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What Learners Want: Revealing the Focal Topics in MOOC Reviews

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What Learners Want: Revealing the Focal Topics in MOOC Reviews

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1. INTRODUCTION AND RESEARCH QUESTIONS

Massive open online courses (MOOCs) have experienced a remarkable surge in the number of online learners, universities, and platforms during the pandemic. By the end of 2021, 19400 MOOCs distributing in 10 subjects will be announced or launched by around 950 universities worldwide [9]. A sudden boom in MOOCs provides new sources of data and opportunities for large-scale experiments that can advance the science of learning. With the development of data mining techniques, much research has focused on user-generated data, such as course reviews [2,5] and discussion forums [1,3]. These channels permit learners to provide course-related summaries, reflections, and inquiries. Courses in a MOOC can be divided into two categories depending on the learner's learning intention [6]. One of them is knowledge-seeking courses and the other is skill-seeking courses. Knowledge-seeking courses stress learning concepts or principles that strengthen learners' awareness and comprehension in order to improve their decision-making skills. Although existing insights have been well researched on topic extraction and sentiment analysis in online MOOC reviews, most literature usually takes one course as the subject of study [1,4] or integrates reviews from different disciplines of courses for analysis [5,7]. However, learners may have different concerns and learning goals. Second, in previous studies [5,8], most of them mapped each comment or each sentence with one topic. However, learners usually incorporate multiple topics into a single comment. Therefore, a multi-topic analysis of single-sentence comments is necessary.

Therefore, our research questions are as follows: (1) In a Chinese MOOC, what are the top topics that learners are concerned about? (2) What are the sentimental tendencies toward learners' concerned topics? (3) How do topics interact with each other?

2. THEORY AND RESEARCH FRAMEWORK

To solve the research problems, the research framework is proposed herein (Figure 1). In this study, an iterative approach is used to classify the reviews and we use the SnowNLP to detect the sentiment of learners' comments.

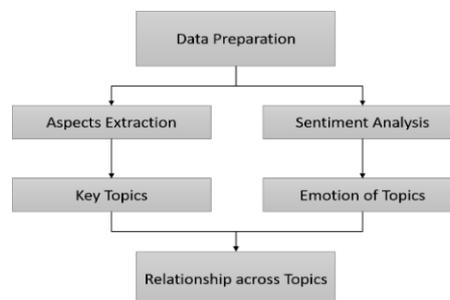


Figure 1. Research framework

The dataset is derived from the Chinese universities MOOC website (<https://www.icourse163.org/>). We select "Psychology and Life" and "Python Language Programming" as the research objects. The dataset contains 28,063 python course reviews and 11,246 psychology course reviews.

3. RESULTS AND MAJOR FINDINGS

This study observed some valuable and interesting findings: (1) Total reviews are divided into five topics: instructor, course, after-class, student and fee. The student, instructor and course topic are widely discussed by learners. (2) Most of the learners posted positive comments. (3) For both courses, the course topic displays the highest probability with the instructor topic. It is likely that learners will mention the instructor when discussing the course. (4) Learners who aim to acquire knowledge concentrate more on expressing their feelings and gains in their comments, whereas learners who aim to acquire skills depend more on acquiring skills through the teacher's explanation. (5) For skill-seeking courses, free courses and programming practice platforms boost learner satisfaction.

4. CONTRIBUTIONS

Our study can provide a reliable resource for designing MOOCs for decision-makers. In designing knowledge-seeking courses, decision-makers should consider market demand. Besides, course quality is highly dependent on the instructor. It is suggested that the MOOC platform find a humorous, devoted, and witty instructor for skill-building courses. For an after-class perspective, the after-class exercises need to be designed at an appropriate level of difficulty and with content closely related to the classroom content. In addition, we only study a simple course for each type of course, and the empirical results may be limited.

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