The MOOC for Accessibility Partnership (MOOCAP)

Sebastian Kelle

Stuttgart Media University
Responsive Media Experience Research Group

kelle@hdm-stuttgart.de

**Abstract.** In this project, a network of leading European universities has joined together to initiate a transnational education/expertise network on web accessibility. The goal of the project is not just building a network and exchanging knowledge among each other, but to open the field to a wide audience. Notably, the project is focused on the educational purpose, empowering students of computer science and related subjects to master the difficult challenges posed by a growing demand for accessible computer systems. The core component of this project is a series of massive open online courses (MOOC) that is divided into introductory and advanced offers.

# 1 Introduction

In these times, both the often-cited demographic change in Europe (population is in fact shifting towards an older age due to low child birth rates) and the increased omnipresence of digital media demand and substantiate an increased focus on accessibility in ICT. These circumstances, as well as other societal challenges put forth by governmental organizations, are the background in front of which this undertaking spawns. Much has been written about the technical advancements in accessible design for ICT, and there exists a large related body of knowledge. It is therefore of interest not just to preserve this knowledge, but also to pass it onto future generations of scientists and developers, sparking new ideas and laying ground for further innovations. However, this domain currently only exists as a very specialized side-branch of major educational curricula in computer science and its neighboring subjects. It is therefore desirable to raise awareness and widen the “access to accessibility”.

While the primary responsibility for such a goal may rightfully be the affair of individual institutions, the level of impact, knowledge transferability and mutual endorsement is foreseen to profit from a strong network for joint distance education in Accessible Design for ICT.

The purpose of the MOOCA Partnership project is, therefore, threefold:

* Building a sustainable strategic partnership between European universities that excel in teaching and researching accessible design in ICT,
* Opening up the field to a widened audience by providing open education formats, enabling a flexible family- and occupation-friendly access,
* Showcasing accessible design for ICT itself, by providing an inclusive learning environment, i.e. students with disabilities should be able to participate, too.

# 2 Learning Design of MOOCA

The learning design applied in this project is used to implement a joint curriculum framework on accessible design in ICT, by means of massive online courses (MOOCs). MOOCs are an educational format with the advantage of providing a great flexibility and ownership of learning to the participants, at the expense of an increased effort in content production, as well as technical and human effort for hosting and maintenance. There is also a risk of highly fluctuating participation numbers, as there is the phenomenon of “drop-in rate”, meaning, participants that are just registering out of curiosity and dropping out soon after (Schultz, 2014). To balance this risk and effort, it makes sense to apply this educational format in a multi-institutional and trans-national context, which adds stability to individual stakes.

The targeted audience consists primarily of registered students of the partnering universities, as well as professionals in the field, who aim to deepen their mastery using the course in the form of vocational and educational training.

The course offer, however, will also be open to anyone else who is interested in the subject, following the principle of “Open Education” as put forth by the European Commission (European Commission, 2013).

One characteristic of this offer is that the course material will be made available in an accessible way itself. This way, the MOOCA course curriculum is becoming its own production example of the methods explained within. We call this the “accessible reciprocity” of the project.

The components of the course contents are organized into two different main parts (see figure 1). As starting point of the curriculum there is an introductory course module, taking a centered role, opening the learning process. The introductory module is meant to give an overview of the different subtopics, indicating why and in what context they are important.



Figure 1 – Radial learning path, supporting a deep but narrow learning approach.

Coming from the introductory course, participants can then decide which field of specialization to put their main focus on for the in-depth parts of the curriculum. However, there are different types of learners who are not so interested in specializing on one or two topics only, they wish to maintain a broad vision of the subject and are likely to profit from a more holistic learning path. In figure 2, a purely sequential learning part is illustrated. While this is in principle possible (a sequence to meaningfully go through all specialized modules will be suggested), the amount of effort to go through all of the content might result in only a superficial learning experience.



Figure 2 – Sequential learning path, supporting a wide but superficial learning approach.

With these two opposing models for a learning path at hand, a third, more flexible sequencing synthesis of the two appears obvious, uniting both depth- and width-centered approaches. Using scenario or persona- driven storytelling methods for composing different paths through the curriculum, multiple possibilities for a learning path emerge.

Example: the user could use the scenario/persona driven learning path that highlights topics relevant for accessible web design for blind users.



Figure 3 - Flexible learning paths

# 3 Other components of MOOCA

**Evaluation**

Using learning analytics methodologies, learning activities can be monitored. This way the course design can be continuously evaluated for effectiveness. The great quantity of data that can be drawn from a large internationally organized MOOC curriculum can be used to enhance and review the results (Baker & Siemens, 2014).

**Embedding objectives with societal challenges**

The core idea of the project is to set up a series of online courses representing a comprehensive curriculum framework on accessible design in ICT in Europe, and to teach the topic of accessible design in ICT for the following target groups: internal Masters students at the partnering universities in Europe, and external professionals in Europe (vocational education and training). It is an important goal to allow for a large number of students and professionals to be educated in accessible design for ICT.

Also, it is important to foster the education and training of current and future IT professionals in accessible design in ICT (including those working in government agencies), in order to shape an inclusive society without digital barriers in Europe (European Commission, 2010)

One of the most important objectives is to allow for integration of those with disabilities as course participants, and thus increase their chances of gaining or maintaining their place in the employment market (European Commission, 2010; Seale et al. 2010).

In order to sustain the MOOCA partnership beyond the horizon of its current funding scheme, and to lay a competence-based based framework to endorse future incentives, one goal is to develop a roadmap for a European certification scheme for education in accessible design in ICT, and to work towards a common accreditation basis for teaching this topic in higher education in Europe, ultimately contributing to the partnering universities’ strategy of providing vocational education and training.

The project contributes to the partnering universities’ strategy of teaching with accessibility in mind, by providing training opportunities on universal design in learning for lecturers and online course authors (European Commission et al., 2014).

Finally, leveraging the concept of “accessible reciprocity”, a key goal is to advance the state-of-the-art in accessibility for technology-enhanced learning. By offering online courses that are themselves accessible, we aim at showcasing best practices that are informed by user experience in a live context.

# Bibliography

Baker, R., & Siemens, G. (2014). Educational data mining and learning analytics. *Cambridge Handbook of the Learning Sciences:* Retrieved from http://www.columbia.edu/~rsb2162/BakerSiemensHandbook2013.pdf

Elmar Schultz. (2014). HRK-Positionspapier zu MOOCs im Kontext der digitalen Lehre. Beiträge zur Hochschulpolitik. Retrieved from http://www.hrk.de/positionen/gesamtliste-beschluesse/position/convention/hrk-positionspapier-zu-moocs-im-kontext-der-digitalen-lehre/

European Commission. (2010). *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. European Disability Strategy 2010-2020: A Renewed Commitment to a Barrier-Free Europe*. Brussels: The European Commission, COM (2010).

European Commission. (2013, September 25). Press release - Commission launches “Opening up Education” to boost innovation and digital skills in schools and universities. Retrieved October 9, 2014, from http://europa.eu/rapid/press-release\_IP-13-859\_en.htm

European Commission/EACEA/Eurydice. (2014). Modernisation of Higher Education in Europe:  Access, Retention and Employability 2014. Eurydice Report.  Luxembourg: Publications Office of the  European Union.

Seale, J., Draffan, E. A., & Wald, M. (2010). Digital agility and digital decision-making: conceptualising digital inclusion in the context of disabled learners in higher education. *Studies in Higher Education*, *35*(4), 445–461.