ISSN 2663-8169 Vol. 5, Issue 18: 152-158, DOI: 10.25236/IJNDE.2023.051825

The Relationship between Teachers' Hybrid Teaching Behaviors and Students' Learning Satisfaction in Huaihua Normal College

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Abstract: *This article explores the two factors of teacher hybrid teaching behavior and student learning satisfaction from the subjective perspective of students, as well as the correlation between these two factors. In this study, teacher teaching behavior is divided into seven dimensions, and student learning satisfaction is divided into three dimensions. Through research, it was found that 1) in the teaching behavior of teachers, the average scores of all seven dimensions are not high, indicating that the positive teaching behavior of teachers is not enough. Relatively speaking, the distribution and interactive behavior of online and offline teaching are average, but there is a layer of performance in after-school auxiliary teaching and diversified evaluation; 2) Regarding students' learning satisfaction, according to the survey results, the average scores of these three dimensions are not high, indicating that students' overall satisfaction with learning is not high. Relatively speaking, students are relatively satisfied with the teaching environment and classroom teaching, while their satisfaction with mastering knowledge content and learning experience is slightly lower; 3) The results indicate that students' learning satisfaction is positively correlated with various dimensions of teachers' hybrid teaching behavior, indicating that teachers' positive teaching behavior can improve students' learning satisfaction. Finally, based on the research results, suggestions were proposed from four aspects, hoping to be helpful to teachers implementing hybrid learning.*

Keywords: *hybrid teaching, teaching behaviors, students' learning satisfaction*

1. Introduction

Currently, China's education informatization has entered a new stage. The informatization of higher education is an important prerequisite for promoting higher education reform and improving the quality of education and teaching [1]. At present, hybrid learning has become an important form of teaching organization in higher education reform. By combining online and offline teaching, on the one hand, the advantages of direct communication between teachers and students in offline teaching can be utilized, and on the other hand, the flexible arrangement of online teaching can be utilized, reflecting the purpose of being teacher led and student centered, cultivating students' exploratory learning and innovative practical abilities, and improving teachers' teaching level. With the deepening of information technology and educational reform, the opportunities for the development of hybrid learning are increasing. At the same time, hybrid learning also faces many challenges and the existing problems are becoming increasingly apparent. How to integrate online and offline teaching to improve the effectiveness of hybrid teaching has become an urgent problem to be solved. In hybrid teaching, teachers' teaching behavior plays a decisive role in teaching effectiveness, which can be reflected in students' learning satisfaction [2].

2. Determination of research variables and corresponding dimensions

In order to explore the correlation between teachers' teaching behavior and student satisfaction, this article takes teachers and students from Huaihua Normal College as the research objects, and conducts questionnaire surveys on teachers' teaching behavior and student learning satisfaction, respectively.

This article divides teacher hybrid teaching into seven dimensions, and student learning satisfaction into three dimensions, as shown in Tables 1 and Table 2.

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Table 1: Dimension table of teachers' hybrid teaching behavior evaluation.

variable	dimension	primary coverage
Teacher's hybrid teaching behavior	content of courses	Online content and offline intensive talk
	Teacher support	Basic support and technical support
	Teaching interaction	Ask questions, answer questions, and give feedback
	Offline teaching distribution and offline teaching distribution	Time allocation, content allocation
	Face-to-face classroom organization	Classroom arrangement and organization form
	Auxiliary teaching after class	After-class reflection, task arrangement
	Diversified evaluation	Evaluation method

Table 2: Dimension table of Students' Learning Satisfaction evaluation.

variable	dimension	primary coverage
Learning satisfaction	Classroom teaching	Teaching content, teacher support, and interaction
	Teaching environment	Course resources, platform and learning atmosphere
	learning gain	Knowledge mastery, method gain, and emotional improvement

3. Research samples, survey questionnaires, and reliability and validity testing

This article explores the correlation between teachers' teaching behavior and student satisfaction. A questionnaire survey was conducted on teachers' teaching behavior and student learning satisfaction, with teachers and students from Huaihua Normal University as the research subjects. We know that students are the most direct evaluators of the quality of teachers' teaching behavior. In order to objectively reflect the facts, we have determined that students are the testers of the survey questionnaire.

