Perception Research on Gamification Teaching Design of University Tourism Online Courses Against the Background of Epidemic Situation

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ABSTRACT

Gamification refers to the application of core elements of games in non-game fields to stimulate participation motivation, so that users can have better performance. In higher education, the purpose of applying gamification elements to design classroom teaching is to motivate students, improve the efficiency of independent learning, and achieve the expected learning behavior. The purpose of this study is to explore the perceived effects and challenges of the gamification instructional design of large-scale tourism online courses in the context of the epidemic. The results show that competitive behavior has a significant impact on students' learning outcomes. At the same time, timely evaluation and feedback can have a high incentive effect on students.

Keywords: Gamification, Tourism online courses, Online courses, Perception research.

1. INTRODUCTION

With the rapid development of Internet technology and digital platform, the internet-based online teaching mode provides a new path for classroom teaching mode, learning mode and management system, and also challenges how to improve the effect of students' learning (Zhong Binglin, 2015). In April 2015, the Ministry of Education, in the "Opinions on Strengthening the Construction, Application and Management of Online Open Courses in Colleges and Universities", made several suggestions on "accelerating the construction of online open courses and platforms suitable for China's national conditions" (Ministry of Education, 2015), which pointed out the direction for further improving the quality of classroom teaching.

At the beginning of 2020, a sudden COVID-19 occurred. Under the requirements of "no suspension of classes or schools" or "no suspension of classes or schools", all the teaching in colleges and universities across the country was moved online. Its wide range and scale attracted great attention from the society (Huang Wenxiang, Li Yadong&Zhang Xisheng, 2020). Although online teaching has certain advantages, its challenges are

also obvious. The first is how to change the learning state of students with insufficient learning motivation (Liu Yang, 2019). The second is how to encourage students to communicate with teachers online (Chen Wuyuan & Cao Honglei, 2020); Finally, it is how to maintain students' enthusiasm in participating in classroom teaching content and activities (Jin Songli, 2021). Therefore, how to further improve the online teaching quality of college students' classroom becomes extremely urgent (Ma Yun, 2019).

Relevant research shows that gamification teaching design, as a method to improve teaching quality, is intended to use game design elements, such as points, badges, trophies, and leaderboards, in non-game environments, to give non-game system users a game interest, which has been widely used in offline courses and has achieved good results (Sun Qing, 2018). However, the use of online teaching is not sufficient (Zhou Liyun, 2020). The School of Tourism and Hospitality Management of University of Sanya began to try the idea of gamification teaching design of online courses as early as 2021, and has been applied to courses such as "Digital Marketing of Hotels", "Public Relations of Hotels", "Management of Tourism Destinations", "Human Geography", and

"Overview of Tourism Management". The purpose of this study is to understand the effect of gamification teaching reform from the perspective of tourism students, that is, how students perceive the impact of gamification teaching design on their online learning experience, and hope to have some inspiration for teaching workers engaged in related disciplines, so as to improve the quality of classroom teaching.

2. LITERATURE REVIEW

2.1 Gamification

The idea of combining games with teaching was first put forward by Bowman. Later, Driskell and Dwyer (1984) studied whether video games can improve students' learning interest and motivation, and believed that video games can improve students' learning motivation. Nick Pelling put forward the concept of gamification in 2002 (Ulicsak & Wright, 2010), but it was not until 2010 that it became popular in academia. At present, the accepted definition of gamification in academic circles was put forward by Nacke et al. (2011). The definition simply sets gamification as "using game design elements in non-game environments". The advantage of this definition is that it describes the means of gamification (the use of game design elements) and the scope of application (non game) in a broad sense. On this basis, other scholars have defined the methods, objectives and application background of gamification with different emphasis. Among them, the more representative is Fitz-Walter et al. (2011) proposed "adding game elements to applications to motivate users to use and enhance the user experience"; Huotari and Hamari (2012) propose "the process of enhancing services by providing a gaming experience to support the overall value creation of users"; Mekler et al. (2013) emphasized that "the use of game design elements (e.g., points, leaderboards, and medals) in non-gaming environments... promote user engagement"; and de Sousa Borges et al. (2014) arguing that "the use of game-based elements such as mechanics, aesthetics, and game thinking in non-gaming environments is designed to engage, motivate action, enhance learning, and solve problems".

