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Veröffentlichungsversion / Published Version
Zeitschriftenartikel / journal article

Empfohlene Zitierung / Suggested Citation:
Otto, D., Becker, S., Sander, K., & Bollmann, A. (2016). What students really want from MOOCs - a qualitative analysis of students' individual motivation and learning goals. *Journal of the International Conference on University Teaching and Innovation (CIDUI)*, 3, 1-11. https://nbn-resolving.org/urn:nbn:de:0168-ssoar-49499-0

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TEACHING AND LEARNING INNOVATION IMPACTS

What students really want from MOOCs

A qualitative analysis of students' individual motivation and learning goals

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1. **ABSTRACT:** Despite the euphoria about MOOCs, a final evaluation of the educational value is still pending. In our paper, we question the recent research focus which tends to solely quantify educational success by referring to certain numbers of completion. We think it is promising to give more consideration to the subject of students' individual learning success and thus complement recent research about the impact of MOOCs. Empirically, we draw on experiences gained throughout a climate MOOC.

2. **RESUM:** A pesar de la euforia sobre MOOCs una evaluación final del valor educativo todavía está pendiente. En nuestro artículo indagamos el foco de la investigación reciente que tiende a solamente cuantificar el éxito educativo. En nuestra opinión es prometedor prestar más atención al éxito individual de aprendizaje y, de este modo, complementar la investigación reciente sobre el impacto de MOOCs. Empíricamente, usamos las experiencias adquiridas durante un MOOC sobre el cambio climático.

3. **KEYWORDS:** MOOC; learning impacts; learning success; qualitative evaluation; climate change.

4. **DEVELOPMENT:**

What students really want from MOOCs - A qualitative analysis of students' individual motivation and learning goals

Introduction

Without a doubt, MOOCs (Massive Open Online Courses) have been one of the hottest topics in education throughout the last years. At the peak of the elation, The New York Times declared 2012 the year of the MOOCs. However, after the dust has settled, disputes remain whether MOOCs in fact have the potential to meet the expectations of being a disruptive innovation giving educational access to everyone (Jona & Naidu, 2014; Knox, 2014). Whereas plans to offer MOOCs have declined in the US, the numbers in Europe continue to rise. Recent studies show the constant increase of European universities planning to offer or develop MOOCs (Jansen et al., 2015).

In spite of all the euphoria about MOOCs in Europe, a final evaluation of their added value for the field of education is still pending. In the recent academic debate, MOOCs have been criticised from various quarters. From a didactic perspective, Baggaley doubts that MOOCs constitute an innovative approach as they lack clearly defined didactical concepts and strategies to spur the interaction with and between participants (2014). Most of the MOOCs are teacher-oriented, thus assigning participants a passive role during the course. Other scholars have heavily found fault with the ineffectiveness and insufficient learning success of MOOCs given the high number of drop-outs (Onah et al., 2014). Almost all significant MOOC providers suffer from low completion rates, which are mostly below 10 per cent (Khalil & Ebner, 2014). Responding to the latter point of criticism, many studies examine strategies of how to evade high drop-out rates and increase the number of completions and certificate acquisitions (Jordan, 2015).

Drawing on our experience in distance teaching, we find that these high numbers of dropouts are of little astonishment. Distance teaching is traditionally facing high numbers of dropouts

because students mostly study part-time and are hence occupied with, for instance, work or childcare. This is particularly true for MOOCs, as high levels of anonymity, low costs and easy enrolment at times lead to students´ displaying erratic behaviour with regards to study habits. Finding other interesting courses, lack of time and selective utilization patterns provide reasons for not completing a course.

In this paper, we therefore question the recent research focus on completion rates. In our opinion, the approach tends to solely quantify educational success by referring to certain numbers of completion rates or dropouts. As a consequence, far too many studies about MOOCs are centred around the questions of how to lower attrition rates and why students drop out or fail (Khalil & Ebner, 2014). Building on this, several studies examine the technical infrastructure for MOOCs and how to best design them (Warburton & Mor, 2015; Yousef et al., 2014). Doing so ignores the fact that measuring (learning) success goes beyond merely counting how many participants are receiving a certificate in the end. If MOOCs differ from classical university courses, we might need different criteria to assess their accomplishment. For example Jona and Naidu ask, “if participation in a MOOC is completely voluntary and no money is changing hands, can we use the same standards to evaluate the quality of a MOOC ?” (2014, p. 14).

