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Crowd-sourcing thesis project feedback from mooc learners

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Introduction

Massive open online courses (moocs) are large scale open-access online courses in which thousands of *learners* from all regions of the world can join to learn about virtually any topic. Since the mooc format rose to prominence in 2012, very little attention has been given to the possible benefits for ordinary master's students enrolled at the institutions offering these courses.

This poster describes a project where master's students enrolled at a traditional campus based course at the University of Copenhagen (UCPH), used the discussion forum of a mooc to get feedback to their master's thesis projects. The aim of the project was to examine if and how master's students can use the knowledge, network and experience of the global community of mooc learners that are present in the mooc discussions forums. We analyzed aspects of these thesis project discussions, focusing on the interaction between *master's student* and *mooc learners*, and categorizing the different types of useful feedback from *mooc learners*.

Methods

Our empirical data stems from three experiments, each of which had a master's student start a new thread in the mooc discussions forums where he/she presented his/her own thesis project. To attract the attention of learners, the mooc course leader sent out an email (one for each of the three experiments) to all enrolled learners which included a deep (direct) link to the new thread, where learners could read about the thesis project and add their own comments. Our data is the content of these discussions forum threads.

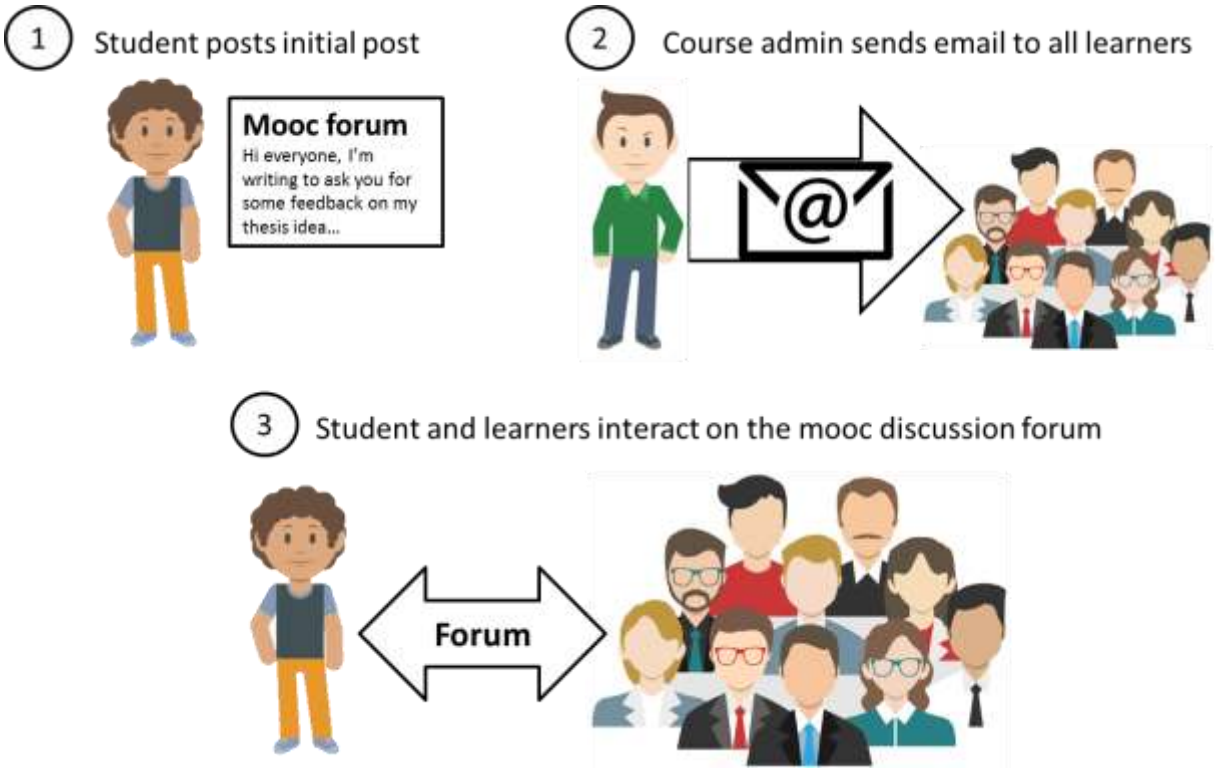

Figure 1: The simple setup of the mooc forum as medium for crowd-sourcing thesis feedback

The three master's students, which we will refer to as Student-1, -2, and -3, volunteered to be used as cases in our study. They were all enrolled in the 2-year study programme MSc in Global Health at the UCPH. This programme is concluded by a module where the students produce a master's thesis. They each took part in the experiment when they were in the very early stages of their thesis project process, having only rough ideas about topic and overall research question.

