

Research on the Development Strategy of MOOC Platform Based on Scene Value Co-creation

Taking "MOOC of Chinese University" as an example

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Abstract—MOOC has become a hotspot in the development of education informatization in our country. While the MOOC platforms are booming, their shortcomings gradually appear. Based on the theory of Scene Value Co-creation, this article establishes a theoretical model, and chooses "MOOC of China University" as the investigation platform, and designs questionnaires from four angles of function, usability, reliability and performance, and investigates the needs of users. Through the demand analysis, the paper explores the optimization strategies of the MOOC platforms to realize the value co-creation between the platform and users.

Keywords—MOOC; Scene Value Co-creation; "MOOC Of Chinese University" platform; Optimization strategy component.

I. INTRODUCTION

Massive Open Online Courses (MOOC) has attracted intense attention and research due to their Massive, Online and Open nature. Since 2013, MOOC have entered Chinese teaching reform and related education research in an all-round way. Many MOOC platforms have sprung up in China: Tsinghua University launched the first MOOC platform in China - "Xuetang Online" in October 2013; MOOC platforms built by non-universities are also booming, such as Super Star, which gathers nearly 130,000 academic video episodes and courses of 5,300 famous teachers.

As the rapid growth of domestic MOOC platforms, a lot of external and internal problems appeared gradually, according to the survey, effective learners for Chinese MOOC lessons accounted for only 9.76% on average. The academic circle has also expressed concerns and doubts about the sustainable development of MOOC, and people's cognition of MOOC has also started to be rational and objective. Therefore, it is of great significance to reflect on the development of MOOC and MOOC platforms.

II. RESEARCH STATUS OF MOOC PLATFORMS CONSTRUCTION AT HOME AND ABROAD

With the development of MOOC, some related emerging concepts have emerged rapidly, such as xMOOC, cMOOC, sMOOC and tMOOC, and more excellent MOOC teaching models have been carefully explored. The European Project ECO (e-learning, Communication, open-data) is also working on developing a new teaching model based on MOOC, which not only allows universal design, but also supports open and universal education.[1] The development of MOOC and MOOC platforms has attracted extensive attention of scholars at home and abroad.

In recent years, scholars at home and abroad have studied the development strategies of MOOC platforms from different perspectives. Y. Han et al. [2] focused on how knowledge presentation tools enable students to adjust their order to meet personal needs and how optimization techniques can effectively match community teaching assistants with MOOC work, exploring and investigating strategies to improve learning experience. Domestic researches also pay more attention to the users' experience. F.X. Han [3] divided the MOOC platforms into different levels based on the using intention of teachers and students, and proposed targeted optimization strategies. F.Y. Qian, J.H. Fan et al. [4] built a honey comb model based on experience, and obtained the optimization strategies of MOOC learning APP experience through the comparative analysis of different dimensions of the MOOC platforms.

This study, based on the integration and innovation of previous studies, focuses on both MOOC platforms and student users. Taking "MOOC of Chinese University" as the research platform, the study investigates users' satisfaction with the functions, usability, reliability and performance of the platform. Based on Scene Value Co-creation theory, the optimization

strategies of MOOC platform are explored in depth to realize the value co-creation between the MOOC platform and student users.

III. RELEVANT THEORIES AND CONSTRUCTION OF THE MODEL

A. Scene Value Co-creation Theory

Scene Value Co-creation means that enterprises create value with users through the designing and constructing scenes. Scene refers to the total relationship between people and their surrounding environment, which is composed of hard elements such as places and scenes and soft elements such as atmosphere. Scene Value Co-creation is based on scenes. In the process of scene creation, scene force plays an important role. It refers to the dynamic ability of an enterprise to provide products and services timely to meet users' needs and increase users' experience so as to improve users' perceived value in a specific situation composed of time, place and emotion.

