Research on The Evaluation of Online Learning Effect of College Students in Guangxi in The Post-Epidemic Era

Donghong Liu[1, a], Minjuan Feng[2, b], Hanwen Zhang[3, c], Ting Zhang[4, d*]

[1] *College of Tourism and Landscape Architecture Guilin University of Technology, Guilin, China*
[2] *College of Tourism and Landscape Architecture Guilin University of Technology, Guilin, China*
[3] *College of Tourism and Landscape Architecture Guilin University of Technology, Guilin, China*
[4] *College of Tourism and Landscape Architecture Guilin University of Technology, Guilin, China*
[a] *e-mail: ldhdonghong@163.com,* [b] *1114705300@qq.com,*[c] *e-mail: 1013308484@qq.com*
[*] *Corresponding author:* [d]*applezhangting@163.com*

Abstract

Comparing the situation of online learning during the epidemic and during the period of normalized prevention and control of the epidemic, 305 valid questionnaires were collected in Guangxi colleges and universities using the questionnaire survey method. And other five dimensions, using SPSS for correlation and regression analysis. The study found that the above five dimensions all showed a significant correlation on the network learning effect at the 0.01 level, and the comprehensive impact on the online learning effect is 64.9%. Among them, learning methods and strategies have the greatest impact on online learning; negative emotions such as psychological pressure and anxiety, and negative learning attitudes have a prominent negative impact on the learning effect. It is recommended that multiple schools jointly build an online learning platform, improve the online learning environment, teachers actively guide students to rationally use correct learning methods and learning strategies, eliminate negative emotions, adjust positive emotions to actively participate in learning, improve online learning effects, and integrate online and offline for colleges and universities. Educational resources, and provide reference data for promoting the reform of education model.

Keywords: *online learning effect; influencing factors; normalization of the epidemic; college students; Guangxi*

1 INTRODUCTION

In order to implement the spirit of General Secretary Xi Jinping's important instructions on resolutely winning the battle against the novel coronavirus pneumonia epidemic and the decisions and deployments of the Party Central Committee and the State Council, in order to prevent and control the epidemic and ensure the safety and health of teachers and students, the Ministry of Education announced on January 1. On February 27th, the “Notice on Postponing the Spring School Start of 2020” was released. On February 12th, the press conference of the State Council's Joint Prevention and Control Mechanism clarified that “classes are suspended without teaching, and online teaching is in full swing” [1], [2]. The Ministry of Education convened the 4th National Education System Epidemic Prevention and Control Video Scheduling Conference in 2022, requiring that the home-school collaborative prevention and control mechanism is improved and online teaching is done well. Compared with traditional teaching modes and teaching methods, online teaching integrates information-based teaching technology and teaching resources, and integrates many functions such as online learning, teaching assistance and data statistics. A brand new exam. In addition, due to the particularity and long-term nature of the epidemic, students' anxiety and uneasiness during the learning process will not affect the learning effect. In view of this, it is particularly important to evaluate the learning effect of online teaching during the epidemic prevention period.

2 LITERATURE REVIEW

Since the beginning of the 20th century, the research on e-learning at home and abroad has gradually increased,

B. Fox et al. (Eds.): IC-ICAIE 2022, AHCS 9, pp. 1572-1577, 2023.
https://doi.org/10.2991/978-94-6463-040-4_237

and the research content has become more extensive. However, there are few studies on e-learning effect evaluation targeting students of a certain discipline in China. e-learning is used as a retrieval keyword. There are few studies mainly from the aspects of e-learning platform/system, e-learning effect and e-learning anxiety.