From the various definitions put forward by the above scholars, they all believe that gamification systems need specific user participation objectives; The goal of the tool is how to achieve them by selecting game design elements. However, they did not point out how to select these game design elements for specific tasks, and how they interact with each other and create the expected interaction of users, so as to ultimately promote user participation and guide them to achieve the expected design goals. Games used daily can not only entertain users, but also help shape their behavior. In teaching, especially in online teaching environment, it is necessary to enhance users' motivation and participation. After all, the characteristics of distance courses determine that it is difficult to establish a commitment between students and the platform like offline education (He Baoxun, Zhang Liguo & Zhuang Kejun, 2021). Gamification can play a powerful role in changing students' learning behavior, because it can promote problems to develop in a more interesting way. Therefore, Deterding et al. (2011), in order to achieve the above objectives, gamification must have the following four characteristics: 1. zero cost, simple operation; 2. There is no need to generate new content, only need to improve learning methods; 3. Implement gradually; 4. There is no possibility of losing.

2.2 Gamification Incentive and Participation Mechanism

The development of gamification design must consider the internal and external motivations of users (Yang Shuang, 2021). The goal setting theory proposed by Locke and Latham (2002) is often used to explain the idea behind the gamification design of curriculum. They believe that goals can be defined as the final state that a person hopes to achieve in a specific time under a specific environment, and goals can affect people's motivation and performance through four mechanisms: providing cognitive and behavioral direction, increasing people's energy and effort to deal with tasks, increasing their perseverance to complete tasks, and triggering emotional reactions, such as improving satisfaction. Therefore, gamification design helps people set goals (especially when rules are clearly defined) and increase their behaviors related to achieving goals (Ji Guangping & Liu Xiumei, 2013). Through the above four mechanisms, gamification design can encourage users to set goals to pursue, force them to concentrate and strive to complete the target tasks, strengthen their perseverance by trying and trying again, and finally arouse their pride after the goal is completed (Huang Jian, 2021).

Feedback is another mechanism by which gamification affects user performance and motivation (Ma Yingfeng & Hu Ruonan, 2016). Feedback is defined as information about how an individual's current knowledge and performance status are related to the set goals and standards (Wu Manli, 2016), which plays a crucial role in the performance and motivation of learners (Li Hongxia et al., 2021). Gamification design will provide users with feedback on performance and mastery, thus arousing their future performance and motivation, such as competence (Sun Min, 2020).

2.3 Gamification Teaching Design

Gamification instructional design aims to support students' learning and improve their learning efficiency in various ways. Its main idea is to deeply integrate game elements with teaching, effectively guide students' interest, attention and motivation, with a view to influencing students to achieve specific learning goals (Zhang Yangyang, 2014). It should be noted that gamification teaching is not equivalent to games, computer software, or simulated games. The key of gamification teaching is to integrate gamification elements, such as questions, challenges and rewards, into the teaching process. Therefore, the gamification teaching design must include four elements that are facing all students, challenging, preset and generated, and reflecting the teaching concept of the course (Cai Chen, 2018).

3. RESEARCH METHODS AND DESIGN

3.1 Experimental Participants

The participants in this experiment are undergraduates majoring in hotel management, tourism management and exhibition economic management at University of Sanya, ranging from 18 to 19 years old. All participants have a basic understanding of online courses, but have no experience of gamification learning. Participants were randomly sampled. The overall sample is 37, including 13 boys and 24 girls.

3.2 Experimental Evaluation Tools

In order to understand the students' real perception of gamification instructional design, this study uses qualitative research methods and collects research data through focus group discussions and semi-structured interviews. Semi-structured interviews are often used in human behavior research. Their purpose is to encourage two-way communication and allow interviewees to freely express their views (Lu Xinyuan et al., 2022). The focus group discussion aims to obtain participants' views and attitudes quickly and directly through moderate interviews with a small number of people (Zhou Tianshu et al., 2021). The interview and discussion focused on the use and feeling of gamification elements.

