Construction and Empirical Analysis of a Blended Teaching Satisfaction Model for Introduction to Fintech Based on OBE Concept

Xiaoyin Hu[1, a]

[1]Department of Big Data and accounting, Wenzhou Polytechnic, China

[a]E-mail: xiaoyinhu919@163.com

Abstract

In the context of fintech development, it has full role and significance to cultivate applied financial talents through OBE concept and blended teaching. Based on seven variables that affect students' satisfaction, a hybrid teaching satisfaction model is constructed. It was found that students' perceptions of teaching quality varied among individual learner factors. Online learning quality perceptions had a significant positive effect on perceived value and student satisfaction, while offline learning quality perceptions had no significant effect on perceived value and student satisfaction. Combined with the results of the model experiment, we propose insights on blended learning based on OBE concept for finance students in universities and suggest relevant suggestions to improve student satisfaction.

Keywords

Blended learning; Empirical analysis; Fintech.

1. Introduction

The Internet scene, big data technology, cloud computing and artificial intelligence have strongly impacted the traditional industrial economy with technology and capital as the core, giving rise to the information economy with data as the key element to generate effectiveness. Since 1866, the first stage of financial globalization, the second stage of financial digitization and the third stage of financial mobility have shown that FinTech has been innovating with the progress of the times.

At the same time of the rapid development of financial technology, the cultivation of related talents has become a problem faced by universities. Fintech talents are technical and business talents with high requirements for comprehensive ability, with outstanding technical ability and meticulous financial business logic.

However, in the current development of local vocational colleges, there are still some challenges and difficulties for the cultivation of fintech talents that cannot be ignored, such as the imperfect training programs for talents and the lack of systematic teaching materials related to fintech. Therefore, the teaching method of thematic teaching enables students to follow the frontier of fintech application and the corresponding business technology, which is conducive to the cultivation of professional and technical talents. The OBE concept is conducive to the cultivation of professional talents in response to the actual needs of society, and it is also conducive to the establishment and setting of learning goals by students; the hybrid teaching focuses on the effective use of online and offline resources by students, which has a significant effect on the course objectives and classroom effectiveness.

2. The Blended Teaching Model Based on OBE Concept

The OBE (Outcome-Based Education) concept proposes that instructional design is based on the learning outcomes, that is, the maximum learning ability that students can achieve, and advocates teaching according to the students' abilities, focusing on the development of abilities, and taking the learning output and the feedback of the outcomes as the basis of instructional design. Feedback is the basis for improvement of instructional design. The feedback not only focuses on the input of knowledge but also on the output of ability, aiming to let students master a systematic and comprehensive knowledge system in a deeper level, and to optimize and improve on this basis. The blended teaching approach is not only a simple mechanical addition of the traditional learning mode and the online learning mode, but also fully exploits the autonomy of both teachers and students, the sense of communication between students and the interaction between students and sources, and fully gives students the space for personalization, initiative and creativity, so as to play a good teacher's main guide. The assessment of the effect is also a combination of traditional paper assessment and itinerary assessment, with the means of "less teaching and more learning" to focus on whether students have a sense of teaching participation, whether they have a sense of teaching depth, and whether they have achieved the development of ability. In summary, there are commonalities between the blended learning model and outcomes-based education.

Although there are many studies on OBE concept and blended teaching design, there are few for related courses such as Introduction to Financial Technology. Therefore, this study attempts to apply OBE concept throughout many aspects such as learning outcome setting, teaching process, teaching content, teaching activity design and achievement evaluation of Introduction to Financial Technology course, and higher education institutions in optimizing teaching level as well as improving teaching method process, it is beneficial to apply the OBE concept to blended teaching.

