Student Performance in MOOCs

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COVID-19 has drastically changed human life, both in the current era and, no doubt, in the years to come. One of the hot topics during this period is whether and how COVID-19 will change education patterns in the next few years. This entry aimed to investigate the relationship between massive open online courses (MOOCs) and students' learning performance. To that end, this entry combined the gamification concept with the modified information systems (IS) success model and the expectation–confirmation model (ECM) for building a research model. We surveyed 586 students through an online survey and tested the hypotheses. The results indicated that MOOCs' information quality (IQ), system quality (SQ), and service quality (SEQ) had positive influences on the confirmation, which then affected MOOCs' usefulness, satisfaction, and gamification. Students' continued usage intention and course performance were positively influenced by usefulness and gamification. Students' continued usage intention of MOOCs also positively affected course performance. The relationship between gamification and satisfaction, however, was not proved. The results also showed that gamification, which was composed of entertainment, challenge, and social interaction, played a critical role in improving students' continued usage intention of MOOCs and their course performance.

MOOCs MOOC higher education sustainable education IS success model expectation–confirmation model gamification continued usage intention course performance student performance COVID-19 Chinese universities

1. Introduction

In response to the COVID-19 outbreak at the beginning of 2020, the Chinese Ministry of Education has proposed the "Disrupted classes, Undisrupted Learning" principle, which provides flexible home-learning to students from primary school to university. For the first in history, schools and universities closed the offline classes as an emergency measure to prevent the virus infection. Many traditional online education platforms expanded their course resources, and some Internet giants such as Tencent, Alibaba, Baidu began to hit the online learning field. Thanks to the massive open online courses (MOOCs) education, hundreds of millions of students nationwide could continue to study.

The focus of previous research on MOOCs was varied. Some leading topics include MOOCs scholarship, teacher and students' motivation as well as challenges, engagement, and retention, social mobility, self-regulated learning, accessibility. Among diverse research methodologies that were used for discussing MOOCs, gamification was a

notable one. The low retention and completion rate is one of the main problems of MOOCs. At the same time, it suggested that gamification had positive influences on users' behavior in IS research as well as the education field.

However, so far, very little empirical research conducted to explore and discuss how the gamified mechanism of MOOCs influences students' course performance. This entry examined the relationship between MOOCs and students' course performance empirically. We employed a modified IS success model, expectation-confirmation model (ECM), and gamification concept for finding the factors behind the improvement of student's course performance. For the analysis and research hypothesis test, we use covariance-based structural equation modeling (CB-SEM).

2. Empirical Research and Results

We surveyed 586 students through an online survey to test the hypotheses. The results indicated that system quality, information quality, and service quality had positive influences on the confirmation, which affects MOOCs platform usefulness, satisfaction, and gamification. Usefulness and gamification have positive effects on students' continued usage intention and course performance. Students' continuance intention on MOOCs also positively affects course performance. The impact of gamification on satisfaction, however, is not supported. The results also indicate that gamification, which is composed of entertainment, challenge, and social interaction, plays a critical role in improving students' continued usage intention on MOOCs and their course performance. We expect that these findings provide useful insights and implications to service providers when making competitive strategies to develop and improve the MOOCs platform.

3. Theoretical Implications

This entry makes several theoretical contributions. First, we utilized an integrated framework combined with DeLone and McLean's IS success model with Bhattacherjee's ECM and gamified features of MOOCs. We investigated the overall MOOCs platform quality confirmation through the ECM framework. The integrated framework ensures that the MOOCs' platform qualities (information quality, system quality, and service quality) confirmation links students' perceived characteristics, post usage intention, and learning performance. This entry also contributes to empirically investigating the proposed model through questionnaires in the context of COVID-19. Second, most researches in the field of MOOCs primarily focuses on the intention to use or intention to re-use. This entry extends the research model to synthesize MOOCs' continued usage intention and course performance, and empirically tests the influences of cognitive perceptions of MOOCs on the course performance.

4. Practical Implications

As to the practical implications, the results showed that MOOCs' platform qualities have significant influences on the platform quality confirmation, among which information quality has the most decisive influence, followed by service quality and system quality. MOOCs platform managers should improve information quality continuously. As

the service quality of MOOCs platforms is lower than students' expectations, MOOCs platforms managers should pay attention to the online service or call center service construction. One of the reasons for this phenomenon might be with the increasing number of users during COVID-19, users could not get consulting service timely. The results also indicated that system quality significantly influences the confirmation with a slight estimate. This emphasizes the importance of system quality in the management of the MOOCs platform. The results showed that perceived usefulness and confirmation of MOOCs significantly influence students' satisfaction with the MOOCs platform. MOOCs platforms managers should improve and upgrade the system itself and course materials to provide better user experiences. Finally, this entry showed that the continued usage intention of MOOCS has a significantly positive influence on the course performance. MOOCs managers should develop a mechanism to stimulate students' course completion rates. Another significant implication of this study is the inclusion of gamification. Gamification has significantly influenced students' continued usage intention and their course performance. During COVID-19, unlike in the past, students have to take all of their classes online, and the average online learning time is between 6-8 hours per day. It is necessary to make MOOCs more exciting and attractive to students because one of the primary problems of MOOCs is the low completion rate.

In conclusion, the results of this entry fill the gaps in the MOOCs and students' course performance area, assisting service providers in implementing appropriate strategies.