Trend Report: Massive Open Online Courses (MOOC)

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There have been many stories prophesying changes in how we learn with technology. 'MOOC' could be one of them or it might turn out to be a real game changer. Some initially weak signals become more central and turn mainstream over time, others not. Great ideas cannot thrive by themselves; research, development, evaluation, deployment, procurement are activities planned and performed by interdependent groups (pursuing connecting interests), together with stakeholders this forms a highly complex and dynamic ecosystem. With an abundance of information available, it often is difficult to separate noise from important weak signals and false prophets from those who should be listened to.

With this report, the TELmap project tries to corroborate weak signals and rising trends in technology-enhanced learning with supporting evidence. The reports try to identify key forces and drivers as well as barriers and obstacles. TELmap is funded by the European Commission within the EU’s 7th framework programme.

Parts of this report are generated from data. The subsequent sections will indicate whenever they are basing analyses on data. One important resource thereby is the TELmap Mediabase, which is a collection of more than 83,294 blog posts from 562 blogs, collected since November 7, 2006.

1 Introduction: Massive Open Online Courses (MOOC)

There is a hype around Massive Open Online Courses (MOOCs) and this hype is echoed in the media. For example, the TELmap Mediabase lists 5662 news items and blog postings from its about 600 sources as being of relevance to "mooc". They cover a period of 850 days starting with January 1, 2010, to April 30, 2012.

Looking at the rise of the term in those blogs, the term is first getting used from September 2012 onwards, with a rise in frequency over these 34 weeks. In that timeframe, the term “mooc” appeared 2.3 per cent more often per week. In comparison to other topics, such as ‘mobile’, ‘e-learning’, ‘augmented reality’, ‘game’, the following can be said. The term ‘mooc’ appeared 4.2 per cent as often as ‘mobile’, 6 per cent as often as ‘e-learning’, 283.3 per cent as often as ‘augmented reality’, 4.8 per cent as often as ‘game’.

Figure 1 provides an overview on this: the dotted lines indicate the general trend of the keyword appearing in news items and blog postings. It is built through fitting a linear model over the frequency distribution of the term over time. The height of each line is the number of news items and blog postings in which it appears; the line is slightly smoothed with Tukey’s smoother so that the trend is more clearly visible and not hidden behind outliers.

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Turning now to the semantic field around the keyword, the following can be said. There are 25 keywords that co-occur significantly often with ‘mooc’. These can be grouped as indicated by the hierarchy in the fan plot of Figure 2. These keywords are co-occurring in the news together with ‘mooc’, their hierarchical grouping is established through agglomerative clustering based on their cosine distances in a latent-semantic space: this is a good measure of associative closeness, while at the same time cleaning out noise.
2 Early signs and examples

One of the first signs of change that indicated MOOCs might be on the rise was in fall 2011 when over 160,000 people signed up [1] for a course in artificial intelligence offered by Sebastian Thrun and Peter Norvig via Know Labs, which is now known as Udacity [2] and one of the major MOOCs at the moment.

Apart from the increasing number of enrollments to MOOCs, also the fact that more and more institutions start their own MOOC platform, like Coursera [3] for example. In this context, events like when a dozen highly ranked universities had signed on with Coursera [4] could be also considered as an early sign that universities recognize not only the potential of this offering but also the competition concerning conventional teaching formats. In July 2012 Coursera even tripled its digital lineup with 65 additional courses [5]. Coursera recently claimed to have just reached one million students [6].

Another example for a MOOC is edX, which is a joined effort of Harvard University and MIT and was opened in 2012. edX is a non-profit enterprise and offers free online courses to students all over the world [7]. By completion of the course the participant can get a certificate to show the successful participation. The certificate is issued by the so called hosting "X University", which means the university holding the course (for example HarvardX). At the moment the certificates are free but it is foreseen that in the future students will have to pay a fee for them [8].

Many magazine articles can be found that predict MOOCs as an "emerging trend in the education space" [9] or see even the possibility that MOOCs could alter the whole higher education sector [10].

Also the increasing tuition fees could be an early sign for MOOCs being a trend topic. The growing costs for education could persuade people to choose MOOCs instead of enrolling in courses at the university. Recent education reforms have led to 15,000 fewer applicants [11].
Figure 2: Circular 'fan' plot of the keywords associated strongly with "mooc".
Figure 3: Network plot for the keywords linked with "mooc".
3 Identified problems and barriers

The following problems are still persistent regarding MOOCs.

1. Accreditation: According to Kevin Carey (director of the education-policy program at the New America Foundation) students enrolling and successfully passing massive open online courses often achieve as good results as students in traditional lectures. However, up to date it is still not ensured, that the students are rewarded in the same way. Carey states, that usually students don’t receive any official academic credit of any kind [12].

2. Stable Internet access: A stable internet access, a sturdy computer, time to engage with the material and basic digital-literacy skills to participate. This already excludes a wide range of possible participants [13].

3. Revenue Models: Revenue Models for MOOCs have to be developed to make them self-sustained [14] and not just a method of market or increasing visibility.

4. Challenging Universities: MOOCs are challenging the business models of higher educational institutions. Especially smaller universities without the big reputation of the educational leaders can suffer from this [15]. Universities could therefore try to block this trend.

4 Related grand challenges in TEL

Please find below the relevant Grand Challenges.

5 Weak signals in PESTL categories

These are signs of change that indicate MOOCs might be on the rise. In the PESTL categories.

6 Interventions, including alternative / complementary interventions

The following interventions would push MOOCs.

References