J.H. Jiang, R. Liao et al. [5] have used the Scene Value Co-creation theory to study the business model innovation of enterprises, and analyzed the motivation and mechanism of the application of this theory.

This study applies this theory to explore the path of co-creation of scene value between MOOC platform and student users. Based on this theory, the MOOC platform not only conveys knowledge but also provides learning services. It is no longer a one-way knowledge conveyor, but a participant in education.

B. Construction of the Research Model

According to the common characteristics of student users and combining Peter Morville cellular model[6] that is widely used in the study of users' experience and the software requirements classification method-FURPS+. Users' requirements are divided into function, usability, reliability and performance.

According to the Scene Value Co-creation theory, build the value chain between users and MOOC platform and the users' experience, community feeling and link utility are the driving force of value creation. Usage needs and emotional needs are generated in the process of interaction between users and the MOOC platform. The platform uses scene force to optimize itself and meet users' needs. In this process, on the one hand, users realize their own value creation; on the other hand, users' needs are fed back to the platform, then the platform makes improvements to form the platform's value creation; the two are the general path of value co-creation. The research model is shown in the Fig 1.

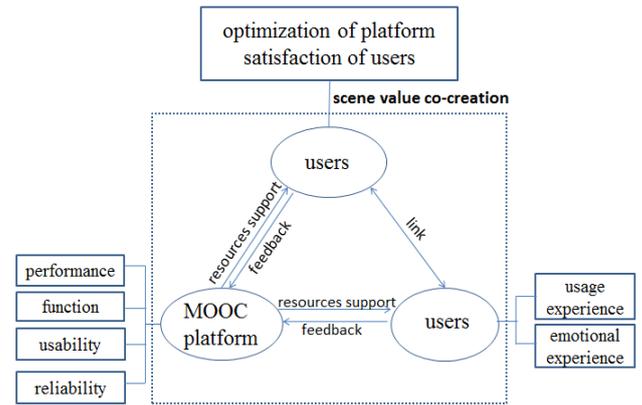


Fig. 1. The model of Scene Value Co-creation between MOOC platform and users.

IV. QUESTIONNAIRE DESIGN

This study uses questionnaire survey to obtain the required data, which is divided into four parts. In the problems design, five-point scale method is adopted, with 1 point indicating very unsatisfied, 5 points indicating very satisfied.

A. The First Part :Collecting the Basic Information of the Interviewees.

The first part contains five questions: "Your gender", "The highest level of the institution you attended during your schooling", "Your present identity", "Your highest degree" and "Your major".

B. The Second Part:Selecting Effective Respondents

Effective respondents are selected by two questions: "Do you use MOOC platforms?" And" Have you ever used 'MOOC of Chinese University'?" Users answering "Yes" will jump to the following questions; while users answering "No" will be asked the reasons for not using them and their suggestions, and then the questionnaire survey for these people will be completed.

C. The Third Part:Investigating User's Stickiness

The third part contains three questions: "Your frequency of using 'MOOC of Chinese University'", "Your maximum usage time" and "You reasons for your continued usage".

D. The Fourth Part:Investigating User's Four Demands

The fourth part is the core of the questionnaire, and contains eleven questions, such as satisfaction of professional coverage, learning efficiency, evaluate system, assessment system, interface settings and so on.

V. DATA COLLECTION AND SAMPLE DESCRIPTION

The research questionnaire is mainly distributed through network channels, mainly to college students. Finally, a total of 386 samples of data were obtained, and 232 effective questionnaires were selected (Users who have used "MOOC of China University").

Firstly, the statistical software is used to analyze the reliability of all subjective questions. The reliability of the total is greater than 0.9, and the reliability of all dimensions is above 0.7. Then the structural validity of the questionnaire was measured, and the KMO value was 0.972, indicating that the reliability and structural validity of the questionnaire were good. Descriptive analysis of samples is shown in the Fig 2.