We feel that one problem is the data provided to analyse MOOCs. As Fischer points out:
The data collected are those that are the easiest to collect, not necessarily the most relevant ones. MOOC providers point to number of participants (…), number of courses offered (…) and lists of universities that collaborate with them and use their respective platforms for their courses as indicators of success. (Fischer, 2014, p. 150)

Following this argument, we think it is promising to dedicate more consideration to the subject of qualitative analysis of students' learning success. This should counteract the predominant purely quantitative analysis. Thus, we aim to complement recent research about the impacts of MOOCs by providing in-depth insights of the students' subjective motivation and learning achievements. This is intended to lead to an advanced understanding of the different individually perceived benefits of students participating in a MOOC.

This article is structured as follows. In the first section, we describe our empirical case, a MOOC about climate change conducted at the end of 2015. The MOOC “Climate Change - a question of justice” in English language was carried out as a cooperation between the FernUniversität in Hagen, Germany, and Lund University in Sweden. We thank Angela Oels from Lund University for the excellent cooperation during the term of the MOOC. She also provided the idea for the content-related design of the MOOC. In the second section we elaborate on how the data was collected and analysed. In the third section, we present the results of our analysis. Finally, we draw some conclusions for further research.

ISSN: 2385-6203

MOOC “Climate Change - a question of justice”

The MOOC “Climate Change - a question of justice” was offered by the FernUniversität in Hagen, Germany, in cooperation with Lund University, Sweden. The MOOC aimed to provide participants with the competences to understand the political spin behind the ostensible informal answers commonly uttered by the international community in the field of climate change. One of the main stumbling blocks is the different view on climate justice in northern and southern countries. Starting from an interdisciplinary perspective, scholars from different universities, research institutes and non-governmental organizations gave lectures on the pressing issues at hand. They encompassed the science of climate change, climate governance, the economics of climate change and the impacts of climate change on nature and humanity. Experts spoke about current matters, for example climate wars, poverty or the role of cities in a changing climate. The speakers covered a broad range of not only universities, for example the University of Sussex in the United Kingdom, Stockholm University in Sweden and Brown University in the United States, but also practitioners from Greenpeace International and the Health of Mother Earth Foundation, Nigeria.

The MOOC was carried out as an xMOOC (using an instructional design) starting at the beginning of September 2015 and closing with the start of the international climate change negotiation between 196 parties in Paris at the end of November. The MOOC consisted of eight units with four video lectures (each approximately ten minutes long). The units incorporated in each case a forum where the students' discussions were supervised by a tutor, additional material and a weekly online consultation hour. The units concluded with a quiz testing the content of the previous lectures. To acquire a certificate, the participants were required to watch 80 per cent of the lectures and to complete multiple-choice questions for each unit for each unit, which had to be completed with a total success rate of at least 80 per cent. As an additional service, the students were allowed to access a selection of articles from the journal WIREs Climate Change for free for the duration of the MOOC.

The central learning objective of the MOOC was to enable participants to be critical observers of the United Nations Framework Convention on Climate Change (UNFCCC) in Paris in December 2015 where 196 parties bargained for a binding agreement. The MOOC aimed to provide students with a broad picture of climate change as a global hazard and an interdisciplinary problem. Climate change cannot solely be understood from a mono-disciplinary standpoint as it lacks a comprehensive perspective of how the different dimensions interact (Abbott & Wilson, 2015). Economics, for example, has a great influence on the politics of climate change. Likewise, to understand political negotiations, at least a basic knowledge about scientific facts is required (Breitmeier & Otto, 2012). Having set up a common knowledge basis, students were supposed to learn about interwoven consequences for climate justice like land-grabbing, climate security, the changing of lifestyles and the question of degrowth or green growth.

Analysis: A qualitative examination of students' individual motivation and learning goals
Overall, 2908 students participated in the MOOC, 302 of them earning a certificate at the end of the course. This leads to a completion rate of around 11 per cent. The students represented 78 countries ranging from Albania to Zambia. While these numbers rather form a midsize cohort compared to big providers, the results from our analysis nevertheless allow mapping of general trends with regard to MOOCs.

For the evaluation, the case study was framed by two structured surveys at the beginning and the end of the course. At the beginning, we asked for general parameters like nationality, academic degree and motivation for the course. At the end of the course, the questions related to learning satisfaction and learning success. Thereby, we tried to investigate to what extent the course was able to convey our intended learning outcomes. Seven hundred and forty-four students participated in the first survey, 623 of them completed the questionnaire. The second survey had 303 participants with 170 who completed it.

Besides reviewing learning outcomes, we were particularly interested in the individual learning motivation and learning goals the students brought to the course. This was supposed to lead to an in-depth understanding of why students opted to take our MOOC about climate justice and what attracted them to continue and be active.