Based on the overall population of students enrolled in Huaihua Normal College, the sample size was determined using the Krejcie&Morgan sampling method. Considering the actual situation of the school, the total number of students enrolled is approximately 7000, resulting in a sample size of 364.

According to Tables 1 and 2, a teacher hybrid teaching behavior scale and a student learning satisfaction scale were developed. Based on existing research literature and the actual situation of the school, a total of 64 small questions were designed for this survey. The first 5 questions were basic information of the participants in the survey, the middle 44 questions were the teacher teaching behavior scale, and the last 15 questions were the student learning satisfaction scale. The scale adopts Likert's 5-level quantitative scoring, and the higher the score, the more positive the teacher's teaching behavior or the higher the student's learning satisfaction.

4. Questionnaire distribution, data collection, data statistics and analysis

According to the proportion of male and female students in the school, the proportion of grade students, and the distribution of professional students, the distribution targets of the questionnaire were determined. This survey questionnaire was distributed to 30 pre test students through a "questionnaire star" to test the reliability and validity of the survey questionnaire. Through the analysis of data collected from 30 pre test students, the reliability and validity of the survey questionnaire were analyzed to determine whether the hybrid teaching behavior of teachers, student learning satisfaction, and constituent dimensions were credible and effective. The specific results are shown in Table 3.

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Table 3: Summary table of confidence validity analysis (N=30).

Variable	Dimension	Cronbach's alpha	Number of items	KMO and Bartlett sphericity test	
				KMO	sig
Teacher's hybrid teaching behavior	content of courses	0.873	6	0.719	<0.001
	Teacher support	0.990	6		
	Teaching interaction	0.898	6		
	Offline teaching distribution and offline teaching distribution	0.833	8		
	Face-to-face classroom organization	0.887	9		
	Auxiliary teaching after class	0.987	4		
	Diversified evaluation	0.820	5		
Learning satisfaction	Classroom teaching	0.791	6	0.750	<0.001
	Teaching environment	0.824	5		
	learning gain	0.804	4		

From the above table 3, it can be seen that the Cronbach values for the 11 dimensions of both variables are greater than 0.8, Nunnally believes that a Cronbach value greater than 0.5 is an acceptable standard [3], therefore the credibility of the 11 dimensions in the two scales of this questionnaire is acceptable. The KMO coefficients of teachers' teaching behavior and students' learning satisfaction are both greater than 0.7, and the significance of Bartlett spherical test of both is less than 0.05. Therefore, this questionnaire has good structural validity.

4.1 Descriptive statistics of basic information of survey subjects

Table 4: Statistical Table of Basic Information of Survey Subjects (N=364).

	Choice	Number of people	percent
Gender	Male	65	17.9%
	Female	299	82.1%
Grade	First grade	145	29.8%
	Second grade	219	60.2%
Major	preschool education	114	31.3%
	primary education	101	27.7%
	Modern educational technology	23	6.3%
	physical education	23	6.3%
	English education	39	8.0%
	the fine arts	36	9.9%
	other	38	10.4%
Classification	Arts	341	93.7%
	Science and Engineering Building	23	6.3%
reading type	at public expense	18	4.9%
	at one's own expense	346	95.1%

Descriptive statistical analysis can reveal the characteristics of variable related dimensions or components, and is the foundation of statistical analysis. In order to accurately analyze complex data,

ISSN 2663-8169 Vol. 5, Issue 18: 152-158, DOI: 10.25236/IJNDE.2023.051825

such as the correlation between variables, we need to fully understand the relevant characteristics of variables. The first step in data analysis is descriptive statistical analysis. In this study, descriptive statistics were conducted on the basic information of 364 samples in five aspects, including gender, grade, major, major classification, and enrollment category. Through the basic information statistics of the survey questionnaire, there were 65 male students and 299 female students in the sample of this survey. The basic information statistics of the survey subjects are shown in Table 4.