3.3 Experimental Courses and Platforms

This study selected "Human Geography" as the experimental course. The course content includes six chapters and 54 sections, including man-land relationship theory, human cultural development and geographical environment, human economic development and geographical environment, human social development and geographical environment, and behavioral geography. The course is divided into 13 weeks and 26 class hours, using core education as the learning management system platform.

3.4 Gamification Design of the Courses

In each section of the course, there will be questions with different difficulties. Students can repeat the trial questions, and the system will calculate the average value according to the number of trials. The course is also set with a conditional access barrier, that is, students can't continue to learn the next chapter without completing the previous course. In addition, game elements such as points system, medals, ranking boards, challenge tests and rewards are also used in the course to enrich the gamification design. At the same time, the integration system adopts an upgrade strategy. Students will get points when watching courses, answering questions, posting on the discussion board, and winning medals, but the points they can get in each class will become higher as they enter the next class. For example, students can get 100 points in the first class, 200 points in the second class, 300 points in the third class, and so on.

3.5 Data Collection and Analysis

After the course, the researcher conducted a series of semi-structured interviews and focus group discussions with students to collect students' ideas about the game elements in the course, course design and course content, their views on gamification teaching, and their overall attitude

towards online courses. All participants were invited to participate in a personal interview, and the students agreed to share their ideas and experiences about the course. The personal interview lasts about 20 minutes, while the focus group discussion usually lasts about one hour.

All interviews were recorded with the explicit consent of the participants, and then transcribed verbatim. Then, according to the theme analysis method, the researchers find out the key words in the text. Then they convert these keywords into code and find corresponding topics according to the meaning they represent.

4. RESEARCH FINDINGS AND DISCUSSION

4.1 Research Findings

According to the results of research data analysis, students' perception of online course gamification teaching design can be roughly divided into four themes. These four topics are the perception of online self-study courses, the perception of game elements in the course, the motivation to complete the course, and the overall perception of online courses.

4.1.1 Perception of Online Self-study Courses

For online self-study courses, research data shows that there are both positive and negative views. Students are very interested in behavioral geography. They found it very interesting and its content was not blindly inculcated. However, some students feel that the course content is too simple and not challenging. The students showed a positive attitude towards the teaching method of each class. They believe that the multimedia presentation of online courses is more attractive than the traditional text-based content presentation. Most of the respondents expressed a certain degree of approval for the embedded questions used in the video, because this instant test can improve their knowledge.

Some students also said that the nature of online self-study and the function of unlimited playback of courses enable them to learn at their own pace, and the function of forum posts allows them to understand other people's ideas, and thus generate different views on the topic of discussion. The complexity of providing online course platform operation is a negative feedback that students mainly mentioned.

4.1.2 Perception of Game Elements in the Course

The ranking elements in the gamification instructional design are the most feedback from students. The mentality of striving to enter the top three places in the rankings has stimulated the motivation and intention of students to compete. Some students even expressed their dissatisfaction. Although they tried their best, they still could not reach the top of the list, because there was always someone better than them. They mentioned that frustration enhanced their desire to do better in the next course. On the other hand, some students are not very clear about how to get points, and do not care about whether they can upgrade. Most of the respondents mentioned their dissatisfaction with the restricted access function because it hindered their desire to skip part of the course content and continue to learn the next course. This also makes the system operation a little complicated.

4.1.3 Students' Motivation to Complete the Course

As mentioned earlier, students are very active in getting full marks and high rankings. In interviews and focus group discussions, these two gamification elements are the two motivating factors that have been mentioned the most frequently. Rankings can arouse the desire of some people to compete with other students, while points are used by some people as indicators of the target score of a given activity. When other students reach a certain score, they will be forced to get the same or higher score.

As mentioned earlier, relevant and interesting content and design can also stimulate students' curiosity and let them continue to learn the next lesson. Some students also mentioned that immediate feedback and evaluation are also driving factors to continue the course, because it will bring them instant satisfaction.

