Differentiated Effects and Impact Paths of Online and Offline Hybrid Teaching Models for Theoretical and Practical Public Administration Courses

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Abstract—This study uses empirical data to evaluate the effectiveness of courses that adopt online and offline hybrid teaching models in public administration disciplines. The subjects of the survey were students who engaged in the online and offline hybrid teaching model at a school of public administration in a Chinese university, and the information of 108 valid samples was collected for analysis. The findings show that there is a significant correlation between perceived quality of online learning, perceived quality of offline learning, and changes in learning attitudes. The perceived quality of learning platforms and the level of expectation for blended online and offline teaching models are significantly correlated with students' autonomous learning ability. The change in learning attitude and the ability to learn independently are significantly correlated with the online and offline blended learning model. The perceived quality of learning platforms, online learning, and offline learning interact with each other.

Keywords- online and offline hybrid teaching model; public administration discipline; Customer Satisfaction Index Introduction

1 INTRODUCTION

Online and offline hybrid teaching models offer students the flexibility to learn at their own pace and schedule. It allows them to access course materials online and study at their convenience, while still having some face-to-face interaction with teachers and peers during offline classes. This flexibility can be especially beneficial for working professionals or individuals with other commitments.

Meanwhile, online platforms provide a wealth of learning resources, including digital textbooks, multimedia materials, and interactive simulations. By embracing hybrid models, students can leverage these resources to enhance their understanding of the subject matter and gain access to a wider range of learning materials than what may be available in traditional offline classrooms alone.

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In the Outline of the National Medium and Long-term Education Reform and Development Plan (2010-2020), the Ministry of Education of China pointed out that it should learn from the advanced international educational concepts and experience, make full use of high-quality resources and advanced technology, innovate the operation mechanism and management mode, strengthen the development and application of high-quality educational resources, introduce international high-quality digital teaching resources, establish an open and flexible public service platform for educational resources, and promote the popularization and sharing of high-quality educational resources. The online and offline mixed teaching mode has changed the traditional teaching concepts and methods, and effectively promoted the development of educational informatization and active learning mode, which is based on the ides of student development, student learning and learning effect. However, in the actual teaching process, many teachers and students reflect that the mixed teaching mode of online and offline increases students' learning time, increases students' learning burden, and the learning effect is not obvious[1,2,3,4,5]. Some teachers and students think that the online and offline mixed teaching mode is not necessarily applicable to all courses, and should be taught according to the type of courses [6,7,8,9,10,11]. In view of this, this study attempts to evaluate the effect of online and offline hybrid teaching mode in public management disciplines through empirical research.

The specific questions of this study include three: (1) What is the effect of the online and offline hybrid teaching mode? (2) Is there any difference in the effect of blended teaching mode between theoretical and practical courses? (3) What factors affect the classroom effect of blended teaching mode?

2 METHOD

2.1 Research objects

The research objects are the course objects of online and offline hybrid teaching models implemented at a school of public administration in a Chinese university, and the information of 108 valid samples was collected for analysis.

2.2Research objectives

There are three research objectives of this study: First, constructing the evaluation index system of the effect of online and offline hybrid teaching mode with high reliability and validity; Second, summarizing the experience and shortcomings of online and offline mixed teaching mode, and optimizing the teaching structure of the course. Adjusting the teaching mode according to the course type and improving the teaching quality; Third, developing multimedia teaching courseware and excellent demonstration courses adapted to online and offline hybrid teaching mode from the perspective of students, as well as summarizing the effective methods and modes of integrated teaching.

2.3Main variables

First, the students having taken courses of public management discipline in the past three years which adopt the online and offline mixed teaching mode were included. Both technology acceptance model (TAM) and Customer Satisfaction Index (CSI) are used as the research framework . The framework contains four structural variables, namely, student learning expectation, perceived quality, perceived value and student satisfaction. Student satisfaction is the effect, that is, the outcome variable. The questionnaire is measured by "your overall satisfaction with the online and offline blended teaching mode". There are five levels from "very satisfied" (1) to "very dissatisfied" (5).Perceived quality includes online classroom usefulness, online classroom ease of use, learning platform usefulness, learning platform ease of use and offline classroom delivery. The five variables of mutuality are observed. Considering that teaching expectation belongs to a special service product, especially the lack of sufficient feedback from learning experience in the new teaching reform. In addition to the individual differences of learners, it is difficult to standardize and measure the expectations of teaching mode. Therefore, students are expected to learn mainly through "How much do you like the online and offline hybrid teaching mode?"? This question was measured on a five-point scale from "very much like" (1) to "very much dislike" (5).Perceived value is mainly analyzed from the perspective of learning efficiency, mainly through the development of online and offline blended teaching. Has your attitude towards learning changed? Do you think online learning before class is conducive to improving autonomous learning ability?" Two dimensions are measured, and learning attitude is divided into three grades from getting worse to getting better." The degree of autonomous learning ability improvement is divided into four levels from very favorable to unfavorable. The designed questionnaire first collects a certain amount of questionnaires through a trial survey. After revision, a formal questionnaire was formulated to investigate the target group.