It can be seen from Table 4 that among the students in the survey group, girls are the most, accounting for 82.1%, which is equivalent to the gender ratio of students in Huaihua Normal College. From the basic information statistics, the sample size of second grade students is the largest, with a total of 219 people, accounting for 60.2%. There are 145 first grade students, accounting for 39.8%. Due to reasons such as internships outside the school, there are no courses on campus in the third grade, so we did not accept the survey this time; In terms of the distribution of students' majors, the proportion of students majoring in preschool education and primary education is about 30%, respectively, which is the highest among all majors; There are a small number of public funded students among the surveyed students, accounting for about 5% of the sample. The proportion of students surveyed is basically in line with the objective situation of Huaihua Normal College.

4.2 Descriptive Statistics on teachers' hybrid teaching behaviors

Based on the statistical results of the Teacher Teaching Behavior Scale in the survey questionnaire, the hybrid teaching behavior of teachers is presented in seven dimensions: Content of courses, Teacher support, Teaching interaction, Offline teaching distribution and Offline teaching distribution, Face to face classroom organization, Auxiliary teaching after class, Diversified evaluation, etc. Descriptive statistics of teacher hybrid teaching behavior are shown in the table5.

Table 5: Descriptive Statistics on teachers' hybrid teaching behaviors (N=364).

dimension	M	SD
content of courses	3.42	1.08
Teacher support	3.85	1.25
Teaching interaction	3.25	1.08
Offline teaching distribution and offline teaching distribution	3.38	1.10
Face-to-face classroom organization	3.45	1.15
Auxiliary teaching after class	3.86	1.26
Diversified evaluation	3.41	1.23
Grand Mean Score	3.51	1.16

4.3 Descriptive statistics for students' learning satisfactions

Based on the statistical results of the Student Learning Satisfaction Scale in the survey questionnaire, a detailed analysis of students' learning satisfaction is conducted from three aspects: Classroom teaching, Teaching environment, and Learning gain. The statistical results are shown in Table 6.

Table 6: Statistical Description of students' learning satisfactions

Dimension	M	SD
Classroom teaching	3.13	1.15
Teaching environment	3.5	1.23
learning gain	3.39	1.18
Grand Mean Score	3.34	1.18

4.4 Analysis of the correlation between teachers' hybrid teaching behavior and students' learning satisfaction.

After detailed analysis of teachers' teaching behavior and students' learning satisfaction, Pearson correlation coefficient was used to analyze, merge the 11 dimensions of the two variables according to their respective variables to obtain the overall correlation analysis results of the two variables, as shown in Table 7.

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Table 7: Overall correlation analysis table (N=364)

		Teaching behavior	Students' Learning Satisfaction evaluation
Teaching behavior	Pearson Correlation	1	.862**
	Sig. (2-tailed)		<.001
Students' Learning Satisfaction evaluation	Pearson Correlation	.862**	1
	Sig. (2-tailed)	<.001	
**. Correlation is significant at the 0.01 level (2-tailed).			

In order to visually see the relationship between teachers' hybrid teaching behaviors and students' Learning Satisfaction evaluation, this article uses a scatter plot to describe them, as shown in the following Figure 1.

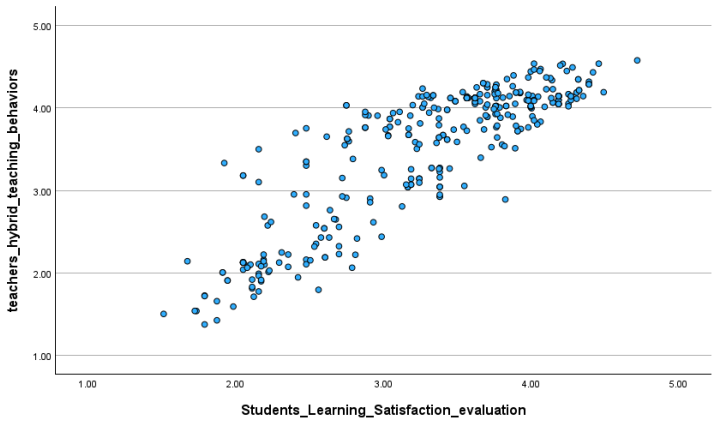

Figure 1: Correlation Scatter Chart.

