Research on the Performance Evaluation of College Students' Online Courses

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Abstract: With the development of information technology, the proportion of online course learning in colleges and universities has gradually increased. Major universities have also set up online teaching platforms to promote online courses in various professional disciplines. However, with the rise of online teaching, how to evaluate the performance of college students' online courses has become an urgent problem to be solved. This study starts from the construction of evaluation index system, analyzes the performance evaluation index of college students' online course learning by using AHP, and uses the index system to conduct practical research to verify the use effect of this index.

1. Introduction

With the popularity of Internet education, how to scientifically evaluate the effect of online learning is an urgent problem to be solved. Different from traditional teaching evaluation, modern online teaching is student-centered and has high requirements for students' initiative and consciousness. If students can't voluntarily participate in learning, the learning process will be interrupted. However, online course learning has different characteristics from traditional learning, and traditional teaching evaluation methods cannot be used for learning evaluation. Therefore, it is a worthwhile research to introduce a performance evaluation method to establish a set of performance evaluation index system suitable for college students' online course learning.

2. College students' online course learning performance evaluation index system framework

Online course learning is usually open, flexible and lifelong. It can promote education fairness and flexibility to adapt to various teaching methods. Once the online course is published, it can be spread for a long time and is suitable for lifelong learning development. The research on the performance evaluation of college students' online courses mainly studies the two aspects of learning performance evaluation and online teaching evaluation. Through the diversified evaluation, the study performance evaluation not only pays attention to students' performance but also pays attention to the ability of students in the process of their growth, thus helping the network teaching in accordance with their aptitude. It has a good guiding effect on students' learning; the evaluation of network teaching follows the principles of science, objectivity, integrity and guidance, and rational use of evaluation methods and technical tools to construct systematic guiding functions, diagnostic functions, regulatory functions and incentives. Function, so that the whole process of pre-teaching, teaching, and post-teaching is evaluated in all aspects.

The complete evaluation index system consists of three parts: evaluation index, index weight and evaluation standard. Based on the principle of consistency, completeness, independence, measurability and simplicity, this paper constructs the evaluation index of college students' online course learning performance system. The specific steps are the construction of the online course learning performance evaluation index system, the evaluation dimension determination, the index item collection, the index item screening and classification, the initial formation of the indicator system, the determination of the indicator weight, the evaluation criteria, and the establishment of the evaluation index system, thus establishing a perfect university. Online course learning performance evaluation index system.

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With regard to the construction of the online performance evaluation index system, the evaluation dimension determination, the index item collection, the index item screening and classification, and the initial formation of the indicator system, this study first combines the database information of various databases such as China Knowledge Network and Wanfang Database, and refers to the international Recognized the evaluation criteria for online courses with high recognition, initially drafted 23 commonly used indicators, and visited the staff responsible for network platform construction and operation and maintenance of major universities and the role of network course scheduling, and added evaluation indicators to 30 items. . Then through questionnaire survey combined with exploration of new factor analysis and confirmatory factor analysis, 27 items were initially established after reliability and validity analysis, and classified into six factors according to exploratory factor analysis. The specific evaluation indicators are shown in Table 1.

Table 1 Performance evaluation indicators for college students' online courses

Primary indicator	Secondary indicators	Three-level indicator
A Learning behavior and attitude	A1 Method strategy	All Mastery of relevant knowledge
		A12 Learning plan
		A13 Learning resource organization and utilization
		A14 Interaction and collaboration
		A15 Problem finding and solution
		A16 Summary and reflection
	A2 Emotional attitude	A21 Learning Status
		A22 Sense of acquisition
		A23 Persistence
B Online course satisfaction	B1 Course content	B11 Course arrangement
		B12 Course science
		B13 Course duration
		B14 Provide learning resources
	B2 Instructional design	B21 teaching objectives
		B22 Teaching strategies and methods
		B23 Media selection
		B24 Learning coaching and feedback
		B25 Evaluation method
		B26 Learning outcome incentive
		B27 Teaching process monitoring
C Network platform satisfaction	C1 interface design	C11 Platform interface
		C12 Link navigation
		C13 Explain help
	C2 Platform technology	C21 Platform performance
		C22 Tool support
		C23 functional module
		C24 Resource recommendation

3. The weight of college students' online course learning performance evaluation index system

The weight of the evaluation index system of college students' online course learning performance is based on the analytic hierarchy process, which consists of the following four steps:

First of all, according to the decision target layer to clear the problem, build a hierarchical structure model. The highest level of the study is the evaluation of college students' online course learning performance, which is the overall goal of decision-making; learning behavior and attitude, online course satisfaction and network platform satisfaction are the first-level indicators, which belong to the intermediate criterion layer; method strategy, emotional attitude, course content, Teaching design, interface design and platform technology are secondary indicators, belonging to

the sub-level intermediate criteria layer; the remaining 27 items correspond to these six factors, respectively, as the lowest level of the program layer, get the hierarchical structure shown in Table 1. Then, each factor of each level should be compared with each other to judge the relative importance, and the judgment result is expressed in the form of a numerical matrix, and the judgment result value is scored by experts. Finally, the hierarchical ordering and total ranking are performed and the consistency test is carried out to determine the weight of the college students' online course learning performance evaluation index system, and the specific index weights as shown in Table 2 are obtained. Note: Due to space limitations, the judgment matrix of the first-level indicator, the second-level indicator, the third-level indicator and the consistency test result are not listed.

