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A Survey on Satisfaction with Learning of Online Courses in General Education in Universities

Jian Li

Beihai Campus, Guilin University of Electronic Technology, Beihai, 536000, Guangxi, China

Abstract: *The use of network platform to carry out general education courses has become a more common way in China's general education. In the Internet era, how to effectively use network platform resources, better carry out general education courses, and improve the learning satisfaction of general education is an important issue that needs to be solved.Based on previous studies, this study takes three dimensions of self-efficacy, teacher guidance and curriculum quality as factors affecting learning satisfaction, and introduces learning engagement as a mediating variable. Using the method of empirical research, this paper adopts convenient sampling to select some students from 10 universities in Guangxi which offer online courses of general education.Through the sample data, it is verified that self-efficacy, teacher guidance and course quality have significant positive effects on learning satisfaction. Learning engagement has a partial mediating effect.*

Keywords: *General education; Online course; Learning satisfaction; Learning engagement*

1. Introduction

Colleges and universities shoulder the responsibility of delivering more high-level talents to the society, and general education plays a more important role in improving the quality of college talent training. Promoting general education is one of the important ways to improve the quality of college education and cultivate comprehensive talents [1].General education network courses can break through various restrictions and share high-quality course resources.General education network courses provide a new way to carry out general education [2].Universities are also constantly introducing high-quality online course platforms to promote the popularization and promotion of general education.

The study of general education curriculum mainly focuses on curriculum quality, curriculum reform, learning satisfaction and its influencing factors.Liu Gang et al. (2023) believed that the teaching ability and level of individual teachers need to be improved, and students' lack of understanding of the value of the curriculum leads to their neglect of the curriculum, which are the two main reasons for the low quality of the current curriculum[3]. As for the direction of curriculum reform, Jiang Lin (2022) should take the interests of students as the starting point, emphasize the dominant position of teachers in the classroom, and give full play to the initiative and creativity of students[4]. A study on improving learning satisfaction and influencing factors in general education courses.Huang Lingmei et al. (2020) found that factors affecting undergraduates' satisfaction with general education courses include unreasonable assessment forms, conflict between general education courses and professional courses, etc[5].There are few researches on online courses of general education, and more researches focus on online learning satisfaction.Yang Ling et al. (2019) believes that universities of science and technology need to build and introduce general education online courses[6].The research finds that the main factors affecting the satisfaction of general education online courses include teaching methods, assessment forms, course management and course content, and the impact of individual student differences is not significant.

To sum up, there are few studies on the learning satisfaction of online courses of general education at present, which mainly focus on the quality of courses, curriculum reform, learning satisfaction and its influencing factors, etc. The relevant studies are mainly on the satisfaction of online courses, which provides a reference for us to study the learning satisfaction of online courses of general education. This research can analyze the current situation of general education online courses, understand the main factors affecting their learning satisfaction, and then put forward relevant opinions and suggestions to improve satisfaction, which is conducive to improving the overall quality of college students.

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2. Literature Review

About the learning satisfaction of learners in network general studies, this study puts forward Relevant assumptions.

Liu Xiaojun et al. (2023) pointed out that teachers' after-school tutoring for college students in online courses is an important factor affecting their course learning satisfaction[7]. Effective tutoring can enhance college students' mastery of knowledge, answer questions and solve doubts for students, facilitate the communication between teachers and students, and contribute to the improvement of students' study satisfaction. Hu Luwei et al. (2022) pointed out that it is necessary to enhance the satisfaction of online learning and strengthen teachers' tutoring for students' after-school learning from the perspective of improving teachers' methods and methods[8]. Wu Di (2023) found from the study of online learning in vocational education that teachers' guidance and control of courses, overall course design structure and students' autonomous learning ability all play a certain role in promoting students' learning participation[9]. Especially in the area of teacher guidance, tutoring and tracking of lesson planning, communication, and process can promote student engagement in learning. Therefore, it can be inferred that teacher guidance is one of the influencing factors of learning satisfaction, so the hypothesis is proposed:

H1: Teacher guidance has a significant positive impact on learning satisfaction.

The influencing factors of students' self-learning efficacy and learning satisfaction are highly consistent. Colleges and universities should use various teaching means to enhance students' self-efficacy and continuously improve students' learning satisfaction[10]. Li Yingying et al. (2020) pointed out that self-efficacy affects college students' online learning satisfaction[11]. When studying the relationship between academic self-efficacy and learning satisfaction, Tan Dongdong (2016) proposed that there is a positive correlation between academic self-efficacy and learning satisfaction[12], so he proposed the following hypothesis:

H2: Students' self-efficacy has a significant positive impact on learning satisfaction.

