

# *A Contrastive Analysis of Learners' Behaviors in Different terms of a MOOC Course*

—Case Study of Management Communication

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**Abstract**—The popularity and academic performance of the MOOC course is issuing that many MOOC practitioners highly regarded. This paper analyzes the case of Management Communication, the first course in economic and management specialty, went online in Chinese University MOOC since 2015. By comparing the changing of the basic data in three aspects of MOOC, register variation, learners' post in forum and the weekly tests and final, we aimed to find the rules of learner's behaviors and the reaction of the changes in teaching strategy. The results reflect several rules in MOOC course. According to these results, this study proposes several methods and suggestions to reduce the abandonment rate by building the learning community, giving full play to the teaching assistant, proposing methods to arouse the activity of forum utilizing and presenting a clear route for MOOC teachers to appeal more people to register and finish their courses.

**Keywords**—MOOC; contrastive analysis; Learners' Behaviors; strategy

## I. INTRODUCTION

In 2012, MOOC (Massive Opening Online Course) prevailed in the United States, and quickly spread all around the world. Chinese native MOOCs have also developed rapidly in these years, especially MOOC website such as "Chinese University MOOC" of Higher Education Press, "school online" of Tsinghua University, "good university Online" of Shanghai Jiaotong University. In 2015, the Ministry of Education issued a document on "Strengthening the Application and Management of Online Courses in Colleges and Universities", and made it clear that it is necessary to build a batch of high-quality online courses represented by MOOC, identified more than 1,000 national fine MOOC in 2017, and by 2020, identified more than 3,000 national fine online. With the rapid development of MOOC, the enormous number of learners registering the course and the potential value behind the big

market has drawn much attention of people. Also, as more and more MOOC courses getting into their new terms, many problems of them are emerging such as the high abandonment rate of MOOCs. A survey conducted by the University of Pennsylvania in 1 million MOOC users found that less than 50% of the registered users finished the first class, and only 4% learner finished all courses completely? Therefore, how to allow more students to learn their courses and complete the entire learning process? This is MOOC teaching workers need to solve the problem in a new background.

## II. PRIOR RESEARCH

Belanger Y, Thornton and J. assessed the first MOOC in Duck University by analyzing the student activity and outcomes and other findings such as the size and diversity of the surveyed to enhance the course experience for the instructor and the students [1]. MOOC learner's behavior is self-driven, that is, the inherent learning motivation to promote learners enrolling courses. The foreign researches of MOOC learners' motivations found that the main motivation of learning included interest in topics (87%), career development needs (44%), and interest in teaching methods to learn knowledge and skills (55.4%)[2]. The domestic questionnaires also showed similar results, 79.8% of the respondents said they were strongly interested in the course content, 75.76% of the respondents considered MOOC as an access to high quality courses or good schools, 45.96% of the respondents think that the course is very useful for work and study.

The high abandoning rate of distance education is one of the important phenomena that are frequently concerned, and MOOC also presents the same trend. The study of MOOC in China has found that the abandon of distance learners is the result of the interaction of multiple factors. These factors are relating to learners themselves (Including learners' education, environment, psychological background, etc.) and relating to

the educational environment (Including teachers, schools, learning system support, etc.). [3-5]

In view of the high abandoning rate of MOOC learners, the discussion area of MOOC can play a significant role. In the MOOC discussion area, students can discuss a problem from their own perspective. Some instructors and assistants are also actively involved in the discussion. Learners through the social networking platform learn better than before. For the effect of the discussion area, some scholars have studied the impact of the curriculum forum on the course passing rate. However, there is little literature giving a more accurate quantitative interpretation. This paper attempts to analyze the influence of the discussion area on the completion of the course more accurately.