As our empirical basis, after the course had ended, we conducted 45 interviews with students who had gained a certificate and attracted attention because they were very active during the course (either watching many lectures or engaging in the discussion forums). To secure the representativeness of the data, we paid attention to an equal distribution of key variables such as age, country of birth and academic background. Methodologically, we used semi-structured interviews to secure comparativeness as well as reliability and flexibility (Azarpazhooh et al., 2008). Thirty-five interviews were conducted via Skype and took about 10 to 15 minutes. The remaining 20 were performed as written interviews due to the unexpected large response rate of the students. The thematic focus of the interviews was academic background, prior experiences with the topic, learning motivation and individually perceived learning success. Furthermore, we asked the students whether certification provided an extrinsic motivation to finish the course and, if yes, how they expected to benefit from the certificate. In the next step, we coded the transcripts of the interviews using structured qualitative content analysis (Mayring, 2000).

Results
Regarding the quantitative evaluation, as a first result, and supporting the literature, we find that almost all students hold an academic degree, most of them a Master degree.

Figure 1: highest level of education

In the first quantitative survey at the beginning of the MOOC we also asked students about their motivation to participate in the course.

Figure 2: Why did you sign up for the MOOC? (multiple answers possible)

Noteworthy is that the certification provided little incentive to join the course (26.22%). For 81.99%, an interest in the topic was most commonly mentioned, followed by an appealing program (45.02%). Almost 40% indicated that their work was related to the topic of climate change. While miscellaneous motivations were driving the students, we assumed that for those who stuck with the course, the rate of students enticed by certification would have increased.

Figure 3: Why did you sign up for the MOOC? (multiple answers possible)

Astonishingly, while the percentage of students attracted by the course evidently had risen, still less than half of the students were interested in certification." (43.02%). Interest and an attractive program were still predominant. In our opinion, this gap shows the need to compare assumption and reality in more detail. The qualitative interviews were supposed to disclose the students' individual motivation and learning goals. A better question would be: what were the students aiming to achieve by doing the course?

As an initial result, all 45 students interviewed held an academic degree, mostly related to the field of environmental science or directly to climate change. Only four students claimed that they had no prior experience with the topic of climate change. The vast majority of students were already working or volunteering in sectors where they had points of contacts with climate change, as for example in the non-governmental sector or as freelancer.

Figure 4: Reason for MOOC participation

Expanding knowledge and to support education about climate change was predominantly stated by the students as a motivation to join the course. Only 20 out of 45 stated that they expected joining the MOOC to be beneficial for their further career. On the other hand, 39 students expressed that the MOOC succours their current or future educational activity, mostly a Bachelor or Master program.
(Student) "I am planning to do a Master in Environmental Governance next year and this course has given me some idea of possible research areas I could go into."

Remarkably, during the interviews students specified certain learning goals they wanted to achieve. These were mainly personal goals, for example the course was supposed to help them to:
plan projects -

(Student) “Yes, I am an architect and I think the knowledge I have received from the course will be helpful for me in the future, both in research projects and design projects.”

prepare a PhD proposal -
(Student) “Definitely useful for PhD, the course gave me direction to other sources in terms of literature on climate related issues.”

or network with others -
(Student) “I participated in the MOOC to gain more interaction with the world pool of academia, politicians and lecturers about the topic of climate change.”

Eleven students indicated they were predominantly interested in research articles that were accessible via the MOOC platform:
(Student) “The greatest benefit is likely from all the additional materials provided and recommended by the lecturers! I now have a very extensive reading list on a variety of climate change-related topics.”

Five students interviewed valued the opportunity to network and make contact with the lectures:
(Student) “So when I go back I can, like, go to these websites and try to find a report or see the expert and send them an email if I have a question and hopefully they will answer.”

As a side note, when taking about climate change one should not underestimate personal livelihood as a stimulus for participation:
(Student) “Favour of love to the topic [sic!] and to help out in my country [Vanuatu] in dealing with this issue now and onwards.”

The interviews demonstrate that the motivation of the clientele we dealt with cannot be equated to those at a university. Motivations are more heterogeneous and we should refrain from compiling a classification. Whereas a degree is usually the underlying aim of studying, we cannot assume to find this motivation when dealing with MOOCs.

Surprisingly, our results show that the certification provided little incentive for the students to complete the MOOC. Only three students mentioned that the certification was an initial reason for their participation.

Asking the students whether the certificate is useful for them, we received only 21 affirmative answers, which is fewer than half of the interviewed students. Fifteen out of the 21 stated that they use the certificate to refine their curriculum vitae.