2.4 Data analysis

SPSS and AMOS software were used to test the reliability and validity of the questionnaire. Descriptive statistics, regression analysis and path analysis are used to analyze all kinds of variables and influencing factors. Descriptive statistics and the linear regression analysis (Model 1 to Model 3) were carried out by SPSS software. SEM (Structural Equation Modeling) was used for path analysis.

3 RESEARCH RESULTS

Table 1 is a description of the basic situation of the respondents. There are fewer male students and more graduate students. In the sample of the survey, 51.9% of the students thought that their learning autonomy and self-control ability were general. 52.8% of the students prefer the online and offline mixed teaching mode, that is, they have higher expectations for the online and offline mixed teaching mode. The attraction of online and offline blended teaching mode to the respondents is rich teaching resources, blended teaching mode and online discussion area, and classroom group discussion in turn. The average value of the usefulness of online resources to learning courses is 2.05 (1-5).The mean value of satisfaction with online class discussion was

2.36 (1-5).The average value of satisfaction with offline learning teachers' organization of classroom learning is 1.94 (1-4).The mean value of satisfaction with offline learning course tasks is 1.97 (1-4).The mean value of satisfaction with teachers' classroom guidance was 1.82 (1-4).The average value of satisfaction with the course assessment method is 1.98 (the value is 1-4).The average value of the overall satisfaction with the online and offline blended teaching mode is 2.04 (the value is 1-5). After carrying out online and offline blended teaching, 30.6% of the students have a more positive attitude towards learning than before, and 10.2% of the students are more lazy than before.59.3% of the students did not change their learning attitude.19.4% of the students thought that online learning before class was very helpful to improve their autonomous learning ability. 53.7% believed that it was more conducive to improving autonomous learning ability.

Table 1 Description of variables (n = 108)

Variables	**Average or percentage**	**Standard deviation**
Sex (Male)	29.6%	
Student types		
Undergraduate	35.2%	
Graduate students	64.8%	
Learning autonomy and self-control ability		
Very good	4.6%	
Better	33.3%	
General	51.9%	
Not good	10.2%	
How much do you like the online and offline hybrid teaching mode?		
Like it very much	12.0%	
I prefer it	52.8%	
General	26.9%	
Not really	7.4%	
Don't like it very much	0.9%	
Compared with offline teaching, what do you think is more attractive to you in online and offline blended teaching?		
Blended teaching mode	59.3%	
Abundant teaching resources	61.1%	
Online discussion area	30.6%	
Classroom group discussion	24.1%	
Satisfaction with online learning resources obtained in online and offline blended classroom	2.14	0.742
The extent to which online resources are useful for learning the course	2.05	0.778
The degree to which it is easy to conduct online classroom learning when taking online courses	2.22	0.900
Satisfaction with online class discussion	2.36	0.870
Degree of satisfaction with the offline learning teacher's organization of	1.94	0.681

classroom learning		
Satisfaction with Offline Learning Course Tasks	1.97	0.690
Degree of satisfaction with teacher's classroom instruction	1.82	0.639
Degree of satisfaction with the course assessment method	1.98	0.697
Overall satisfaction with the online and offline blended teaching model	2.04	0.748
Has your learning attitude changed after the online and offline blended teaching?		
No, I have always been very positive	51.9%	
No, I've always been very tired of learning	7.4%	
More positive than before	30.6%	
More lazy than ever	10.2%	
Online learning before class is conducive to improving the degree of autonomous learning ability?	2.11	0.753
Very beneficial	19.4%	
More favorable	53.7%	
Not obvious	23.1%	
Not good for	3.7%	

Model 1 of Table 2 shows the factors that affect the change of students' learning attitude (the values are 1, 2 and 3, which are expressed as getting worse, no change and getting better, respectively).The results showed that students' learning autonomy and self-control ability significantly affected their learning attitude ($p = 0.056$).Students with stronger learning autonomy and self-control ability are in the online and offline blended learning mode. The change in learning attitude was positive ($B = 0.161$).Compared with elective courses, basic theory courses are based on online and offline blended learning mode. The change of students' learning attitude was more positive ($B = -0.200$, $p = 0.098$).In the online and offline blended learning mode, the perceived quality of offline learning has a significant impact on the change of students' learning attitude ($p = 0.042$).The perceived quality of online learning and the perceived quality of learning platform do not significantly affect students' learning attitude.

Model 2 of Table 2 shows the factors affecting the change of students' autonomous learning ability. The results showed that the degree of anticipation ($p = 0.015$) of the online and offline hybrid teaching model and the perceived quality of the learning platform significantly affected students' learning in the online and offline hybrid teaching model. The autonomous learning ability in the blended learning mode ($p = 0.050$) has a positive effect.