### III. DATA AND ANALYSIS

#### A. Data Collection

In this study, we selected the popular management course Management Communication in Chinese university MOOC as the research object. "Management communication" MOOC is one of the earliest MOOC of economics and management subject, since went online in September 2015, it has operated four rounds before September 2017, the number of registers accumulated more than 80,000. The teacher received a number of awards. As the carrier of practice, this course has made a series of teaching achievement, resulting in a wide range of social influence. In the four terms of the course, the first term of the course is operated in the first year of Chinese University MOOC, so the data is quite different compared to the last three terms. Therefore, we selected the second, third, fourth terms for the study.

Chinese University MOOC is the most influential MOOC website in China, there were 1373 courses in this platform before 2017. Through the Chinese University MOOC background, we selected the second, third, fourth terms of "management communication course" teaching data to study MOOC learners' learning behavior by a qualitative and quantitative analysis. The following table is the basic information of the three terms of Management Communication.

TABLE I. BASIC INFORMATION OF MANAGEMENT COMMUNICATION

Term	Period	Register number	Actual tested number	Total post number	Participators in the Discussion Area	Participators in the final exam
2	2016.04.22-2016.07.08	14498	1079	2370	913	339
3	2016.09.22-2016.12.14	15316	1590	4917	1079	409
4	2017.03.09-2017.06.15	16928	2036	4195	1448	489

#### B. Analysis Method

This paper uses the method of quantitative and qualitative combination to observe and study the text content of the

"Management Communication" course discussion area, especially analyze the variation in three terms based on the different strategies taken by teacher and assistants. We are mainly discuss the data collected in the enrolling process, the number of posts, and the data of test taking and other aspects for quantitative analysis.

### IV. DATA DESCRIPTION AND ANALYSIS

#### A. Enrolling Behavior Analysis

The learner's enrolling behavior is a very important learning behavior, and it is also the general concern of the teachers, because the number of enrolling reflects the popularity in some way. Early from the present of the introduction page presented, until the final exam, the number of students is increasing every day. And it reflect a similar fluctuate in these three terms. This is a very meaningful for teachers to grasp the opportunity to attract more learners.

According to the daily study data of "Management Communication" in three terms, we can find following phenomena and regular pattern.

First, the peak of enrolling behavior is mainly appeared around the start day. It is easy to observe the peak of enrolling trend of the three terms in an enrolling trend line chart in Fig. 1. Obviously, the number of daily registers reached the peaks within a few days after the start date, and then gradually became stable. In the second terms of the course, the peak appeared on the fifth day after the starting day; reach a number of 1107 people. In the third course the highest single-day number reached the peak of 716 on the starting day; the fourth term also reached the highest single-day number 572 on the starting day, and on the 16th day after the start, the highest single-day enrolling number 590.

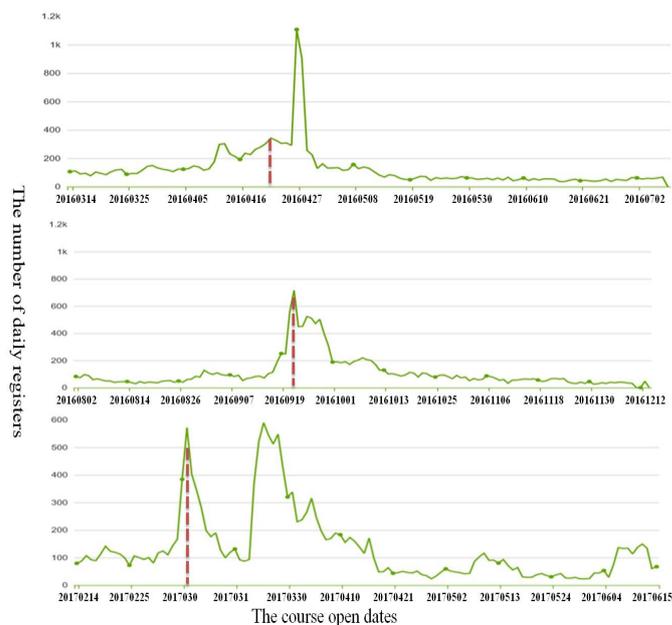


Fig. 1. Information of register in three semesters

Second, there were certain learners enroll almost every day. Based on the statistics, in the total number of school days for

391 day, we found that there were only three days have no new registers. Even if the course had gone into its final exam stage, there were also some students enrolled. According to the course data, the number of students in the last week of the three final examinations was 424, 149 and 794. There were 794 students in the fourth week of the course before the final class, accounting for 4.69% of the total number.