All three experiments were carried out in the online discussion forums of the mooc "An Introduction to Global Health". The mooc was run in sessions, each with around 20.000 learners enrolling for an 8 week long learning experience. According to data available on the course's analytics dashboards the mooc learners were predominantly female (ca. 57%), predominantly not students (ca. 60%), predominantly working (ca. 50% full-time and ca. 17% part-time workers), of all ages but with the biggest section being in the "25-34 years old" bracket (ca. 35%), and from 193 different countries, with most learners living in United States, United Kingdom, Canada, India, and Brazil.

Analysis

Our analysis focused on two aspects of the communication in the discussion threads: 1) the interaction between master's student and mooc learners, and 2) the different types of feedback provided by mooc learners.

Interaction between student and learners

To examine the nature of the communication between master's student and mooc learners we looked at the extent of dialogue in the discussions. Each discussion thread consists of a number of small interactions, all taking their outset in the initial post, where the student described his/her thesis topic and research questions. The students only took part in the discussions in their own thread, so each thread had just one student interacting with the mooc learners.

A discussion thread orders all posts/replies as pearls on a thread, with the initial student post as the first post, and then all the replies listed in the order they were posted. Aside from replying to the initial student post it is also possible to reply to individual posts. As a consequence the interactions in a discussion thread actually consists of a number of small isolated sub-threads all taking the initial student post as their outset. In our three discussion threads these sub-threads were very short. Figure 2 illustrates the five different patterns for interaction we observed. In general these interactions include just the student and a single mooc learner. Only one of the patterns included the student and two mooc learners. The conclusion must be that the format encourages 1-on-1 interaction between student and learner, centered on that individual learner's feedback, and not a shared creation of knowledge between the student and the mooc learners as a group.

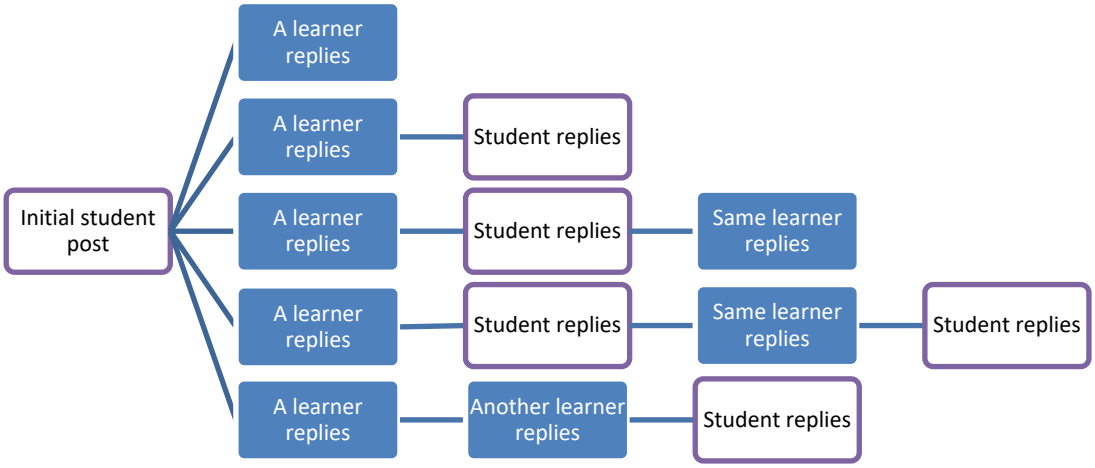

Figure 2: Sub-threads The five different patterns for interaction in sub-threads that we identified.

As can be seen in table 1 there is great variation in activity levels of both master's students and mooc learners in the three threads. Student-1 and Student-3 both reply to the majority of mooc learner posts, while Student-2 replies to less than a tenth of the mooc learner posts. This, however, does not translate into a lot of longer dialogues in the threads of Student-1 and Student-3. In fact, the vast majority of interactions include just a single post from a mooc learner, and it is not possible to conclude that the higher

degree of participation by Student-1 and Student-3 lead to more comprehensive and useful feedback from the mooc learners.

Type of post	**Student-1 thread**	**Student-2 thread**	**Student-3 thread**
Learner-1 first reply	54	23	9
Learner-1 second reply	2	0	3
Learner-2 reply	2	2	1
Total number of posts by learners	**58**	**25**	**13**
Student reply	44	2	6
Total number of posts	**102**	**27**	**19**

Table 1.: Number and type of the posts/replies in the three discussion threads. The initial student post is not included I the numbers.

The large difference in number of learner replies is most likely connected with the thesis topic, and how well it resonated with the learners on the course. We base this on the fact that the proportion of learners posting in the thread, out of the number of learners viewing the thread (opening it in their internet browser), is almost the same for each thread (7-9%). Learners can already see the topic in the thread title (and URL links to the thread) before viewing the thread. This serves as a preselection, where only learners with an interest in the topic would even go and read the initial post. This highlights the importance of using a comprehensible and precise title for the discussion threads.