VI. RESULTS AND DISCUSSION

A. Functional Aspects

1) *Professional coverage*: The professional coverage of MOOC platform will directly affect users' experience, and most users in the survey are satisfied with the professional coverage of the platform.

2) *Impact on users' learning efficiency*: In the process of learning experience, users are likely to be directly or indirectly affected by the MOOC platform. Most of the respondents learn with average or high efficiency through the MOOC platform. Further investigation on the influencing factors of learning efficiency found that "lack of constraint" accounted for the highest proportion, and most users still need the supervision and motivation.

3) *Impact on the connectivity between users*: Discussion area is the site where MOOC platforms realize the link between users. From the point of direct survey results, the functional construction of the MOOC platform is not perfect; its community effect is still below pass-level. It basically fails to show the advantages of high efficiency of community effect, high degree of participation and high loyalty to the platform, so there is still a large space for development.

4) *The substitution of MOOC for traditional classes*: The survey results show that the undifferentiated substitution between the two learning styles is extremely difficult to achieve, and different types of courses also have obvious differences in the substitution degree of MOOC. Among them, public basic courses, elective courses and other courses with weak professionalism are replaced to a greater extent, while for disciplines with strong professionalism the traditional teaching mode is more favored by users due to the great difference between schools.

Items	Options	The number of people	Proportion
Gender	Male	109	46.98%
	Female	123	53.01%
The highest level of the school during study	The original 985 group of universities	161	69.40%
	The original 211 group of universities	39	16.81%
	Top public universities	29	12.5%
	Basic public universities and so on	23	9.91%

Fig. 2. Descriptive characteristics of the samples.

B. Usability Aspects

1) *The teachers level*: The level of teachers will directly affect the learning experience of students on the platform. The results show that as many as 70% of students are satisfied with the level of teachers. Therefore, it can be seen that the "MOOC of Chinese University" platform is relatively perfect in terms of the level of teachers.

2) *Impact on utilization of users' fragmentation time*: Users' utilization degree of fragmentation time will largely affect users' willingness to use and link, the survey found that less than half of the users are satisfied with the degree of fragmentation time utilization, and nearly 12% of people have made it clear that they are dissatisfied. Most users think that the utilization of fragmented time in the learning of the platform is not high or even low, which will reduce users' willingness to use and have a direct negative impact on their value co-creation.

C. Reliability Aspects

1) *Certificate recognition*: The data results show that only 27.27% of the users think the certificates granted are useful, and most of them (39.39%) hold a neutral attitude, indicating that the certificate has a certain degree of recognition in the society, but the recognition level still needs to be improved.

2) *Course evaluation system*: According to the results, the majority of users (42.42%) hold a neutral attitude towards the course evaluation system of the platform, and the platform still needs to continue to improve the course evaluation system and its reliability.

3) *Course completion assessment system*: The majority of users (46.32%) are generally satisfied with the assessment system, and 42.85% of platform users are satisfied with it. Although the course assessment system is recognized by nearly half of users, some users are still neutral or even not satisfied with it.

D. Performance Aspects

This study investigated the satisfaction degree of users with the platform interface settings during the learning experience including the search engine, classification navigation and the ease degree of the interface operation. The average score of the three interface settings is around 3.7, and most users are satisfied with the three interface settings of the platform.

VII. OPTIMIZATION STRATEGY OF "MOOC OF CHINESE UNIVERSITY"

Through the analysis and integration of the demands of "MOOC of Chinese University" users, the following optimization strategies are proposed for the platform from the perspective of learners.

A. Function: Increase the Binding Design of User Learning and Enhance the Connection Between Users.

MOOC learning is a user-centered learning mode, which requires users to have high self-learning ability and self-restraint ability. However, learners always have some inertia, so it requires the platform to help users control their learning activities through binding design. Based on this consideration, the platform can set up periodic clocking to provide periodic rewards for users who go online every week. Mandatory play mode can also be set to automatically play the corresponding course according to the time period planned by users, and it is forbidden to switch to other interfaces; In addition, the platform should strengthen lesson assessment and set homework during and after the course, and track and supervise users' learning.

