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Can user recommendations be useful for improving MOOCs accessibility? A project for inclusive design and profitable feedback

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Abstract

At present there are no applications which include accessibility revisions for Massive Open Online Courses (MOOCs), neither in the context of MOOCs provider institutions nor from the point of view of any Open Educational Resource (OER) initiative. In this paper an approximation to this problem is presented, in the form of a specific web portal which will offer the possibility for any user to freely judge the accessibility of a certain course and advice about the missing means of meeting user needs or required adaptations. This kind of user feedback can be of great value for the future development of MOOC platforms, courses and the educational resources. The development of this web tool will gather valuable information directly from the users themselves to improve the educational quality and accessibility of these learning environments.

Keywords

Accessibility evaluation, MOOCs recommendation, YourMOOC4ALL.

Introduction and related work

Several methods can be employed to evaluate accessibility of websites, including conformance reviews, user testing, subjective assessments and screening techniques (Henry, 2004) and it is reasonable to expect that these methods differ from each other in terms of their validity, reliability, efficiency and usefulness. But little is known to date about the relative merits and disadvantages of the different methods when evaluating accessibility (Sangilbert, Hilera & Vilar, 2013), and also about the criteria to be used to compare them and the metrics that can be used to measure these criteria (Brajnik, 2009). Assuming that different accessibility evaluation methods (AEM) lead to different types of results that reveal different levels of quality it is suitable to use complementary methods. In this sense, according to Brajnik (2008) the approach used during the evaluations can be considered as a methodology which combines the methods of conformance reviews and screening techniques.

In this context, an accessibility assessment procedure using an holistic approach by combining different types of tools has been recently proposed (Iniesto & Rodrigo, 2014 a), scheduled as shown in Figure 1, focusing on the following criteria:

- Performance of a prior evaluation using automatic accessibility tools, such as:
 - WCAG Accessibility Validation
 - Disability Simulators
- Incorporation of User Experience (UX) features with the aid of:
 - Testing Tools
- Adding a final educational content evaluation

Each of the evaluation patterns are developed sequentially, in a way that each new step complements the data obtained in the previous one, giving an overview of the accessibility of the MOOCs and platform, also with a transversal and complementary approach. It has been found that it is difficult to cover all types of disabilities (deaf/hard-of-hearing, learning disabilities, physical disabilities, speech and language disabilities etc.) while performing the evaluations (Iniesto, Rodrigo & Moreira Teixeira, 2014; Iniesto & Rodrigo, 2014 b), in particular learning disabilities guidelines are very difficult to be checked in the evaluation of accessibility due to the lack of tools and the weakness of standards such as WCAG 2.0. (WCAG 2.0, 2008).

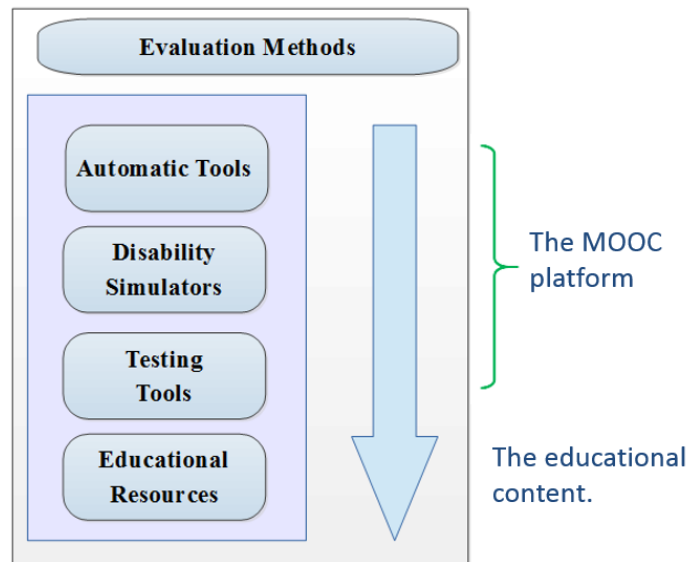


Figure 1. Global or heuristic vision.