Research on e-learning platforms with the development of the Internet, various e-learning platforms have emerged. In 2019, Chen Ling conducted a usability study of the MOOC platform, and summarized the design, development and application of the current MOOC platform from the perspective of usability. In conclusion, the research problem of the usability evaluation of the application of learning analysis technology in the MOOC platform is proposed [3]. With the progress and development of academics, more and more scholars pay attention to the online learning situation of learners. Taking learners as the starting point, the research on the effect of online learning is no longer limited to the exploration of learning platforms. Research on the effect of online learning, etc. The research on the effect of online learning mainly studies the correlation between learning behavior and learning effect, the influencing factors of learning effect, and the construction of learning effect evaluation system. In 2017, Liu Yuwei explored the influence of tourism management students' intelligence Factors of learning behavior, summed up the factors that affect the intelligent learning behavior of tourism management students, such as personal characteristics, attitude characteristics, motivational norms, etc. [4], In 2019, Wu Shaojing and Yi Ming scholars analyzed the online learning process data of 2,868 primary and secondary school teachers who participated in the "National Training Program X Province Information Technology Application Ability Improvement Backbone Teacher Network Training Project", and obtained the learning in online learning. Engagement, classroom participation, and communication and discussion all have a certain impact on the learning effect of training teachers [5]. In 2018, two scholars, Li Changjun and Jia Jucai, believed that the current evaluation method of online learning effect still has serious deficiencies. The evaluation of the learner's knowledge level is relatively neglected in the evaluation of the learner's learning process and their subjective feelings in learning [6]. Research on Online Learning Anxiety The emotional role of online learning has been valued by many scholars at home and abroad In 2019, M'hammed Abdous research investigated various factors related to online learning experiences (students' demographic characteristics, previous online learning How experience, satisfaction, and a sense of readiness for a course after completing an online learning orientation) affect online students' anxiety [7]. In the study of e-learning platforms or e-learning systems, domestic scholars focus on the countermeasures for platform development, while foreign scholars pay more attention to evaluating e-learning systems and quality. This paper mainly focuses on e-learning platforms/systems, e-learning effects and e-learning anxiety. Research.

3 RESEARCH DATA AND METHODS

3.1 *Research data*

3.1.1 Basic information

Research content is divided into two parts altogether, the first part of the survey population characteristics of tourism majors in colleges and universities in Guangxi, in the survey, Mainly for Guangxi University, Guilin University of Technology, Guilin University of Tourism, Guangxi Normal University, Hezhou University, Beibu Gulf University and other universities of the tourism major students for the network questionnaire distribution and collection, Guilin University of Technology, Guangxi Normal University, Hezhou University and Guilin University of Tourism accounted for the largest number of students. Including the school, gender, study ville and frequency of online learning during the epidemic period. The second part, from the perspective of students, selected four dimensions of online learning atmosphere, online education platform teachers, online learning resources, learning attitude and subjective initiative during the epidemic period, and a total of 31 evaluation factors of online learning effect. A total of 312 questionnaires were collected, of which 305 were valid, with an effective rate of 97.8%.

3.1.2 Reliability and validity test

The Cronbach's alpha coefficient of 31 items was 0.907, which indicated that the scale had high reliability and could be further analyzed. Through KMO value and Bart's spherity ictest, the KMO value is 0.889, much larger than 0.6, and the P value is less than 0.05, Actually significant. The cumubreakfast variance interpretation rate value is 67.033%, Actually that the 5 dimensions can extract most of the question information. In general, the move of the research data cook data is good.

3.1.3 Analysis of the Frost characteristics of the respondents

Among the 305 respondents, most of them came from cities within China during online learning, with 210 women accounting for 68.85% and 95 men accounting for 31.15%. ors accounted accounted for the largest number of students, 28.85%, but the overall distribution of students in each grade was more even. Among the 305 respondents, 205 people (67.21%) think that online learning is a good way to learn, while 100 people (32.79%) think that online learning is not a good way to learn. In terms of the frequency of using online learning platform, 177 people (58.03%) use it once a day or more,

and 96 people (1 to 6 times a week) use it. Accounting for 31.48%. There are 16 people who use online learning once or twice every half month, accounting for 5.25%. There are 16 people who use online learning once a month or only once a month, accounting for 5.25%.

3.2 *Research methods*

Through literature analysis, design questionnaire, network distribution and recovery of tourism major students in Guangxi universities, using SPSS23.0 software for statistical analysis. Correlation analysis and regression analysis are mainly used to analyze the influencing factors and evaluation of network learning effect.

4 RESEARCH RESULTS

4.1 *Correlation analysis of network learning effect*

As shown in figure 1, through to the learning environment, learning resources and students, the teacher and subjective attitude and 19 indexes such as correlation analysis, it can be seen that learning environment (0.118), and the teacher learning resources (0.405), between learning attitude and subjective initiative (0.537) from 0.01 levels significantly correlated, learning atmosphere, teachers, learning resources, learning attitude and subjective initiative were significantly correlated with online learning effect at 0.01 level, and the correlation coefficients were 0.267, 0.337, 0.595 and 0.260, respectively. The correlation coefficient between learning resources and online learning effect was the largest, and the correlation coefficient between learning attitude and subjective initiative and online learning effect was the smallest.