(Student) “The only way I assume I will profit from the MOOC is that I have more knowledge on the topic that is important for me. However, I added the certificate to my CV so when I apply for a job people will hopefully see that I have been dealing with this topic quite a lot.”
Seven students said they were not sure if the certificate is useful for them.

(Student) “I can't say. I will change jobs this year. So maybe I will include the certificate in my application papers, or maybe not. Depends really on the [job] offer I will apply for.”

Asking students about the incentive to complete the MOOC, 19 out of the 45 responded that the certificate was just a by-product of the course. Instead, they mentioned their curiosity about upcoming lectures as an incentive to keep following the course:

(Student) “When I started, it got more and more interesting and I really enjoyed it. So that was kind of a motivation by itself, that it is so interesting.”
Similar findings applied when we asked the students about their opinion on the different lectures. Although the majority of the students had at least a glance at all of the videos, only a few students perceived all lectures as an added value. Most of the students already had a basic understanding of certain topics due to their educational background or working experience. Therefore, they selectively concentrated on specific lectures that offered them new perspectives or benefits for their personal learning goal.

(Student) “My interest in climate change is overall not so much on the science of climate change, but on which sociological/political/economic effects it will have. I think that the MOOC helped me in this regard by offering further information”.

Discussion

In a nutshell, the findings of our survey reinforce our initial belief that measuring the learning impacts of MOOCs requires more than solely quantitative data. Hitherto, the belief that qualitative data is needed for the interpretation of MOOCs has been slowly increasing (Liu et al., 2015). As MOOCs provide an independent and flexible way of learning for a quite unspecified target group, they lead to a variety of individual learning intentions and outcomes. The perceived added values for the students are manifold and run deeper than just course completion and certification. Investigating motivation and learning success more in detail can bring us new insight to the impacts of MOOCs and will help to improve their design.

The discussion, therefore, has to refrain from focusing merely on competition rates and certification. If spreading knowledge to people notwithstanding their academic precondition or geographic location is the fundamental idea of MOOCs, one cannot utilize the same principles as we do in formal education. Success then needs a reframing in the light of a heterogeneous auditory that cannot be captured by applying higher education standards. An ideal starting

point is the participants themselves, since they ought to be the centre of all educational endeavours.

4.1. GRAPHIC OR TABLE 1

Figure 1: highest level of education

Secondary school completion or less (1)	43	6.97%
Formal trade certificate/apprenticeship (2)	18	2.92%
Bachelor Degree (3)	195	31.60%
Master Degree (4)	250	40.52%
PhD / Doctor (5)	51	8.27%
Prof. (6)	4	0.65%
Other: (7)	56	9.08%

4.2. GRAPHIC OR TABLE 2

Figure 2: Why did you sign up for the MOOC? (multiple answers possible)

Curiosity	181	28.59%
Interest in the topic	519	81.99%
I work in this field	247	39.02%
I take other courses in this thematic field	137	21.64%
I want to learn what a MOOC is	88	13.90%
I know a speaker in this MOOC	27	4.27%
The program sounded interesting	285	45.02%
The trailer raised my interest	58	9.16%
My friends signed up	14	2.21%
I want to be entertained	7	1.11%
Spontaneous decision	57	9.00%
I want to gain the certificate of completion	166	26.22%
My university teacher highly recommended to sign up	41	6.48%
I want to network with other people from this thematic field	165	26.07%

4.3. GRAPHIC OR TABLE 3

Figure 3: Why did you sign up for the MOOC? (multiple answers possible)

Curiosity	74	43.02%
Interest in the topic	149	86.63%
I work in this field	66	38.37%
I take other courses in this thematic field	58	33.72%
I wanted to learn what a MOOC is	42	24.42%
I know a speaker in this MOOC	12	6.98%
The program sounded interesting	112	65.12%
The trailer raised my interest	15	8.72%
My friends signed up	12	6.98%
I want to be entertained	3	1.74%
Spontaneous decision	12	6.98%
I want to gain the certificate of completion	74	43.02%
My university teacher highly recommended to sign up	15	8.72%
I want to network with other people from this thematic field	39	22.67%

4.4. GRAPHIC OR TABLE 4

Figure 4: Reason for MOOC participation

Reason for MOOC participation (n=45)	Number of codings	Percentage
To support education	39	37,50
Knowledge acquisition	39	37,50
To support career	20	19,23
Access to pre-structured knowledge	3	2,88
Take part in a MOOC	3	2,88
Total (valid)	104	100,00

4.5. GRAPHIC OR TABLE 5

Figure 5: Was the certificate useful?

Was the certificate useful? (n=40)	Number of answers	Percentage
Yes	21	38,18
No	12	21,82
Don't know	7	12,73

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