In addition, compared with traditional teaching, online learning only involves simple human-computer interaction and lacks instant interaction between users. This lack of community effect has been criticized for a long time. Therefore, the MOOC platform has set up discussion areas to make up for this deficiency. Teachers and learners can post topics and participate in the discussion areas, however, this way is usually asynchronous communication, and information cannot be timely feedback, which easily affects learners' initiative in learning. Therefore, in addition to the existing discussion area, the platform can set up discussion groups for teachers and students of each course, teachers can upload courseware books and other resources in the groups, and set a fixed time for students to answer questions, so as to make up for the real-time interaction defects of the platform.

B. Usability: Video Course Length Combined.

Courses in "MOOC of Chinese University" are mostly in the form of short video, which can solve the problem of students' inattention in the long learning process, but the knowledge taught is often too fragmented due to the time limit, making it difficult for users to digest by themselves and forming a systematic learning system. Therefore, the platform can appropriately extend the standard length of MOOC courses on the basis of ensuring users' demand for fragmented learning time. The combined teaching of short and long video can be introduced, such as detailed explanation in long video course, summary of knowledge points in short video course or simple introduction of knowledge system.

C. Reliability: Improve the Gold Content of MOOC Certificate, and Design a Reasonable Course Scoring Calculation Method.

Course completion certificate is one of the driving forces for users to learn on the platform. The MOOC platform can design some difficult exams so that the certificates are no longer limited to the certificate of academic completion but to the certificate of ability. At the same time, the platform can contract the human resource recruitment business of some big companies. Users who perform well in the course can obtain certificates granted by the platform and be qualified for interviews.

When designing the assessment system of MOOC courses, MOOC platform should not only pay attention to the category of courses, but also combine the examination of basic knowledge of courses with ability test. The platform can work with course professors or experts to design a set of assessment system suitable for this course.

D. Performance: Optimize Interface Function Module and Improve Learning Navigation.

Clear and explicit navigation plays an important role in users' MOOC learning. It not only enables users to quickly find required functions in massive information, but also enables users to learn more systematically. Therefore, the platform can design clear functional modules to present knowledge unit navigation in the form of learning activity sequence. Design clear learning navigation positioning, so that users can quickly and easily determine the current learning position; personalized reminders of progress can be added with appropriate design, so that users can get clear information about the current learning progress and the completion of homework.

VIII. CONCLUSION

Through the investigation and analysis of the status quo of "MOOC of Chinese University" users' experience from four aspects including function, usability, reliability and performance, in the learning experience process, the study from the perspective of the users puts forward to strengthen the user study binding design, build value communities such as discussion boards to enhance the learning atmosphere of the course, set up real-time interactive function, enhance faculty, develop curriculum resources, enhance the gold content of MOOC certificates, design more reasonable course score calculation method, optimize the interface function module, improve the learning navigation, design barrier-free interface and so on, in order to construct a learning environment that meets users' usage and emotional needs.

MOOC platforms should focus on users' experience, connection and interaction between users, and interaction between users and the platform to optimize the platform design, and enable users to get better experience and connection in learning, which will be more conducive to the sustainable development of MOOC platforms.

From the perspective of value co-creation between the platform and users, this study constructs a value co-creation model based on scene value, and the study investigates and analyzes to obtain the improvement and optimization strategies of MOOC platform from users' perspective. It is a relatively new point of view, but it has some subjectivity in the research theory and method, which still needs to be improved. Future research on the development strategies of MOOC platform should pay more attention to the combination of qualitative and quantitative methods, the combination of objective and subjective methods, and the comprehensive attention to users' needs from all angles and improving the relevant theories in order to more comprehensive and in-depth research on the value co-creation between MOOC platforms and users.

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