

The second phase of the roadmap aims at identifying research issues which support internationalization, collaboration and outreach based on existing concepts and technologies. Most supportive technologies to advance open education already exist. However, there is usually a broad gap before advanced technologies are taken up in education / educational institutions. This phase therefore aims at utilizing and mainstreaming promising technologies while exploring emerging technologies. The selection of topics below is based on an analysis of key trends and research initiatives at the moment – it does not intend to be exhaustive and complete but provide input for discussions.

Contextualized Open Online Courses

MOOCs are discussed around the globe. However, they mainly serve as marketing for top universities or new business experiments leading to an average of 90% dropout rates. Contextualization of online courses is one of the key to bring this immature concept forward – Europe could be a forerunner of provide contextualization and support services to the general MOOC concept.

Cultural and language adaptation

Almost no OER are available in all European languages. However, automatic translation, multi-lingual metadata ontologies and understanding of cultural adaptation needs have progressed in the last years – large scale projects of cultural adaptation / contextualization are needed to create more insights for this process towards better support. Furthermore, new aspects should be explored such as simultaneous automatic translation (in combination with related topics such as speech recognition) using new devices (see below).

Cross-border collaboration

Even though many communities exist across Europe, support mechanisms for the educational domain are rather weak. Very few teaching scenarios include cross-border collaboration and corresponding support tools. As an example, it is necessary to encourage focused research on utilizing different social software instruments to overcome cultural and language gaps. This should be accompanied by creating cross- and inter-cultural distance learning strategies and scenarios. This will help educators to extend their learning scenarios outside the classroom towards multi-national, virtual classrooms.

Global OER outreach and Education Generics

Each research project on open education should consider global outreach, either to create new business opportunities but also to support development collaboration. This includes the above mentioned cultural as well as technical adaptation / contextualization. Furthermore, it could be discussed how commercial content providers could provide simple / cheaper versions of their materials in development collaboration (as an equivalent to the pharmaceutical industry).

Ambient Intelligence / Internet of Things

Location-based learning solutions have been rather successful already – as a next step, I see a rather wide distribution of Ambient Learning solutions: How to embed learning resources in real objects in real contexts / situations. These solutions need to be improved and mainstreamed from perspectives, technological development as well as didactical scenarios. However, it is rather realistic to predict that in the future most objects (such as machines, art

works, appliances, houses, …) will be able to offer learning scenarios accessible by different devices.

Augmented Reality / Holographic Displays

With recent advances on wearable computing and augmented reality, new communication opportunities will emerge. These should be discussed in the educational context – this also includes combination of real and virtual artifacts.

Big Data in Education

With new devices, many new educational materials will be generated by users (e.g. live recordings of lectures with wearable devices, documentation of learning groups through live video streaming, …) – similar to current trends regarding learning analytics, it will be necessary to utilize new techniques to filter and contextualize massive amounts of user generated raw materials which might be utilized for as OER / OEP.

Summary

The current situation regarding Open Education is promising but needs clear immediate action towards mainstreaming and outreach. This paper has identified recommendations for current actions as well as for future research. As a next step, it is intended to enter the discourse on those suggestions and to transform ideas into actions.

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