Course quality is the reflection of students' learning experience and learning perception after they truly participate in professional learning, which is the real feeling of students combined with their own reality, and will have a direct impact on their learning satisfaction. Yin Meng et al. (2023) studied the impact of course quality perception on learning satisfaction from the perspective of course quality[13]. Through testing, the author found that course quality had a significant impact on college students' online learning satisfaction. The research results have a certain reference significance for improving the quality of online courses for college students. Lu Shian et al. (2022) pointed out that course quality is the reflection of students' learning experience and learning perception after they truly participate in professional learning, which is the real feeling of students combined with their own reality, and will have a direct impact on their learning satisfaction[14]. Course quality has a positive correlation with learning satisfaction [15]. Therefore, the following hypothesis is proposed:

H3: Course quality has a significant positive impact on learning satisfaction.

Qi lina et al.(2021) studied the relationship between college students' participation, learning engagement and learning satisfaction in online learning[16]. It is found that there is a significant positive correlation between learning engagement and learning satisfaction. It can be assumed that:

H4: Students' learning engagement has a significant positive impact on their learning satisfaction.

Students' learning engagement has a direct impact on teaching quality, and teacher guidance factors have the most obvious impact on learning engagement, including teacher-student interaction, teacher feedback and teaching activity arrangement [17]. Huang Rongwei et al. (2019) pointed out that the factors affecting MOOC learning engagement can be summarized into six aspects: learner main factor, teacher guidance factor, platform support factor, curriculum construction factor, learner peer factor and policy support factor[18]. Therefore, it can be inferred that teacher guidance is one of the factors affecting student participation, so the hypothesis is proposed:

H5: Teacher guidance has a significant positive impact on learning satisfaction through student engagement.

Ge Zhikang (2021) found that high school students' online learning participation was positively correlated with self-efficacy[19]. According to the research of Zimmerman et al. (2011), learning engagement belongs to the behavioral level, while self-efficacy belongs to the motivational level, both

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of which play a role in the learning process and outcome[20]. In addition, Wen Xin et al. (2021) found that there is a positive correlation between students' self-efficacy, learning satisfaction and learning engagement, and learning engagement plays an intermediary role between them[21]. It can be assumed that:

H6: Student self-efficacy has a significant positive impact on learning satisfaction through student engagement.

In the online learning environment of MOOCs, the quality of MOOCs is one of the factors that affect the participation of MOOCs online learning[22]. Qu Liaojian et al. (2019) pointed out that course quality has a significant impact on the improvement of students' participation in course learning[23]. It can be assumed that:

H7: Course quality has a significant positive impact on learning satisfaction through student participation.

3. Method

In this study, students in universities in Guangxi, which offer online courses of general education, will be selected as the research objects. Guangxi is located in the southwest ethnic minority region, and the development of higher education in Guangxi is slower than that in the central and eastern regions [24]. General education is a crucial part of higher education. Its positive role in improving the comprehensive quality of college students has been widely recognized in universities [25]. Therefore, this study takes college students in Guangxi as the research object, which has certain practical significance for studying the learning satisfaction of general education online courses in Guangxi colleges and universities, and can start from studying the learning satisfaction to find ways to improve the quality of general education online courses.

In this study, quantitative methods are used to test the proposed model. An online self-filling questionnaire was used to collect data. The questionnaire was divided into two parts. The first part is the demographic data, including the student's gender, level of study (undergraduate/junior college), grade, subject, whether they have participated in the study of General education network courses and the school they attended; In the second part, a 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree) was used to measure the psychological perception of the respondents, and 35 items were adjusted from Li Yubin et al[26]. (2021), Jessica Li et al[27]. (2015), Shi Yinghui et al[28]. (2023). Fredricks et al[29]. (2004) . In addition, after the questionnaire was designed, a small range of pre-test was conducted in Beihai Campus of Guilin University of Electronic Science and Technology, and 102 questionnaire data were collected. Among them, 9 points were students who had not participated in online courses of general education, so 93 effective pre-test questionnaires were collected. Cronbach's alpha test results showed that the reliability of all dimensions was greater than 0.8 . KMO and Bartlett tests were used to predict the validity of the questionnaire. KMO=0.812 > 0.7, and Bartlett sphericity test was significant ($P < 0.001$), both of which met the requirements.

4. Results

4.1. Analysis of the Measurement Model

Before the structural model assessment, all the required criteria should be satisfied [30].Firstly, the reliability analysis is carried out. The reliability of each dimension of the sample data scale is greater than 0.8, so the scale has good stability and certain credibility.There are two important indicators of convergence validity, namely, combination reliability (CR) and mean variance extraction (AVE). When CR>0.7 and AVE>0.5, it indicates that the measurement dimension has good convergence validity. In general, the standardized factor load coefficient is used to express the variable relationship between the factor and the analysis item. If it is significant and the standardized factor load coefficient is greater than 0.6, CR values are both greater than 0.8, and AVE values are greater than 0.5, indicating that the sample data of this scale has good convergence validity.Discrimination validity requires that AVE square root value is greater than the correlation coefficient between this factor and other factors. The arithmetic square root of AVE value of all variables is greater than the correlation coefficient between this factor and other factors, indicating that the sample data of this scale has good discrimination validity.

