

A Questionnaire Survey on the Current Situation of Online and Offline Hybrid Teaching for Undergraduate Students in Guangdong

Li Haihong, Yang Siwei

School of Foreign Studies, Lingnan Normal University, Zhanjiang, Guangdong, 524048, China

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Abstract: We conducted a questionnaire survey among undergraduate students from universities in Guangdong Province to understand their current situation in the online and offline teaching mode, using the rating scale of Likert scale and the statistical analysis software of SPASSAU. Then, we obtained answers from 304 respondents and the results indicate that undergraduate students somewhat agree with the online and offline teaching mode and students from different universities show different levels of self-discipline in this hybrid teaching mode. This survey was designed to know more about their attitudes, experience, strategies, self-discipline, and learning effects in the online and offline teaching mode.

1. Questionnaire Design

1.1. Respondents

Respondents in this survey were undergraduate students from universities in Guangdong Province, including the eastern part of Guangdong, northern part of Guangdong, the Pearl River Delta and the western part of Guangdong. The samples were assumed to be representative.

1.2. Sampling method

The method adopted for this survey was simple random sampling.

1.3. Item design

The questionnaire was designed to understand the views and learning status of undergraduate students from Guangdong Province across China on the online and offline teaching mode. The questionnaire was divided into two parts.

The first part contained questions 1-3 to collect the basic personal information of the respondents, including their major categories, grades and the regions where their universities were located.[1]

The second part included questions 4-28, related to the respondent's learning attitudes, learning experience, learning strategies, self-discipline, and learning effects in the online and offline teaching

mode. The 5-point Likert Scale was used in this part, and each question was followed by 5 options with a score of 1-5, suggesting the agreement from strongly agree to strongly disagree (5, 4, 3, 2, 1).[2] Among them, questions 5 and 20 were scored in reverse to indicate the agreement from strongly agree to strongly disagree (1, 2, 3, 4, 5). We analyzed the quantitative data to understand undergraduate students' current situation in the online and offline teaching mode.

2. Survey and Statistical Methods

We designed the questionnaire on the platform of Questionnaire Star (wjx.cn) and showed it to undergraduate students of Guangdong universities, including Lingnan Normal University, Guangdong University of Finance & Economics, Guangdong University of Technology, Guangdong Ocean University, Guangdong University of Finance, Guangdong Pharmaceutical University, Guangdong Medical University, Hanshan Normal University, Guangdong Polytechnic Normal University, etc. The respondents voluntarily identified the Quick Response code and completed the questionnaire.

After the respondents completed the questionnaires, we downloaded their answers from the platform of Questionnaire Star, and analyzed the data by using the platform of SPSSAU.

3. Results and Tests

3.1. Respondent background

Table 1: Frequency of major category, region and grade

Items	Frequency		
	Categories	Percent	N
1. What is the region of your university?	Eastern Guangdong	10.86%	33
	Northern Guangdong	2.96%	9
	Pearl River Delta	23.68%	72
	Western Guangdong	62.50%	190
2. What is your major category?	Liberal arts	55.26%	168
	Science and engineering	44.74%	136
3. What grade are you in?	Freshmen	22.04%	67
	Sophomores	52.63%	160
	Juniors	22.37%	68
	Seniors	2.96%	9
total		100%	304

Answers were obtained from 304 respondents. As shown in Table 1, among them, 55.26% (n=168) were liberal arts students and 44.74% (n=136) were science and engineering students.[3] Among the regions where their universities were located, 10.86% (n=33) were in eastern Guangdong, 2.96% (n=9) were in northern Guangdong, 23.68% (n=72) were in Pearl River Delta, and 62.50% (n=190) were in western Guangdong.

The 304 respondents were 67 freshmen, 160 sophomores, 68 juniors, and 9 seniors, accounting for 22.04%, 52.63%, 22.37%, and 2.96% respectively.

3.2. Reliability test

Table 2: Test results of Cronbach's Alpha

Cronbach Alpha		
N of Items	n	Cronbach α
25	304	0.843

We evaluated the second part of the questionnaire by using Cronbach's Alpha coefficient, and as shown in Table 2: the alpha coefficient for these items was .843 (higher than .80), indicating that these items had relatively high internal consistency and the data were reliable.

3.3. Validity test

Table 3: Test results of KMO and Bartlett

KMO and Bartlett's Test		
KMO		0.852
Bartlett's Test of Sphericity	Chi-Square	2940.710
	<i>df</i>	300
	<i>p</i>	0.000

We tested the construct validity of the second part of this questionnaire and as shown in Table 3, the KMO value = .852 (>.80), *p* value <.001 (<.05), suggesting the presence of a strong partial correlation and ensuring the validity of the results of this questionnaire. Hence, it was plausible to conduct factor analysis.