Curiously, no reference has been found in the literature review regarding user’s opinions or expectations about what they would like to improve in MOOCs about usability and accessibility issues.

In the following sections we will describe this work rationale, briefly explain the prototype of the “*YourMOOC4ALL*” project along with the main conclusions and future work.

Rationale

The free and open nature of MOOCs should facilitate learning for people with special economic or displacement difficulties. These courses reach global audiences, and so it is essential to take into account the most vulnerable groups of potential users who might be left behind in the

Knowledge Society. But despite its character eminently open, access to MOOCs and the platforms can be an added difficulty for this group, which must also develop new specific and changing skills (de Waard et al, 2014). The introduction of audio-visual content and interactive elements (test, self-assessments ...) in these courses adds a new challenge to the accessibility requirements and includes new elements that extend the digital divide. Providers should be aware that there are no standards within their own platforms to create a uniform accessible educational content and what would help to get better reuse and accessible results (Baldiris, Santos & Barrera, 2008). Especially dramatic is the lack of full accessibility of audio-visual resources.

There are several MOOC aggregator sites such as Class Central (www.class-central.com) and MOOC List (www.mooc-list.com), in these two sites you can add your comments but the most complete one is CourseTalk (www.coursetalk.com, Figure 2) where you can review different pedagogical aspects of the course.

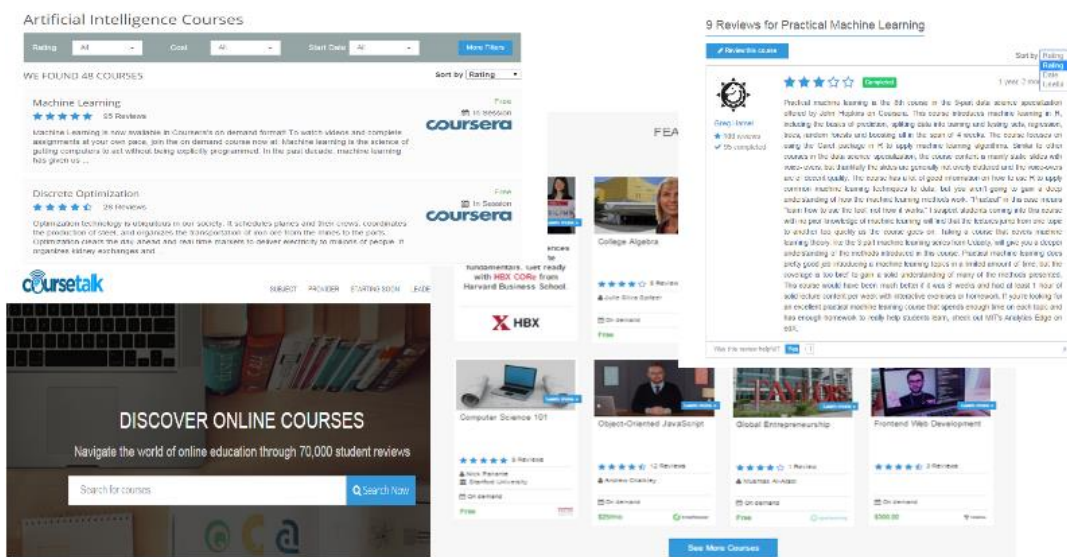


Figure 2. Different CourseTalk features.

Few studies have been conducted on MOOCs recommendations, however one study by Floratos, Guasch & Espasa (2015) allows us to see the wealth of information that can be extracted from the CourseTalk website, in this case about the feedback on terms of motivation. CourseTalk is one recommender Web page of MOOCs where students can evaluate different pedagogical aspects of the courses they are currently taken. The authors collected all the responses from all the e-courses reviewed at CourseTalk that satisfy concrete conditions such as being offered for free, by Universities, top-rated (i.e. 5/5 stars) and receiving more than 100 reviews, identifying 7 MOOCs and around 4050 reviews for their study. The authors of this study provide interesting results on concerning modes of formative assessment and feedback practices which promote stronger engagement in MOOCs.