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4.2. Correlation analysis

Correlation analysis is used to show the strength of the relationship between two or more variables. Through correlation analysis, we can understand the correlation between variables. Since the scale data in this study met the normal distribution, Pearson correlation coefficient was used and its significance was marked.Teacher guidance has a positive correlation with both learning engagement and overall learning satisfaction, and the correlation coefficients R are 0.691 and 0.510, respectively, and both are significant at $p<0.01$ level. Self-efficacy has a positive correlation with both learning engagement and overall learning satisfaction, and the correlation coefficients R are 0.762 and 0.519, respectively, and both are significant at $p<0.01$ level. Course quality has a positive correlation with learning participation and overall learning satisfaction, and the correlation coefficients R are 0.645 and 0.455, respectively, and both are significant at $p<0.01$ level. Learning engagement has a positive correlation with overall learning satisfaction, and the correlation coefficient R is 0.598, and all of them are significant at $p<0.01$ level. The above test results show that there is a strong correlation between the study variables.

4.3. Regression analysis

The regression analysis of teacher guidance, self-efficacy and course quality on learning satisfaction was conducted. In the equation obtained by regression of teacher guidance, self-efficacy and course quality on learning satisfaction, F value is 33.973 and significance is 0.000 ($p<0.001$), indicating that the regression model constructed is significant. The standard regression coefficient of teacher guidance on learning satisfaction was 0.253, and the significance was 0.000 ($p<0.001$), indicating that teacher guidance had a positive impact on learning satisfaction, and the impact was significant. The standard regression coefficient of self-efficacy on learning satisfaction was 0.267, and the significance was 0.000 ($p<0.001$), indicating that self-efficacy had a positive impact on learning satisfaction, and the impact was significant. The standard regression coefficient of course quality on learning satisfaction is 0.161, and the significance is 0.001 ($p<0.005$), indicating that self-efficacy has a positive impact on learning satisfaction, and this impact is also significant. Based on the above analysis, it is assumed that H1, H2 and H3 are all valid.

The regression analysis of teacher guidance, self-efficacy and course quality on learning engagement is conducted. In the equation obtained by regression of teacher guidance, self-efficacy and course quality on learning engagement, F-value is 136.181 and significance is 0.000 ($p<0.001$), indicating that the regression model constructed is significant. The standard regression coefficient of teacher guidance on learning participation was 0.291, and the significance was 0.000 ($p<0.001$), indicating that teacher guidance had a positive effect on learning participation, and this effect was significant. The standard regression coefficient of self-efficacy on learning satisfaction was 0.442, and the significance was 0.000 ($p<0.001$), indicating that self-efficacy had a positive impact on learning engagement, and the impact was significant. The standard regression coefficient of course quality on learning engagement is 0.219, and the significance is 0.000 ($p<0.001$), indicating that self-efficacy has a positive impact on learning engagement, and this impact is also significant. Based on the above analysis, it is assumed that H5, H6 and H7 are all valid.

The regression analysis of learning engagement on learning satisfaction is carried out. In the equation obtained by regression of learning engagement to learning satisfaction, F value is 52.198 and significance is 0.000 ($p<0.001$), indicating that the regression model constructed is significant. The standard regression coefficient of learning participation on learning satisfaction is 0.601, and the significance is 0.000 ($p<0.001$), indicating that learning participation has a positive impact on learning satisfaction, and this impact is significant, so hypothesis 4 is valid.

4.4. An examination of the mediating role of learning engagement

In order to more accurately compare the results of each effect size of the three groups of intermediary models, the process plug-in was used to calculate the direct and indirect effects of the model, and the bootstrap method was used to sample 5000 times for deviation correction. The calculation results show that the mediating effect sizes of teacher guidance, self-efficacy and course quality on learning satisfaction through learning engagement are 0.3417, 0.3920 and 0.3547, respectively, and the 95% confidence intervals of direct effects and mediating effects in the three groups of paths do not contain 0, which further verifies the hypothesis of some mediating effects in the model.

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5. Conclusion

This paper takes the learning satisfaction of the network course of general education in Guangxi university as the research object, and finds through the empirical study that: teacher guidance has a significant positive impact on the learning satisfaction; Students' self-efficacy has a significant positive impact on learning satisfaction. Course quality has a significant positive impact on learning satisfaction; Students' learning engagement has a significant positive impact on their learning satisfaction. Learning engagement plays an enhanced mediating role among teacher tutoring, self-efficacy, curriculum quality and learning satisfaction.

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