The following conclusions can be drawn from the above data:

In traditional education, the number of students fixed before the course started, teaching scale has been identified before the start. But in the MOOC teaching, enrolling behavior is consistent from start to finish. According to the data of three terms, we can see the number of enrolling before the starting day. In the second term, the number of enrolling before starting day is 7413, accounting for 51.13% of the total number. In the third term the number of enrolling before the starting day is 5984, accounting for 39.07%. the fourth term is 30 days, the number of register is 4,994, accounting for 29.50%. More learners are registered in the middle and later stages of the course. This is not consistent with the original intention of the lesson. On the other hand, it also tells the teacher that if you want to attract more learners, the effort after the start is more important than the preparation before the start.

*B. MOOC Forum Performance Analysis*

The MOOC forum is the core function area of MOOC teaching. The activity of discussion forum reflects the enthusiasm of learners[6-7]. In addition, many MOOC activities such as teacher Q & A, topic discussion, essay activities and other activities require learners to participate in through it. MOOC forum data include: the total number of posts, the number of teachers posted, Number of participants and so on.

TABLE II. THE PERFORMANCE OF MOOC FORUM

term	Total number of posts	Number of teachers' post	Number of participants	Per capita postings	The sum number of top 5 learner's posts
2	2370	43	913	2.59	136
3	4917	50	1079	4.56	1317
4	4195	53	1448	2.89	200

By contrast the forum data of three terms, we can see that in the third terms, the posts from teachers increased slightly, while the third and fourth courses of the total number of posts and participation increased dramatically. Compared with the second and third forum data, it is easy to find that the total number of posts in the third period is more than twice that of the second period, while the third issue of the postal volume reached 1.76 times of the second period. The huge fluctuations here originated from the Chinese university MOOC platform in the current launch of the "scholarship" program, some students made a lot of post aiming to obtain a scholarship. By observing the top five learners on post number, we can find that the top five posters of third terms posted over 1317posts, and it is 10 times more than the fourth term, of and 6 times more than the fourth term, accounting for 26.78% of the total number. On the other hand, the fourth course platform did not carry out

scholarships, but the discussion area was more active, compared with the previous two courses, the fourth course has more participation in the interaction. This should be attributed to the fourth semester, the curriculum team focused on building a learning community, not only established a core learning group with more than 400 core learning, but also in the discussion area to guide students to others as a session of the students, to encourage students Mutual help each other to get better results.

Thus, we can also conclude that certain incentives are important to improve the activity of the forum. At the same time, it is very important to cultivate activists to improve the activity of the forum. Activists will activate the forum atmosphere by encouraging others, refute others, encourage others and ask questions to others. The establishment of learning groups can enhance the social attributes and information exchange among learners' learners, helping to help learners complete the course and pass the tests.

*C. Academic performance*

The academic achievement is the core of the teaching quality evaluation of MOOC, and the degree of learners' serious study[8]. Participants who participate in the test are in-depth learners who are able to complete all the tests and participate in the final examinations. The learners who have achieved the passing test are complete.