4.5 Results of Data Analysis

1) According to the statistical results in Tables 5, the average score for each dimension is slightly over 3 points, indicating that teachers at Huaihua Normal College have implemented average positive behaviors in the hybrid teaching process. Through investigation, it was found that teachers can provide students with various course resources, often supervise students to learn, and actively solve various problems raised by students. However, there are still many problems. The division of online and offline teaching time for teachers is not clear, indicating that teachers are not fully prepared before class, and their understanding of students' learning situation and current learning level is not deep enough; The average score of after-school tutoring and teacher-student interaction is not high, indicating that teachers provide relatively less individual guidance to students, as well as have less understanding of learning methods and student communication. From the perspective of diversified evaluation scores, most students believe that teachers lack scientific and effective diversified evaluation methods for hybrid teaching.

2) According to the statistical results in Table 6, the overall average student learning satisfaction is 3.31, which belongs to basic satisfaction.

3) Based on the survey and statistical results, Pearson correlation coefficient analysis was conducted on the 11 dimensions to which the two variables belong. The results showed that there is a good correlation between the hybrid teaching behavior of teachers in Huaihua Normal College and students' learning satisfaction.

5. Conclusion

5.1 After investigation and research, this article draws the following three conclusions

1) Teachers' hybrid teaching behavior can be summarized into seven dimensions, sorted from high to low according to the average size of the survey results: Auxiliary teaching after class, Teacher support, Offline teaching distribution and offline teaching distribution, content of courses, Diversified

ISSN 2663-8169 Vol. 5, Issue 18: 152-158, DOI: 10.25236/IJNDE.2023.051825

evaluation, and Teaching interaction. The average score of these seven dimensions did not exceed 4 points, indicating that the teacher's positive teaching behavior is not enough. Relatively speaking, the distribution and interaction behavior of online and offline teaching are average, but there is a lack of performance in after-school auxiliary teaching and diversified evaluation.

2) Regarding students' learning satisfactions, the order of ranking from high to low according to the average size of the survey results is: Teaching environment, Classroom teaching, and learning gain. The average score of these three dimensions did not exceed 4 points, indicating that students' overall satisfaction with learning is not high. Relatively speaking, students are relatively satisfied with the teaching environment and classroom teaching, while their satisfaction with knowledge content mastery and learning pleasure is slightly lower.

3) There is a significant correlation between students' learning satisfaction and teachers' hybrid teaching behavior. The results indicate that students' learning satisfaction is positively correlated with all dimensions of teachers' hybrid teaching behavior, indicating that teachers' positive teaching behavior can improve students' learning satisfaction.

5.2 The shortcomings are as follows

1) Lack of detailed management rules for the implementation of hybrid teaching.

At the institutional level of Hybrid teaching, there is a lack of unified instructions. Currently, in the policy guidance for Hybrid teaching at Huaihua Normal College, although there are documents requiring teachers to create online courses and implement Hybrid teaching, there is a lack of clear instructions on how to implement and specific implementation requirements, and even more so, there is a lack of implementation rules and management. The implementation rules for hybrid teaching should include management methods for hybrid teaching, development methods for hybrid teaching courses, implementation standards for hybrid classrooms, and implementation guarantees for hybrid teaching [4]. The implementation and management rules for hybrid teaching are formulated based on educational goals, teaching status, and the actual situation of teacher [5]. The application of hybrid teaching is complex, and the workload of teachers greatly increases. With corresponding institutional mechanisms to ensure it, teachers can be effectively encouraged to apply hybrid teaching, standardize teaching, and operate teaching in a procedural and standardized manner.