Model 3 of Table 2 shows the factors affecting the overall satisfaction of the online and offline blended learning model. The results show that both the expected degree of online and offline hybrid teaching mode and the perceived quality of online learning and the perceived quality of

offline learning significantly affected the overall satisfaction ($p < 0.01$), and both of them were positive.

Table 2 Influencing factors of learning attitude change, autonomous learning ability, and overall satisfaction of online and offline blended learning mode (n = 108)

	Linear Regression Model 1		Linear Regression Model 2		Linear regression Model 3	
Independent variable	B	p value	B	p value	B	p value
(Constant)	2.857	0.000	0.394	0.427	-0.180	0.614
Gender (Male = 1, Female = 2)	-0.021	0.869	0.126	0.378	-0.034	0.740
Student Category (Undergraduate = 1, Graduate = 2)	0.111	0.350	-0.122	0.350	-0.004	0.969
The degree of anticipation of the online and offline hybrid teaching model	-0.101	0.226	0.226	0.015	0.181	0.007
Learning autonomy and self-control ability	0.161	0.056	0.072	0.432	0.063	0.342
Type of course (required course = 1, elective = 2)	-0.200	0.098	0.043	0.741	-0.053	0.576
Perceived quality of online learning	-0.084	0.123	0.066	0.265	0.216	0.000
Perceived quality of offline learning	-0.110	0.042	0.014	0.816	0.121	0.005
Perceived quality of learning platform	0.021	0.738	0.133	0.050	0.070	0.149

Table 3 reports the relationship between students' perceived quality, expected value and satisfaction in the online and offline hybrid teaching model. The results show that there is a significant correlation between perceived quality of online learning, perceived quality of offline learning and learning attitude change. The perceived quality of learning platform and the expectation of online and offline hybrid teaching mode are significantly related to students' autonomous learning ability. Learning attitude change and autonomous learning ability are significantly related to online and offline blended learning mode. The perceived quality of learning platform, the perceived quality of online learning and the perceived quality of offline learning influence each other.

Table 3 Path Analysis Results of Expected Value-Perceived Quality-Satisfaction (n = 108)

			Estimate	**P**
Learning attitude	<---	The degree of anticipation of the online and offline hybrid teaching model	-0.104	0.119
Learning attitude	<---	Learning platform	0.065	0.247
Learning attitude	<---	Perceived quality of online learning	-0.084	0.095
Learning attitude	<---	Perceived quality of offline learning	-0.127	0.014

Autonomous learning ability	<---	Perceived quality of offline learning	0.019	0.728
Autonomous learning ability	<---	Perceived quality of online learning	0.083	0.124
Autonomous learning ability	<---	Learning platform	0.137	0.024
Autonomous learning ability	<---	The degree of anticipation of the online and offline hybrid teaching model	0.22	0.002
Overall satisfaction with the online and offline blended teaching model	<---	Learning attitude	-0.325	0.002
Overall satisfaction with the online and offline blended teaching model	<---	Autonomous learning ability	0.398	<0.001
Learning platform	<-->	Perceived quality of online learning	1.649	<0.001
Perceived quality of online learning	<-->	Perceived quality of offline learning	0.808	<0.001
Learning platform	<-->	Perceived quality of offline learning	0.865	<0.001

4 CONCLUSIONS

Based on the findings of the study, the following recommendations are made: First, the online and offline blended learning mode of theoretical courses can help to improve students' learning attitude. Second, in the online and offline blended learning mode, strengthening the quality management of offline learning is conducive to improving students' learning attitude. Third, strengthening the construction of online learning platform is helpful to improve students' autonomous learning ability[12,13]. Fourth, at the same time, universities should strengthen the quality management of online and offline learning[14,15,16]. It is helpful to improve the overall satisfaction of students in the online and offline blended teaching mode. Fifth, students' expected attitude towards online and offline blended teaching mode will affect students' autonomous learning ability, and then affect their overall satisfaction. Therefore, universities need to improve students' expected attitude towards online and offline blended teaching mode through various ways. Last but not least, online learning platform, online learning effect and offline learning effect influence each other, so it is necessary to strengthen the construction of the three. Only in this way can the overall satisfaction be effectively improved.

Proficiency in online learning tools and technology is becoming increasingly essential. By studying online and offline hybrid teaching models, students gain experience navigating digital platforms, communicating effectively online, and leveraging new technologies for learning. These skills are highly transferable and can prepare students for future educational and professional endeavors.

This study is limited to a school of public administration in one university. Thus, the findings may not be generalized to all universities in China due to selection bias. Studies with larger samples are needed for increasing understanding of the relationships among learning attitude change, autonomous learning ability, and overall satisfaction of online and offline blended learning mode. Future researches can replicate this study design in other disciplines and universities, to improve the generalizability of the research findings.

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