3. Validation of The Theoretical Model Based on The OBE Concept of Blended Teaching

3.1. Research Design

3.1.1. Research Hypothesis

In the implementation and acceptance phase of this project, it is proposed to establish a questionnaire study for course satisfaction assessment and build the corresponding empirical analysis. The model consists of seven variables: student expectation, offline teaching, online teaching, online/offline interaction, perceived value, student satisfaction and willingness to continue learning (Pei, Lihua, 2021). Among them, student expectation, quality perception and perceived value are the antecedent variables of hybrid teaching satisfaction, and willingness to continue learning is the outcome variable of student satisfaction. The specific meanings of the seven potential variables and the corresponding explanations of the variables are as follows.
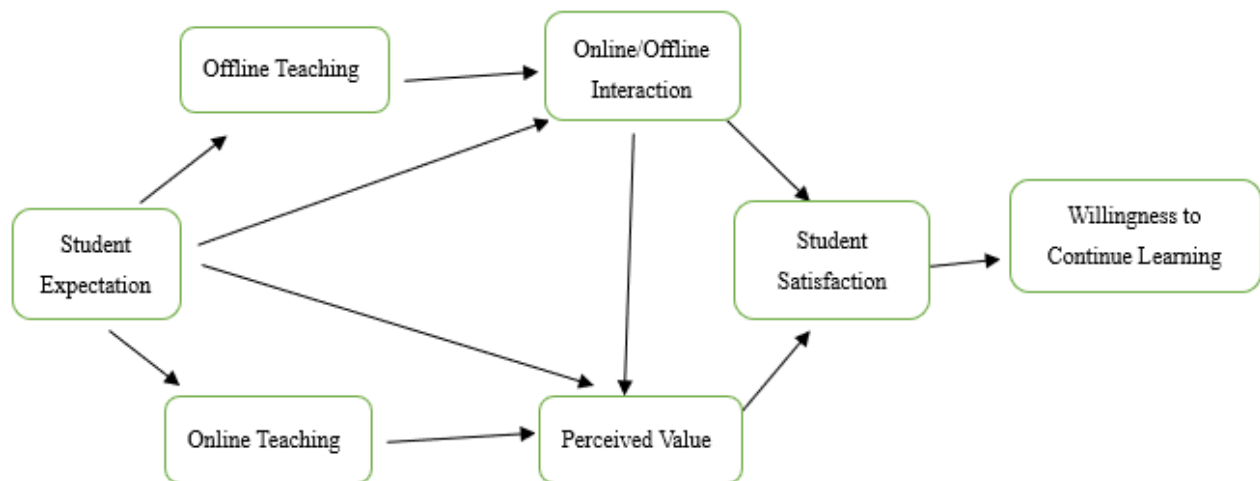
Figure 1. Path Diagram of Student Satisfaction Model

Based on the above theoretical model and theoretical knowledge, the following hypothesis is proposed:

Table 1. Research Hypothesis

Assumptions	Variables	Influencing effects	Variables
H1-H5	Student Expectations	Positive Impact	Online Teaching Quality
			Offline Teaching Quality
			Online and offline interaction
			Perceived Value
			Student Satisfaction
H6-H8	Perceived quality of offline teaching	Positive Impact	Online and offline interaction
			Perceived Value
			Student Satisfaction
H9-H11	Perceived quality of online teaching	Positive Impact	Online and offline interaction
			Perceived Value
			Student Satisfaction
H12-H13	Online and offline interaction	Positive Impact	Perceived Value
			Student Satisfaction
H14	Perceived Value	Positive Impact	Student Satisfaction
H15-H16	Perceived Value	Positive Impact	Desire to continue learning
	Student Satisfaction		

3.1.2. Questionnaire Design

For the above hypothetical variables, this experimental questionnaire was designed in two parts: the first part was the basic personal information of the students, which included gender, age, major, difficulty of the course taken, and teaching mode preference. The second part is a questionnaire on respondents' satisfaction with blended teaching, which contains 34 questions and is measured by Likert 5-point scale.

3.1.3. Research Subjects

According to the theme of the study and the operability of the survey, this study selected 17-19 finance students in Wenzhou X colleges and universities as the subjects of the questionnaire, the questionnaires were distributed through the WeChat platform, 285 questionnaires were issued in total, 230 questionnaires were returned. Excluding invalid questionnaires, the final valid questionnaires were 215, with an effective rate of 75.44%.

3.2. Research Results and Discussion

3.2.1. Descriptive Statistical Analysis and Reliability Test

There were 215 students took the survey, including 127 male students (59.1%) and 88 female students (40.9%); the most students chose the medium course difficulty level, accounting for 47.9%, and the most preferred teaching mode was online and offline mixed teaching mode, accounting for 71.6%.

In this experiment, the overall Cronbach's alpha coefficient was 0.95. It can be known that the overall reliability is relatively high, and the values of each data are over 0.8, which confirms the high reliability of the data of each dimension of this study. The questionnaire validity was analyzed by KMO index, and the overall KMO statistic value was 0.915, indicating that the questionnaire had high structural validity, and the KMO index of each dimension was above 0.7; the Bartlett statistic values were all less than 0.001, which was suitable for factor analysis. In this study, the validity of the data was tested by factor analysis, and the results showed that the KMO value was 0.886 and the probability of significance p-value was less than 0.01. Meanwhile, the data were orthogonally rotated by the maximum variance method through the principal component analysis, and seven common factors were extracted based on the criterion of "eigenvalue greater than 1". The 34 latent variables cover most of the research questions. In other words, the questionnaire of student satisfaction factors of blended teaching has good content validity, and the questionnaire items are comprehensive, reasonable, and clear.