TABLE1.CORRELATION ANALYSIS OF NETWORK LEARNING EFFECT

	The average	The standard deviation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Learning Platform (1)	3.131	0.711	1																		
Internet connection (2)	3.095	1.02	0.583**	1																	
Family Activities (3)	3.298	1.118	0.416**	0.506**	1																
Learning Atmosphere (4)	3.157	0.707	0.902**	0.800**	0.713*	1															
Objective Reasons of Teachers (5)	3.318	1.236	0.127*	0.057	0.048	0.108	1														
Subjective Reasons of Teachers (6)	3.162	1.197	0.142*	0.063	0.051	0.120*	0.894**	1													
Instructor (7)	3.224	1.182	0.140*	0.062	0.051	0.118*	0.962**	0.982**	1												
Learning Resources (8)	3.5	0.749	0.442**	0.288**	0.183*	0.405*	0.303**	0.297**	0.307**	1											
Anxiety (9)	3.325	0.93	0.401**	0.448*	0.370*	0.488*	0.135*	0.139*	0.141*	0.344**	1										
Pressure (10)	2.938	1.038	0.250**	0.03	-0.046	0.145*	0.176**	0.196*	0.193**	0.313**	0.087	1									
Learning Ability (11)	3.367	0.923	0.364**	0.347**	0.340*	0.427*	0.09	0.09	0.093	0.300**	0.566**	0.093	1								
Learning Attitude (12)	3.451	0.809	0.421**	0.373**	0.371*	0.479*	0.150**	0.133*	0.144*	0.297**	0.744**	0.068	0.651**	1							
Learning Attitude and Subjective Initiative (13)	3.33	0.696	0.485**	0.429*	0.381*	0.537*	0.181**	0.178**	0.184**	0.403**	0.879**	0.298**	0.750**	0.920**	1						
Methods and Strategies (14)	3.331	0.899	0.212**	0.016	0.039	0.144*	0.198**	0.268**	0.246**	0.452**	0.115*	0.389*	0.107	0.059	0.177**	1					
Knowledge and Skills (15)	3.42	0.72	0.329**	0.152**	0.204*	0.306*	0.314**	0.329**	0.332**	0.559**	0.232**	0.298**	0.213**	0.233*	0.309**	0.476*	1				
Improvement of Attitude and Emotion (16)	3.282	0.752	0.296**	0.088	0.08	0.229	0.246*	0.322**	0.298**	0.537**	0.147*	0.402**	0.122*	0.094	0.212**	0.717*	0.642**	1			
Degree of Target Achievement (17)	3.262	0.868	0.248**	0.039	0.038	0.173*	0.160**	0.219**	0.200**	0.401**	0.031	0.369*	0.122*	0.035	0.131*	0.652**	0.457**	0.651*	1		
Related Ability Cultivation (18)	3.375	0.82	0.233**	0.083	0.051	0.181*	0.227*	0.274*	0.262**	0.449**	0.145*	0.279**	0.069	0.097	0.176**	0.737**	0.545**	0.698**	0.578**	1	
Learning Effect (19)	3.345	0.657	0.330**	0.108	0.117*	0.267*	0.293**	0.353**	0.337**	0.595**	0.183**	0.407**	0.160**	0.146*	0.260**	0.810**	0.811**	0.913**	0.739**	0.846**	1

* p<0.05 ** p<0.01

4.2 *Regression analysis of network learning effect*

Four dimensions, including learning atmosphere, teachers, learning resources, learning attitude and subjective initiative, and methods and strategies, are taken as independent variables, while online learning effect is the dependent variable. As can be seen from figure 1, the R square value of this model is 0.649. It means that learning atmosphere, teachers, learning resources, learning attitude and subjective initiative, and methods and strategies can explain 64.9% of the changes in online learning effect, and the regression equation can be listed as: $Y=4.947+0.151X1+0.083X2+0.440X3-0.012X_4+3.408X_5$ (X_1 represents the learning atmosphere, The X_2 means that the teaching teacher, X_3 represents the learning resources, X_4 represents the learning attitude and subjective initiative, and X_5 represents the method strategy). Methods and strategies have the greatest influence on the effect of network learning. Among the four dimensions, learning resources are the most important, followed by learning atmosphere, teachers, and learning attitude and subjective initiative. The regression coefficient between learning attitude and subjective initiative was -0.012 (t=-0.283, P =0.777>0.05), and VIF was less than 5, indicating that there was no multicollinearity problem. Of psychological stress, anxiety and other negative emotions, weakness and learning burnout, passive learning attitude, negative learning abilities such as learning attitude and subjective initiative of evaluation factors, therefore, in the data analysis results in the learning attitude and subjective initiative of network study effect of regression coefficient is negative, negative influence of network learning effect.