4. Data Analysis

4.1. Descriptive statistical analysis of the overall situation of online and offline teaching mode for undergraduate students

Table 4: Descriptive statistics analysis of the overall situation of online and offline teaching mode for undergraduate students

Dimension	N of samples	Mean	Std. Deviation
learning strategies	304	3.914	0.638
learning experience	304	3.789	0.605
learning effects	304	3.586	0.606
self-discipline	304	3.451	0.451
learning attitudes	304	3.436	0.513
overall	304	3.635	0.411

From Table 4, it can be seen that the mean value of undergraduate students' overall agreement with the online and offline teaching mode was 3.635, which was between Agree and Neither agree or disagree, and the ranking of their agreement in each dimension was: learning strategies, learning experience, learning effects, self-discipline, and learning attitudes.

4.2. Descriptive statistical analysis of the dimensions of the online and offline teaching mode for undergraduate students

4.2.1. Learning attitudes of undergraduate students in online and offline teaching mode

Table 5: Descriptive statistics analysis of learning attitudes

Title	N of samples	Mean	Std. Deviation
4. I will watch the video again and again until I understand what I don't understand in the video.	304	3.898	0.840
5. I watch the video just to complete the learning progress.	304	2.757	1.028
6. Even if it is an online course, I will still finish the homework, guaranteeing both quality and quantity.	304	3.645	0.851
7. I don't think online courses are as effective as offline, so I prefer to listen to offline courses.	304	3.625	0.990
8. I think the online course has stimulated my interest in learning.	304	3.253	0.885
Overall	304	3.436	0.513

As shown in Table 5, the mean value of the overall agreement of the learning attitudes in the online and offline teaching mode among undergraduate students was 3.436 with a standard deviation of .513, which was between Agree and Neither agree or disagree. Among them, the highest level of agreement was found in question 4.

4.2.2. Learning experience of undergraduate students in online and offline teaching mode

Table 6: Descriptive statistics analysis of learning experience

Title	N of samples	Mean	Std. Deviation
9. I can have a deep depression on what I have learned in online and offline teachings mode.	304	3.789	0.909
10. Online learning leads a lack of communication between me and classmates or teachers.	304	3.668	0.981
11. Long-term online study will make me feel lonely and isolated.	304	3.342	1.078
12. Whether online or offline, I like it when teachers show multimedia animations to students.	304	3.934	0.873
13. Whether online or offline, I prefer to see that teachers are energetic in class.	304	4.211	0.797
Overall	304	3.789	0.605

As seen in Table 6, the mean value of the overall agreement of the learning experience in the online and offline teaching mode among undergraduate students was 3.789, with a standard deviation of .605, which was close to the level of Agree. Among them, the highest level of agreement was found in question 13.

4.2.3. Learning strategies of undergraduate students in online and offline teaching mode

As illustrated in Table 7, the mean value of the overall agreement of the learning strategies in the online and offline teaching mode among undergraduate students was 3.914, with a standard deviation of .638, which was close to the level of Agree. Among them, the highest level of agreement was found in question 14.

Table 7: Descriptive statistics analysis of learning strategies

Title	N of samples	Mean	Std. Deviation
14. In offline classes, I will record the key points by taking notes and photos.	304	4.155	0.774
15. The online video has functions of pause and replay so that I can make the notes more complete and detailed.	304	4.145	0.808
16. Before the offline class, I will study the content that the teacher will teach through the online course on my own.	304	3.589	0.936
17. I will promptly consult electronic tools such as Baidu Encyclopedia for any difficulties I meet during online study.	304	3.980	0.740
18. After completing the online lessons, I will do the exercises to test my learning effects and review and consolidate the new knowledge.	304	3.701	0.901
Overall	304	3.914	0.638

4.2.4. Self-discipline of undergraduate students in online and offline teaching mode

Table 8: Descriptive statistics analysis of self-discipline

Title	N of samples	Mean	Std. Deviation
19. In order to maintain self-discipline, I will set short-term and long-term goals for my online learning.	304	3.530	0.961
20. When I study online, I occasionally do other things that are not related to the course (such as sleeping, playing games, etc.).	304	2.398	0.949
21. When I study online, I hope someone can supervise me.	304	3.510	1.040
22. I think the online and offline teaching mode requires a high degree of self-discipline, otherwise it is difficult to keep up with the course.	304	3.957	0.821
23. I think I pay more attention in offline courses than online.	304	3.862	0.864
Overall	304	3.451	0.451

As shown in Table 8, the mean value of the overall agreement of the self-discipline in the online and offline teaching mode among undergraduate students was 3.451, with a standard deviation of .832, which was between Agree and Neither agree or disagree. Among them, the highest level of agreement was found in question 22.

4.2.5. Learning effects of undergraduate students in online and offline teaching mode

As illustrated in Table 9, the mean value of the overall agreement of the learning effects in the online and offline teaching mode among undergraduate students was 3.586, with a standard deviation of .606, which was between Agree and Neither agree or disagree. Among them, the highest level of agreement was found in question 26.