Types of feedback

To examine the usefulness for the students we sorted the feedback into a number of categories. These categories were not decided beforehand, but were identified after careful examination of the data.

Of these categories we focused on the ones that can be seen as 'useful' from the perspective of the student who is working on a thesis project, such as suggestions for methodology, informants or literature. One post from a learner can be tagged with several categories, if it for instance suggests both relevant literature and a key informant.

Table 2 shows these categories and the number of times a post was tagged with each category in the three discussion threads.

Categories of useful feedback	**Student-1 thread**	**Student-2 thread**	**Student-3 thread**
Suggesting literature or existing data	18	2	4
Suggesting method or research design	12	0	2
Suggesting relevant informant	4	2	2
Giving input to conclusion or discussion	1	2	5
Offering to share personal network	5	0	0
Offering support or collaboration	9	1	2
Sum of useful feedback	**49**	**7**	**15**

Table 2: Categories of useful feedback, and the frequency of posts belonging to each category in each of the three discussion threads. A post can get tagged with several (or no) categories, thus this table shows the frequency of the content elements and not the number of posts.

There is some variation between threads in regards to which kinds of feedback the students got. It is our impression that this is largely due to the different nature of the thesis ideas. Student-1 was planning field work in Ethiopia, so a lot of the feedback was related to methodology and learners offering to put the student in contact with colleagues with knowledge of the concrete field work context. Student-3 was

planning a desk study so much of the feedback would include input to a discussion of the research question.

	Student-1 thread	**Student-2 thread**	**Student-3 thread**
Sum of useful feedback (table 2)	49	7	15
Number of replies by learners	58	25	13
Useful feedback / learner replies	**0.84**	**0.28**	**1.15**

Table 3: average usefulness of posts in each thread as calculated by the number of useful feedback tags divided by the number of mooc learner posts. An average usefulness of 1.00 signifies that there is on average one useful feedback tag for each mooc learner post in the thread.

Table 3 shows the relation between how often a reply from a mooc learner was categorized as containing one of the six types of useful feedback (Table 2) and the total number of posts by mooc learners. A higher number signifies a *higher density of useful feedback* in the entire pool of feedback received by a single master's student. The outlier here is the thread of Student-2 where the 25 posts by mooc learners only included seven instances of useful feedback. This does not seem to be caused by the Student-2's lower level of participation in the thread. In fact, our interpretation is that the low quality of the learner posts was causing the student to participate less. We base this on the fact that in the other two threads it is exactly the useful bits of a mooc learner's posts that prompt the master's student to reply, simply because useful feedback calls for a "Thank you" or leads to a follow up question, whereas it can be hard to figure out what to reply to a not so useful post.

Taking a step back, however, it would be interesting to examine what determines the quality and usefulness of the learner feedback. Some of it is unquestionably determined by the topic and its relevance to the mooc learners. Further research is needed to examine how the format of the initial post (where the student presents the project) influences the quality and usefulness of the feedback from the learners.

Findings

Our findings show that the mooc discussion forum is a useful medium for generating feedback that is valuable for the *master's student's* thesis writing.

The interactions between *master's student* and *mooc learners* were short consisting of one or two back and forth posts. Although the format allowed it, the learners very rarely commented on the feedback from other learners, and almost all interactions were between a student and just one learner.

In discussions where the *master's student* was more present and posted more replies we found that there was more *mooc learner* activity and more useful feedback.

We identified a number of categories of useful feedback, including suggestions for literature, ideas for research design, or offering to put the student in touch with relevant collaborators from personal network.

The findings hint that the format is most useful for generating feedback early in the thesis process, and that the *master's students* can benefit from the diversity of feedback and advice that they can get from interacting with the global community of *mooc learners*.

The feedback depended on the type of thesis project the student presented, and the format seems flexible and suitable for different kinds of projects, including both field work and desk study based thesis projects.

Further research is needed to identify the best format for the student to start the discussion in a way that ensures that feedback that is generated form the learners is useful for the thesis writing process.

The willingness of mooc learners to participate in activities of students in the ordinary education system opens up new opportunities for creation and sharing of knowledge in a global ecosystem including both practitioners and students.

For the purpose of this project presentation, we use the following terminology:
A student is a person who is enrolled in an ordinary master's programme at the UCPH.
A learner is a person who is participating in a mooc offered online by the UCPH on the platform Coursera.
A post is a public text-based message made by either a student or a learner in the online discussion forums of a mooc.
A thread is the way posts are organized on the online discussion forum. Each thread has a title and a topic which is described in the first post, and ideally all posts in a thread will relate to that topic.