Recently a study made by CourseTalk itself focuses on what reviews divulge about online education (CourseTalk, 2015). This study has been performed over more than 7000 courses, 74000 reviews and 46 providers. Some of the main conclusions include: “providers should embrace reviews from unbiased, third-party sites as a way of promoting improved course

selection and engagement” which indicates why a website such as CourseTalk can be useful for the students. Other conclusion stresses: “Providers should make courses experiences clear, easy to navigate, fun, interactive, supportive and flexible” which directly suggests how the correct use of usability can improve the quality of the user experience.

Therefore, the design of a website that allows users to freely include accessibility opinions will enable researchers to collect information that they can hardly obtain during the expert evaluation on site. In addition, users can comfortably fill the information from home, freely and independently, without the pressure of conducting an analysis with an expert at their shoulders.

“YourMOOC4ALL” project

The vision of this project is based on developing a CourseTalk like portal, one recommender website of MOOCs courses which was launched early in 2012, where students can evaluate different pedagogical aspects of the courses they are currently taking. In the case of this study the main aim is to enable users to assess the accessibility of the MOOC courses that they are following.

Main characteristics of this portal are described here. For instance, the application “*YourMOOC4ALL*” will enable to distinguish the different platforms and MOOC courses at three levels:

1. Provider (The MOOC course platform provider, e.g. FutureLearn (futurelearn.com), edX (edx.org), MiriadaX (miriadax.net), UNED COMA (coma.uned.es), etc.).
2. University (the university providing the course, e.g. UNED (portal.uned.es) or The Open University (open.ac.uk)).
3. Course (the specific course)

The information architecture of the portal is centred on a simple and intuitive design that consists only of a group of four pages:

1. Search Home \ Free Search. A search engine that lets you search by words contained in the title of the course, university and provider.
 - a. Offering a paged list of courses, first in order of antiquity or alphabetical.
2. Registration page and user profile. The evaluator profile.
 - a. Name and affiliation.
 - b. Information related to assistive technology that could need to use the user
 - c. Previous knowledge on the use of MOOCs and accessibility assessment experience is saved.
3. Course Information Page and consult the reviews. This page will contain useful information.
 - a. Basic course information (title, description of the course).
 - b. Average value of accessibility ratings.
 - c. Link to the video presenting the course.
 - d. List of reviews ordered by antiquity.
4. Page to add a review. This page will include the accessibility experience (Figure 3).

- a. The evaluation of various common points related to the platform, the courses and resources
- b. Free text to include qualitative information on the evaluation.
- c. Information like the state that the user is the course at the time of the evaluation (in progress, completed or abandoned)

The figure shows a prototype of a web page titled "Accessibility Experience". It features a light blue background with several blue buttons and a star rating system. On the left, there are three buttons labeled "Platform", "Course", and "Resources", each followed by a five-star rating system. On the right, there are two buttons: "Course Progress" at the top and "Evaluation free text" below it. The "Evaluation ratings" button is positioned at the top left, above the "Platform", "Course", and "Resources" buttons.

Figure 3. Page to add a review. Prototype.

The user will be asked to describe the accessibility of the MOOC course on several levels:

1. Accessibility of the platform itself: accessibility of the registration process, entrance to the main platform, course overview...
2. Accessibility of the course itself: access to the main functions: videos, Evaluation items (auto-test, file upload to the platform, peer review processes...), interventions in forums, chat, inspection of personal karma (social reputation), assigned badges, course completion, etc.
3. Educational content accessibility: existence of subtitles, transcripts, alternative audio, audio-description.

Conclusions

The current status of the proposal is in a designed prototype but the idea is to develop this application motivated by the real need of a website where users can make accessibility assessments of the current state of courses and platforms as CourseTalk is already evaluating the educational content pedagogical quality.

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