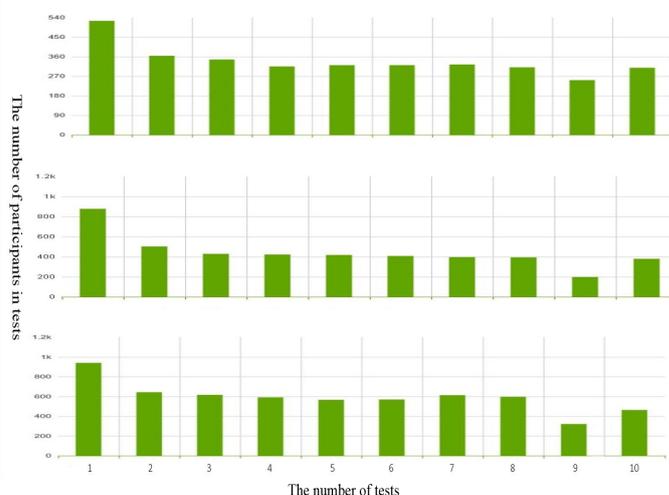


Fig. 2. The number of participant in the 8 weekly texts, the mid-term test and the final exam

Through the statistics of the completion of the ten test passes of the "Management Communication" course, it can be found that the number of test participants is generally declining, and the change can be summarized as two stages: 1) the first rapidly decline, both in the second week when there is a larger inflection point, and then continue to decline; 2) and then remained relatively flat (increase or decrease, but the overall change is not the number of people involved in the test tends to be stable, which also reflects the MOOC core learning groups have been formed.

**TABLE III. THE INFORMATION OF FINAL EXAM**

term	Total number of learners	Learners participant in tests	Good	pass	fail
2	14498	339	11	207	121
3	15316	409	34	223	152
4	16928	489	23	270	196

By analyzing the above table data, we can find the following:

The number of people attending the exam is very limited. The number of participants in the three courses accounted for 2.33%, 2.67% and 2.88% of the total number of registers respectively. This data is also consistent with the situation of Mu Ji high school rate. Among the students who participated in the examination, the pass rate of the three courses was 64.31%, 62.84% and 59.92% respectively, and the excellent rate was 3.24%, 8.31% and 4.70% respectively. The passing rate and the excellent rate depend on the difficulty of the examination and the teaching behavior of the instructor. The third phase of the course did not carry out pro forma work, but the fourth pass rate is lower than the second period, but the excellent rate is higher than the second period, we think this is due to official enrolling from colleges and universities.

#### V. CONCLUSION

Based on the results of this study, the following suggestions are made for MOOC to improve the viscosity of the course and to keep the enthusiasm of learners and to reduce the rate of abandonment.

First, the course team should not only carry out the promotion and publicity work before the start of the course, but also should keep on doing such work during the whole term. The course-based media and the reputation relative to the course such as self-media can help attracting more people to learn the course. The course team needs to focus on the construction of the introduction page, based on the skills to enhance and get satisfaction to highlight the course content, at the same time, the course team should also show the quality and the interest of the course as much as possible to fully demonstrate the charm of the course

Second, learning community can strengthen the interaction between teachers and students. Through the cooperative learning activities, Learners share knowledge and information with others, not only to complete the course of learning, but also can cultivate a common interest, and gradually form a the sense of belonging and identity of the community. In the learning community, teachers and students discuss with each other on the course of learning and emotional issues, which is helpful to achieve teaching and learning, the common progress of the win-win situation. The course team can organize the

course group through social software, or guide the students to construct group identities in the forum, such as regularly announcing the passing of the examinations and examinations, in order to gather a sense of collective and stimulate the study of passion, challenge the older generation to stimulate a sense of accomplishment, which is beneficial to improve the course reputation.

Finally, the instructors or course assistants should give full play to the guiding role and encourage some non-active learners to participate in the course discussion. The results show that learners are more willing to participate in the discussion topics organized by the instructor, which means that instructors or course assistants need to give full play to the guiding role and take a variety of measures to encourage more learners to participate in the course discussion.

Teachers can make efforts from the following aspects: firstly, replying timely to the learner's questions; secondly, designing carefully the discussion topic, using a combination of thematic discussion and free discussion to attract more learners to join the discussion. Thirdly, mobilizing the enthusiasm of learners fully can encourage learners to participate in the discussion by the more encouragement and affirmation. In addition, increasing the topic of emotional discussion can narrow the gap between the learners.

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