3.2.2. Results of The Empirical Analysis

Table 2. Correlation Analysis

	Learning Expectations	Perceived quality of offline teaching	Perceived quality of online learning	Online and offline interactive perception	Perceived Value	Student Satisfaction	Desire to continue learning
Learning Expectations	1						
Perceived quality of offline teaching	0.421**	1					
Perceived quality of online learning	0.308**	0.796**	1				
Online and offline interactive perception	0.389**	0.666**	0.567**	1			
Perceived Value	0.457**	0.621**	0.580**	0.606**	1		
Student Satisfaction	0.411**	0.678**	0.574**	0.587**	0.568**	1	
Desire to continue learning	0.334**	0.641**	0.550**	0.611**	0.439**	0.653**	1

**:P<0.01

Table 2 shows that there is a two-by-two correlation between the seven dimensions (p<0.001), and all of them are positively correlated. The correlation coefficient between offline teaching quality perception and online learning quality perception is 0.796, which has a high correlation. The correlation coefficients of perceived offline teaching quality with perceived offline interaction, perceived value, student satisfaction, and desire to continue learning, and the correlation coefficients of perceived offline interaction with perceived value and desire to continue learning and desire to continue learning with student satisfaction are all above 0.6, which have high correlations.

Table 3. Model Results

Models	R	R-side	Adjusted R-side	Standard Error	R-Squared Change Amount	Amount of F Change	df1	df2	Significant F change	D-W Coefficient
M1	0.411	0.178	0.174	3.735	0.178	45.862	1	213	0.000	1.463
M2	0.307	0.095	0.091	3.194	0.095	23.4	1	213	0.000	1.628
M3	0.670	0.463	0.455	2.769	0.463	62.305	3	211	0.000	1.928
M4	0.706	0.501	0.492	2.753	0.501	52.747	4	210	0.000	1.209
M5	0.710	0.518	0.507	3.157	0.518	44.658	5	209	0.000	1.371
M6	0.646	0.433	0.428	1.866	0.433	81.186	2	212	0.000	1.659

Table 4. Coefficient of Variation Analysis Table

Models	Model 1			Model 2			Model 3		
	Regression	Residuals	Total	Regression	Residuals	Total	Regression	Residuals	Total
Square and	641.253	2971.101	3612.353	227.421	2172.272	2399.693	1393.942	1617.807	3011.749
Degree of freedom	1	213	214	1	213	214	3	211	214
Mean Square	641.253	13.949		227.421	10.198		464.647	7.667	
F	45.972			22.3			60.601		
P-value	0.000			0.000			0.000		
Models	Model 4			Model 5			Model 6		
	Regression	Residuals	Total	Regression	Residuals	Total	Regression	Residuals	Total
Square and	1599.508	1592.027	3191.535	2240.657	2083.278	4323.935	564.519	738.337	1302.856
Degree of freedom	4	210	214	5	209	214	2	212	214
Mean Square	399.877	7.581		448.131	9.968		282.26	3.483	
F	52.747			44.958			81.046		
P-value	0.000			0.000			0.000		

According to the statistical results (Table 3, Table 4), the correlation coefficient R of model 1，model 2, model 3, model 4, model 5 and model 6 are 0.411, 0.307, 0.677,0.706, 0.710 and 0.646 respectively, indicating that the linear relationship between them holds; the P values of all six models are <0.05, which proves that the joint significance of all coefficients (except the constant term) of all models is high. According to the DW values of the experiment, it shows that the residual series are not autocorrelated and the regression model is statistically significant. In addition, the variance inflation factor vif of each explanatory variable in the model is less than 10, confirming that there is no serious multicollinearity among the independent variables. Among the three models, model 1 had an F-value of 45.862, model 2 had an F-value of 23.4, model 3 had an F-value of 62.305, model 4 had an F-value of 52.747, model 5 had an F-value of 44.658, and model 6 had an F-value of 81.186. but all passed the statistical test of significance, with model 5 having the best fit.

Table 5. Model Regression Results

Models	M1		M2		M3	
Dependent variables	Perceived quality of offline teaching		Perceived quality of online learning		Online and offline interactive perception	
Independent variables	B	P	B	P	B	P
Learning Expectations	0.681	<0.001	0.402	<0.001	0.196	0.016
Perceived Quality of Offline Teaching	-	-	-	-	0.456	<0.001
Perceived Quality of Online Learning	-	-	-	-	0.133	0.189

Table 6. Model Regression Results

Models	M4		M5		M6	
Dependent variables	Perceived Value		Student Satisfaction		Desire to continue learning	
Independent variables	B	P	B	P	B	P
Learning Expectations	0.321	<0.001	0.166	0.082	-	-
Perceived Quality of Offline Teaching	0.156	0.076	0.432	0.551	-	-
Perceived Quality of Online Learning	0.258	<0.001	0.067	<0.001	-	-
Online and Offline Interactive Perception	0.300	<0.001	0.201	0.015	-	-
Perceived Value	-	-	0.171	0.030	0.062	0.112
Student Satisfaction	-	-	-	-	0.325	<0.001

4. Interpretation of Model Results

The results of the model experiments showed that H1-H4, H6, H10-14 and H16 hold, and H5, H7, H8, H9 and H15 do not. The total effects of specific effects were analyzed as follows.