4.1.4 Overall Perception of Online Courses

The word "boring" is a key word that all respondents often mentioned. Students believe that the loneliness of learning online courses alone leads to their lack of enthusiasm for learning, loss of interest, or inability to concentrate on learning new

things. It was also mentioned that the lack of social interaction with teachers and peers made it more challenging to complete online courses. Group work and online classroom discussion are not as efficient as offline classroom teaching. Finally, students reflect that if they take online courses for a long time, it will have a negative impact on offline teaching. They have become accustomed to negative behaviors, such as turning on the computer, logging in to online courses, and doing other things, ignoring the classroom.

4.2 Discussion

The purpose of this study is to explore students' perception of the influence of gamification instructional design on their online learning experience. Through the analysis of relevant data, it is found that the design process of online course gamification teaching is an important aspect to be considered. In particular, the gamification elements need to be consistent with the course content in order to help achieve the teaching and learning objectives of the course. At the same time, the goal of integrating gamification elements into curriculum design is not only to improve students' participation, but also to promote the development of knowledge and skills.

Instant satisfaction refers to the experience of getting satisfaction or reward immediately after responding (Ma Lan & Zhang Jieyun, 2021). The results of this study show that the immediate feedback and evaluation in the gamification instructional design caters to the students' immediate psychological needs, leading to positive incentives. Therefore, in the gamification teaching design of online courses, it is necessary to add instant gratification elements to strengthen students' learning motivation, so as to achieve the goal of improving students' learning outcomes. However, it should be noted that many experimental respondents believe that their competitive characteristics have a great impact on the completion of the course. Therefore, it can be inferred that the influence of gamification teaching on those students who are competitive will be more obvious than those who are not competitive. In addition, whether learners are familiar with the course content or have more background knowledge will affect their participation in gamification teaching. Generally speaking, the more unfamiliar and new content is, the more fresh and exciting students will feel.

Theoretically, students who like competition can quickly notice the incentive elements in the gamification teaching design, but these incentive elements will be ignored by students who lack competition. These students may be driven by other motivations, such as the usefulness and relevance of the content. Therefore, an obvious limitation of gamification teaching is that it cannot interact with students who are not interested in teaching content. The results of this study suggest that the reward system in the gamification teaching design may not improve the participation of students without motivation.

The effectiveness of game elements in online course instructional design depends on students' understanding of game mechanism. The data of this study shows that the students who listen actively in the course introduction perform better than those who do not listen very much. The students who listened actively received more badges and higher scores. Therefore, this study suggests that it is necessary to introduce the game elements and rules in the course in detail. Once students understand the mechanism of game elements, they can stimulate their interest in game elements and improve the possibility of participating in them. In short, the design of online classroom gamification teaching needs to consider its advantages and disadvantages more carefully and comprehensively, rather than regard it as a remedial measure to improve classroom participation rate.

Another thing that needs attention is the student behavior observed in this study. In order to win more medals and higher points, some students complete the questions in the course by searching for answers online. Some students think this behavior is cheating. This leads to the question that the original intention of introducing gamification instructional design into online courses is to improve and develop students' knowledge and skills, but will it eventually evolve into the pleasure generated by only meeting students' immediate needs. Similarly, most students said that they prefer to present the course content in different forms. Otherwise, they will soon lose their interest and motivation to participate. Therefore, the effectiveness and effect of course design largely depend on how users use it. In general, the gamification instructional design of online courses is not only related to the course teachers, but also related to the design of online teaching platform. Both sides need to work together, and it is difficult to achieve the original intention only by one of them.

5. CONCLUSION

This study shows that gamification instructional design may improve students' participation and motivation in online course learning. However, the careful design of the curriculum by the teachers and the realization of the online platform function on the curriculum design are two important factors, so it is necessary to conduct a more in-depth analysis of their impact on the perceived effect of classroom participation. This study also shows that, when the design is appropriate, for those students who have enthusiasm, initiative, or competitiveness, gamification instructional design can indeed improve their online learning experience, but gamification instructional design has little impact on those students who lack learning goals, weak willpower, or lack of concentration. Therefore, gamification teaching may not be regarded as the only way of online teaching reform.

In addition, if human geography and other factors are considered as variables, the results of this study may not be applicable to other geographical groups. Even so, these findings of this study also point out the direction for future research, such as further analysis of the relationship between specific game elements and learners' participation, motivation and other factors, how to effectively integrate them into online courses, and how to attract students without motivation through gamification instructional design.

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