The Next Step of CQA Systems' Utilization in Educational Domain: MOOCs

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In our previous work [1], we proposed a concept of educational and organizational Community Question Answering systems (CQA) system which takes organizational specifics (e.g. closed community) as well as educational specifics (e.g. presence of a teacher) into consideration. In order to verify this concept, we implemented CQA system Askalot (demo of Askalot is available at https://askalot.fiit.stuba.sk/demo. Askalot is currently deployed at our faculty for the third year and it is used by a community which consists of about 1000 students and teachers.

Motivated by positive outcomes as well as feedback from the involved students and teachers in our educational CQA systems Askalot, we plan to deploy Askalot at University of Lugano as a part of cooperation project in SCOPES programme. Moreover, we started another cooperation with Harvard University in order to transform Askalot into a tool that can be used as a plugin to MOOC system edX. The goal of our ongoing cooperation is to replace the standard discussion with a tool that can be used by students to share their knowledge more effectively by means of course-related questions. At the same time, it will provide a possibility for researchers to perform A/B experiments (in the design of Askalot we follow a concept of MOOCLets proposed in [2]). Consequently, our plan is to deploy this MOOC version of Askalot at selected courses provided by Harvard University, which are enrolled by several thousands of students each year, with a possibility for further expansion at additional courses.

The original design of Askalot was proposed specifically for our university (e.g. it sup-ported only simple non-hierarchical categorization of questions which reflected our subjects' structure). Therefore, it did not provide sufficient flexibility and scalability which is necessary to deploy Askalot in additional various settings. In spite of the same educational domain, edX differs significantly from university environments as well as both universities differs from each other (in terms of their formal educational process,

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structure, etc.). As the result, we had to rebuilt the original system design and following this process, we provide several design recommendations in [3].

The main changes in Askalot include modular system architecture, flexible user management integration or adaptable self-managed content organization. The new environment affected also user interface - in contrast to university version of Askalot, MOOC version provides two views on questions:

1. Unit view, which contains only questions related to particular learning object and is provided directly side by side with learning materials, and

2. Global view, which contains all questions as well as overview of categories, tags, users and their social profiles in the similar way as in university version.

We are aware that application of CQA concepts in educational domain (i.e. at universities and in MOOCs) affects not only design of the system and its primary functions (i.e. essential functions dedicated to the question answering process), but also characteristics of necessary adaptive collaboration support (so far we focused especially on the design of the CQA educational systems). The existing approaches to collaboration support in standard CQA systems are in many cases not applicable here because additional constraints should be satisfied (e.g. a student cannot be overloaded with too many questions or a difficulty of recommended questions should match student's knowledge level). Therefore, supplementing the university as well as MOOC version of Askalot with novel methods for appropriate adaptive support (mainly question routing and question retrieval) represent a promising direction for our future work.

In addition, we aim to address also the problem with students' motivation and lack of the trust which we observe currently at our university. It would be possible to employ additional gamification mechanisms (e.g. badges) that will be designed specifically for educational environment. This gamification can be interconnected with various organizational rewards, which are one of possible motivational factors. Moreover, version of Askalot deployed at University of Lugano will allow students to contribute to this system completely anonymously (without any interconnection to real students' identities). It will allow us to determine the attitude of students to question answering in a different environment with a different settings and compare it with results obtained from experimental evaluation at our university.

References

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