(1) Among the individual factors, students' perceptions of instructional quality were varied. In Models 1 and 2, students' learning expectations have a statistically significant and positive effect on the perceived quality of both offline and online learning, with higher learning expectations having a stronger perception of quality. For model 3, students' learning expectations and quality perceptions in offline learning have a mutual effect on their interaction perceptions, while quality perceptions in online learning do not have a significant effect, indicating that the higher the students' learning expectations, the higher the quality perceptions in offline learning process, and the stronger the interaction perceptions.

(2) From the results of models 4 and 5, it is clear that online learning quality perceptions have a significant positive effect on perceived value and student satisfaction, while offline learning quality perceptions have no significant effect on perceived value and student satisfaction, which indicates that online teaching has a positive and beneficial effect in blended learning. Students' learning expectations significantly affect perceived value, and the higher the learning expectations, the higher the perceived value, which in turn affects student satisfaction, and the higher the perceived value, the higher the student satisfaction.

(3) The analysis of the results of model 6 shows that the perceived value alone does not have a significant impact on it, but the satisfaction of students has a significant positive impact. The higher the satisfaction, the more students will be motivated to continue learning.

5. Conclusion and Insights

This study uses a multiple linear regression model to investigate the evaluation of finance students' satisfaction with blended learning based on the OBE concept in universities, and the corresponding insights are drawn from the experimental results.

(1) Blended teaching based on the OBE concept is effective in improving academic performance and student satisfaction. In the OBE concept of learning feedback, the output of competence is crucial for students, while the autonomy of both teachers and students, the sense of communication between students, and the interaction between students and sources are fully exploited through blended teaching, giving space for students to take initiative. Students' interest in learning is fully enhanced through the independent learning mode, where they choose the learning content according to their actual and relevant interests. Enhancing in-class activity and student interaction is the key element to strengthen teaching quality. This study is based on "theory + practice", which allows students to follow the frontier of financial technology applications and business technologies, cultivate applied financial talents who can adapt to changes in market demand, and give full play to the online and offline hybrid, integrated content of theory and practice curriculum, to effectively improve the performance of students' professional courses and student satisfaction.

(2) Blended teaching mode needs to combine online and offline teaching in a refined manner. How to effectively integrate online and offline teaching is the key to solve the problem of hybrid education, through the results of the questionnaire, it is not difficult to find that the majority of students generally feel moderately difficult for course learning, and more than 70% of students prefer the mixed mode of teaching, so in the actual offline teaching should pay more attention to students' learning mastery. Therefore, in the actual offline teaching, we should pay more attention to the students' learning mastery and subdivide the online teaching module for the universal difficult knowledge points or difficult to accept knowledge points, so that students can repeatedly replay the learning, further deepen and consolidate the knowledge points of each subject and improve their self-confidence in learning. At present, some online teaching platforms only provide downloadable materials, and do not really combine online and offline teaching rationally. It is necessary to teach students in layers according to their individual differences, and through the effective combination of blended teaching, to achieve the teaching principle of teaching according to individual and material.

(3) Smaller research sample. Due to the new curriculum, the course is currently offered for a short period of time. The type of student majors selected for this study is only for finance students, as well as the corresponding number of students and classes is relatively limited, and only for one university. The learning interests and study habits of students in different grade groups may cause some errors in the study results, and the generalizability of the study results remains to be considered. The strategy will be tested again in the future after it has been further refined and implemented for multiple periods and for multiple majors.

Acknowledgments

References

[1] Pei Lihua, Huang Zhiying, Liu Laichun, Jiang Bai Lian. The construction and empirical test of hybrid teaching satisfaction model under "golden class"[J]. Shandong Higher Education,2021,9(05):39-49.

[2] Zhang Xiaodong. Analysis of undergraduate students' satisfaction with blended learning in colleges and universities in ethnic areas--an empirical analysis based on questionnaires from X colleges and universities in Xinjiang[J]. Higher Education Forum,2018(12):17-21.

[3] Tang E.L, Hua S.Q. Reform of finance teaching in applied colleges and universities in the context of science and technology finance[J]. Journal of Anqing Normal College (Social Science Edition),2016,35(03):154-157.DOI:10.13757/j.cnki.cn34-1045/c.2016.03.037.

[4] Zhang Hongwei, Wang Xinhuan, Jing Penghui. A study on online and offline hybrid teaching mode for part-time graduate students[J]. Journal of Electrical and Electronic Teaching,2021,43(05):24-28+93.