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Designing accessible Massive Open Online Courses (MOOCs): the stakeholders perspective

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A fundamental characteristic of Massive Open Online Courses (MOOCs) is the high degree of interactivity that facilitates and reinforces the communication between learners (Baturay, 2015). As the learning in MOOCs is learner-centred, it requires a more significant commitment from the learner into self-regulated learning (Littlejohn, Hood, Milligan and Mustain, 2016). An accessible open e-learning environment should consider each learner's abilities, learning goals, where learning takes place, and which specific devices the learner uses. Unfortunately, technologies used in MOOC platforms are not necessarily accessible, it has proven challenging to legislate (Department of Education. 2017).

Literature tells us that there is a lack of understanding of what disabled learners expect from MOOCs (Sanchez-Gordon and Luján-Mora, 2017). Disabled learners can face difficulties in accessing and using the distinct types of technologies that they come up against, as well different MOOC designs may be affecting their engagement, causing them to miss out on opportunities offered by MOOCs (Gasevic, Kovanovic, Joksimovic and Siemens. 2014). Unfortunately, extensive studies reporting demographic data in MOOCs seem not to be including disabled learners into consideration (Morris, Hotchkiss and Swinnerton. 2015).

The researcher's PhD research programme that investigated the current state of accessibility in MOOCs involved:

- Interviews with 26 MOOC stakeholders, e.g. instructional designers and learning media developers who produce the educational resources and accessibility specialists who are part of the platform software development team;
- Comparative quantitative survey data involving disabled and non-disabled learners participating in 14 FutureLearn MOOCs presentations from the OU;
- Interviews with 15 FutureLearn participants which captured disabled learners' experiences; and
- An accessibility audit was conducted to evaluate MOOCs from FutureLearn, edX, Coursera and Canvas Network. This audit comprises 4 components: accessibility, user experience (UX), quality and Universal Design for Learning (UDL); experts were part of its design and validation.

This research programme has yielded an understanding of how MOOC providers cater for disabled learners, the motivations of disabled learners when taking part in MOOCs, and how MOOCs should be designed to be accessible for disabled learners.

A range of barriers to accessibility in the design of MOOCs have been identified and developed recommendations for accessible development of MOOCs. These barriers are not necessarily technical, but include the learning design too and, in addition, these barriers can account for many factors which are not necessarily related to disability. For example, from the learners' perspective, it is the lack of time to perform the tasks assigned each week; this barrier may be related to a very busy personal life which may affect learners, or it could be due to mental health problems which influence their ability to concentrate on those tasks. Another barrier is related to the different approaches learners have to interact with other peers, something highly influenced when the learner has low self-esteem and is particularly sensitive to receive negative feedback. One of the most common issue raised by providers

is the limitation to support learners experiencing accessibility barriers once a MOOC is already online and being run.

The research outcomes presented in this paper are beneficial to MOOC providers for accessible design of MOOCs, including the educational resources and the platforms where the MOOCs are hosted. The ultimate beneficiaries are MOOC learners as accessible MOOCs will help support their lifelong learning and provide re-skilling opportunities irrespective of their disability.

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