Table 9: Descriptive statistics analysis of learning effects

Title	N of samples	Mean	Std. Deviation
24. I study more efficiently online than offline.	304	3.184	0.998
25. I don't think online learning will make my poor academic performance.	304	3.365	0.895
26. Through online learning, I realized the importance of self-discipline.	304	4.092	0.765
27. Through online learning, I have improved the ability to manage time on my own.	304	3.839	0.823
28. When learning online, I can master the important and difficult points of each course.	304	3.451	0.851
Overall	304	3.586	0.606

4.3. Analysis of differences in variables for each dimension of online and offline teaching mode among undergraduate students

Table 10: Analysis of variables for each dimension

	1. What is the region of your university? (Mean±Std. Deviation)				<i>p</i>
	Pearl River Delta(<i>n</i> =72)	1.1.1.1.1. eastern Guangdong(<i>n</i> =33)	northern Guangdong(<i>n</i> =9)	western Guangdong(<i>n</i> =190)	
self-discipline	3.43±0.50	3.32±0.44	3.18±0.48	3.50±0.42	0.039*
learning effects	3.58±0.67	3.57±0.53	3.47±0.45	3.60±0.60	0.933
learning strategies	3.95±0.65	3.84±0.52	3.67±1.13	3.93±0.62	0.553
learning experience	3.78±0.64	3.60±0.63	3.53±0.69	3.84±0.58	0.110
learning attitudes	3.40±0.48	3.39±0.49	3.02±0.64	3.48±0.51	0.054

* $p < 0.05$ ** $p < 0.01$

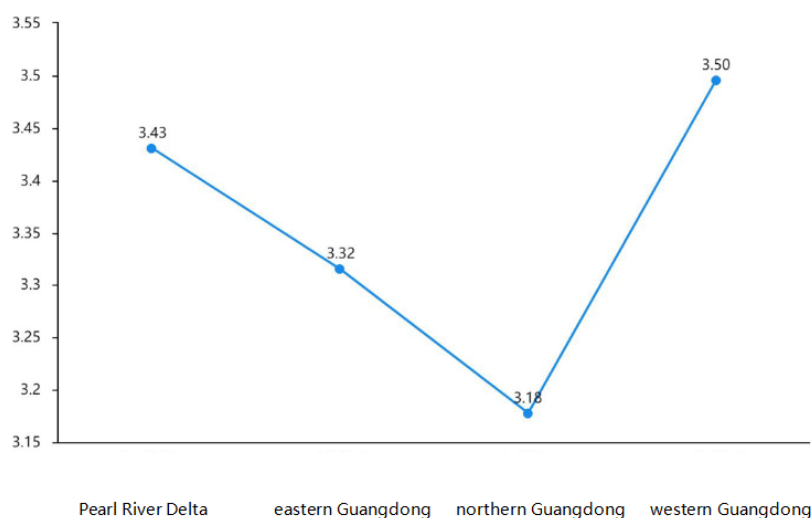


Figure 1: Analysis of difference between learning self-discipline and different regions

As shown in Table 10 and Figure 1, we found a significant relationship between the regions where different universities were located and self-discipline ($p < .05$). [4] However, there was no significant difference between the regions and learning effects ($p = .933$), between the regions and learning strategies ($p = .553$), between the regions and learning experience ($p = .110$), between the regions and learning attitudes ($p = .054$).

And from the above method it is known that different major categories or different grades did not show significant differences on learning attitudes, learning experience, learning strategies, self-discipline, or learning effects.

4.4. Correlation analysis

Table 11: Correlations between learning effects and self-discipline, learning strategies, learning experiences, learning attitudes, respectively

Pearson Correlation (Detail)		
		learning effects
self-discipline	Coefficient	0.360**
	<i>p value</i>	0.000
learning strategies	Coefficient	0.496**
	<i>p value</i>	0.000
learning experience	Coefficient	0.305**
	<i>p value</i>	0.000
learning attitudes	Coefficient	0.267**
	<i>p value</i>	0.000
* $p < 0.05$ ** $p < 0.01$		

We computed a Pearson correlation coefficient to assess the linear relationship between learning effects and self-discipline. As shown in Table 11, there was a significant positive correlation between the two variables, $r = .360$, $p < .001$.

It is also clear from the above method that there was a significant positive relationship between learning effects and learning strategies, between learning effects and learning experiences, between learning effects and learning attitudes.

5. Conclusion

The overall agreement with the online and offline teaching mode among undergraduate students was between Agree and Neither agree or disagree, which indicates that undergraduate students somewhat agree with the online and offline teaching mode. The ranking of their agreement in each dimension is: learning strategies, learning experience, learning effects, self-discipline, and learning attitudes. There is a significant difference between self-discipline and the regions where different universities were located, and there is a significant positive relationship between learning effects and self-discipline, learning strategies, learning experience, learning attitudes.

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