Table 2 shows the performance evaluation index system of college students' online courses

Performance Evaluation of College Students' Online Teaching Courses	Primary indicator	Weights	Secondary indicators	Weights	Three-level indicator	Weights
	A	0.444	A1	0.296	All	0.094
					A12	0.019
					Al3	0.035
					Al4	0.025
					A15	0.072
					Al6	0.051
			A2	0.148	A21	0.066
					A22	0.017
					A23	0.066
	B	0.444	B1	0.148	B11	0.047
					B12	0.045
					B13	0.01
					B14	0.045
			B2	0.296	B21	0.045
					B22	0.09
					B23	0.007
					B24	0.045
					B25	0.026
					B26	0.038
					B27	0.045
	C	0.112	C1	0.037	C11	0.007
					C12	0.022
					C13	0.007
			C2	0.075	C21	0.018
					C22	0.005
					C23	0.034
					C24	0.018

4. Practical Research on the Performance Evaluation System of College Students' Online Courses

In order to put the practical application effect of my college students' online learning performance evaluation index system, this study selected 203 students from a certain “211 Project” school as the survey object. The school's online teaching platform includes excellent courses, teaching notices, and resource sharing. Common functions such as course management, experiment channel, expert Q&A, personal space, etc., and the usage rate is high. In this study, a questionnaire was set up according to the college students' online course learning performance evaluation system. A total of 203 questionnaires were distributed to collect 203 questionnaires, of which 18 were invalidated, and the effective recovery rate was 91.13%. The results of the survey are shown in

Table 3.

It can be seen from Table 3 that the comprehensive evaluation score of the comprehensive evaluation of the student network course learning performance evaluation of a 211 university management school is 68.95%, and the total score is 3.447, which is between the general and the comparative, indicating that the learning performance of the students in the surveyed school needs to be improved. Further analysis of the results of the first-level indicator A (learning behavior and attitude), found that the average score of the index is at a general level, of which A1 (method strategy) is at a general level, and A2 (emotional attitude) is in good water. Among the A1 indicators, A13 (learning resource organization and utilization) and A15 (problem discovery and resolution) have the lowest scores. Students rarely voluntarily find problems in the online course learning process and are not good at using network platform teacher-student communication channels and other The functional area solves the problem in learning, indicating that the students still belong to passive learning, and the proportion of active learning is not high. A2 score is better than A1, indicating that students perform well in learning attitudes. Analysis of the first-level indicator B (online course satisfaction) evaluation results found that the average score of the indicator was 3.515 at a good level, with B1 (course content) performance and B2 (teaching design) performance. Specifically, in B1, B11 (course arrangement) is generally average but B12 (scientific curriculum) is more consistent, indicating that students have higher scientific satisfaction with the course and the course content is more standardized. B13 (course duration) and B14 (providing learning resources) are generally average, indicating that the course content still needs to be improved. Among the B2 indicators, the evaluation scores are all around 3.5, which is between the general and the comparative, and the performance is good. The average score of B24 (learning counseling and feedback) is 3.535, which indicates that teachers can provide timely counseling and answering questions for students. effective. Analysis of the first-level indicator C (distant platform satisfaction) evaluation results found that the average score of the indicator is 3.581 is in a good level, and the average score of C1 interface design and C2 platform technology are higher than 3.5, but C13 (indicating help) The score of only 3.395 is at a general level to be improved.

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Table 3 Results of a survey on the performance of online courses for college students

Primary indicator	Scoring rate	average score	Secondary indicators	Scoring rate	average score	Three-level indicator	Weights	Evaluation level					Scoring rate	average score
								1	2	3	4	5		
A 0.444	68.28%	3.414	A1	65.02%	3.251	All	0.094	12	31	58	58	26	65.95%	3.297
						A12	0.019	14	35	48	65	23	65.20%	3.259
						Al3	0.035	15	35	51	57	24	64.00%	3.2
						Al4	0.025	11	26	65	56	28	66.91%	3.346
						A15	0.072	12	45	53	56	19	62.70%	3.135
						Al6	0.051	9	27	69	57	23	66.28%	3.314
			A2	74.82%	3.741	A21	0.066	2	21	49	74	42	74.05%	3.703
						A22	0.017	2	18	48	72	44	74.92%	3.746
						A23	0.066	1	20	42	78	44	75.57%	3.778
B 0.444	68.94%	3.515	B1	67.76%	3.596	B11	0.047	4	39	63	42	36	67.35%	3.368
						B12	0.045	1	15	30	54	85	82.38%	4.119
						B13	0.01	2	25	64	59	35	70.81%	3.541
						B14	0.045	4	37	63	51	30	67.14%	3.357
			B2	69.53%	3.476	B21	0.045	9	27	43	77	29	69.73%	3.486
						B22	0.09	7	23	66	63	26	68.43%	3.422
						B23	0.007	3	28	64	63	27	68.97%	3.449
						B24	0.045	6	24	44	87	24	70.70%	3.535
						B25	0.026	3	31	59	68	24	68.54%	3.427
						B26	0.038	7	29	34	66	49	73.08%	3.654
						B27	0.045	7	25	64	65	24	68.00%	3.4
C 0.112	71.62%	3.581	C1	70.79%	3.539	C11	0.007	3	19	46	86	31	73.30%	3.665
						C12	0.022	11	18	49	73	34	70.92%	3.546
						C13	0.007	18	18	45	81	23	67.89%	3.395
			C2	72.03%	3.602	C21	0.018	3	22	60	70	30	71.03%	3.551
						C22	0.005	3	15	61	72	34	72.86%	3.643
						C23	0.034	3	15	60	82	25	72.00%	3.6
						C24	0.018	63	16	53	85	28	72.86%	3.643
Total score								3.447						
Total Score								68.95%						

Note: Evaluation levels 1, 2, 3, 4, and 5 indicate very non-conformance, non-conformity, general, comparative, and very consistent, respectively.