TABLE2. REGRESSION ANALYSIS OF NETWORK LEARNING EFFECT

Linear regression analysis results(n=305)									
	Non- standardized factor		Standardizatio factor						
	B	Standard error	Beta	t	p	VIF	R ²	Ajust it R²	F
Constant	4.947	1.01	-	4.897	0.000**	-			
The learning atmosphere	0.151	0.073	0.083	2.072	0.039*	1.38			
Instructor	0.083	0.03	0.103	2.799	0.005**	1.142			F
Learning Resources	0.44	0.089	0.209	4.956	0.000**	1.509	0.649	0.643	(5,299)=110
Learning attitude and subjective initiative	-0.012	0.042	-0.012	-0.283	0.777	1.46			.349, p=0.000
Method policy	3.408	0.207	0.641	16.477	0.000**	1.287			
D-Wvalue: 1.587 * p<0.05 ** p<0.01									

5 CONCLUSION

During the epidemic prevention and control period, the effect of students' online learning was average. First of all, I learned about the online learning content of students during the epidemic prevention and control period. Most of the university courses are online live broadcast, and the content of online learning is not very extensive. Through the relevant regression analysis, the relationship between the four dimensions of learning resources, learning atmosphere, teaching teachers, students' attitude and subjective initiative and the learning effect during the epidemic prevention and control period was explored. Attitude and Subjectivity.

To improve the effect of online learning, it is necessary to pay attention to the interaction of learning. From the perspective of students, this paper understands the basic situation of online teaching and students' online learning in Guangxi colleges and universities during the epidemic prevention and control period. Through the analysis of the current situation of online learning in Guangxi colleges and universities, it is sorted out that the overall effect of online learning is not very good. The overall effect of interaction with the environment and the interaction between students and learning resources is not good. In view of the problems existing in online learning, targeted suggestions can be put forward from the aspects of teacher teaching implementation, student participation, environment, and learning resources, aiming to guide

Through the improvement of these aspects, students are more actively involved in online learning, and the effect of online learning is continuously improved.

ACKNOWLEDGMENT

This paper is supported by the Humanities and Social Sciences research project of the Ministry of Education "The Cognitive neural mechanism of the Influence of mobile social Network addiction on adolescent socialization" (20YJA860020). The funding bodies had no role in the design of the study and collection, analysis, and interpretation of data nor in writing the manuscript.

REFERENCES

[1] Ministry of Education of the People's Republic of China. Circular of the Leading Group Office of the Ministry of Education on Supporting Education and Teaching with Information technology during the Period of Epidemic Prevention and Control (Department of Education and Technology Letter [2020] 7) [Z]. In the 2020-02-06s.

[2] Ministry of Education of the People's Republic of China. Guidelines of the Leading Group Office of the Ministry of Education on The Organization and Management of online teaching in regular institutions of higher Learning during the Period of Epidemic prevention and control [Z]. In the 2020-02-04s.

[3] Chen Ling. Research on the usability of MOOC platform learning analysis and evaluation [D]. Zhejiang Normal University, 2019.

[4] Liu Yuwei. Research on the evaluation of influencing factors of intelligent learning behavior of tourism management students [D]. Shenyang Normal University, 2017.]

[5] Wu Shaojing, Yi Ming. The influence of primary and secondary school teachers' online learning behavior on learning effect [J]. Modern Educational Technology, 2019,29(09):101-107.]

[6] Li Changjun, Jia Jucai. Deficiencies and suggestions of online learning effect evaluation [J]. Journal of Hebei North University (Social Science Edition), 2018, 34(01): 113-116.

[7] M'hammed Abdous. Influence of satisfaction and preparedness on online students' feelings of anxiety [J]. The Internet and Higher Education, 2019, 41..