2) Lack of standardization in hybrid teaching platforms and course resources.

There are various types of platforms for teachers to use hybrid teaching, but there is a lack of unified standards. Teachers have reported that the currently available teaching platforms have poor compatibility with teaching functions and teaching implementation. Students learn between multiple teaching platforms, which increases learning complexity without reason. Schools should invest appropriate funds in cooperating with companies to build platforms and develop and create platforms that are suitable for teaching and have complete functions [6]. Through research, it has been found that the presentation and teaching form of hybrid teaching are single, mainly due to the lack of online course resources. The main reason is that on the one hand, it is difficult for teachers to build and create courses, and on the other hand, it is due to the lack of resource sharing, which makes it difficult to meet the needs of teachers and students, making it difficult for teachers to provide students with rich online teaching content during the development of hybrid teaching.

3) Imperfect incentive mechanism

Any teaching reform ultimately needs to be implemented by teachers. Teachers are the designers and organizers of hybrid teaching, but there is a lack of training for teachers in hybrid teaching. Training for all teachers is poorly targeted. The workload of Hybrid teaching teachers is much larger than traditional teaching, but at the school level, there is a lack of assessment of the work performance and ability of Hybrid teaching application teachers. Teachers with excellent teaching cases and results are difficult to fully recognize, and teachers' rights and interests are not guaranteed, without incentive mechanisms, the initiative of teachers in Hybrid teaching will inevitably be difficult to improve [7].

4) Online and offline teaching did not achieve deep integration

Hybrid teaching is a deep integration of online and offline teaching, specifically manifested as online teaching with resources, offline teaching with activities, supervised teaching process, and guaranteed teaching quality [8]. Through investigation, it was found that most hybrid teaching is a combination of online and offline teaching content rather than a fusion. Although the schedule of online

ISSN 2663-8169 Vol. 5, Issue 18: 152-158, DOI: 10.25236/IJNDE.2023.051825

and offline teaching has been designed and divided, in the process of teaching implementation, the arrangement of online teaching content is less related to offline teaching. The design of Hybrid teaching content should be based on complementarity rather than simple superposition. Online teaching is to make up for the shortcomings of offline teaching, rather than repetition. In addition, teachers lack extracurricular teaching assistance in the application of hybrid teaching, resulting in poor reflection and feedback after class. Under hybrid teaching mode, the classroom can be extended to any time and space at will [9]. Through investigation, it was found that during the auxiliary teaching stage, teachers only assign after-school tasks and thinking exercises, but there is a lack of inspection of after-school tasks and reflection on classroom teaching. And there is also a lack of feedback on after-school teaching. On the one hand, teachers need to collect feedback from students, and on the other hand, teachers need to provide feedback on students' learning situation. Through online communication, teachers and students can reflect together to improve teaching. Research has found that very few teachers collect feedback from students to form their own teaching reflection, which will make the problems that existed in the previous class unable to be effectively solved.

5) Lack of a hybrid teaching curriculum evaluation system

As a transformation of traditional classrooms, Hybrid teaching should naturally be reestablished in terms of teaching evaluation methods [10]. However, research has found that teaching evaluation methods are relatively single, which not only cannot reflect the effectiveness of Hybrid teaching, but more importantly, ineffective teaching evaluation cannot provide teachers with correct feedback, which can lead to deviation in teaching design and make teaching unable to achieve the desired teaching effect. Therefore, a reasonable and effective teaching evaluation system should be established as soon as possible, and diagnostic evaluations should be added on the basis of adhering to the combination of formative and summative evaluations. The evaluation subjects should be as diverse as possible, and forms such as student self-evaluation, group self-evaluation, and teacher-student self-evaluation can be adopted [11]. However, the prerequisite for all this work is to first establish a student-centered hybrid teaching curriculum evaluation system and scoring rules.

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