Research on the Application of Network Education Learning in Colleges and Universities in the Information Age

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ABSTRACT

The coming of the Internet era makes more and more universities begin to use network teaching, which has promoted the development of the cause of China's education to a certain extent. The purpose of this paper is to investigate whether network teaching in colleges and universities can meet the daily learning needs of students. In this paper, the author shall obtain data through questionnaire design and use EXCEL 2010 to extract data, and analyze the data with the SPSS 21.0 software. The results show that there are three factors for students to consider whether online teaching can meet their learning needs, namely the national policy, environmental factors, and personal ability. The innovation of this paper lies in the in-depth study of whether college online teaching can meet the daily learning needs of students through online and offline questionnaire surveys.

Keywords: information age, colleges, network, teaching

1. INTRODUCTION

1.1. Background

Most foreign scholars hold a more supportive attitude towards online teaching, they think that the online teaching system is better than the offline traditional teaching mode, and the development of online teaching system in foreign countries is relatively mature, especially in the United States, they have more than 20 years of online teaching history. Some domestic scholars think that network teaching can promote the development of education in our country, in addition, it realizes the sharing of learning resources among colleges and universities, while some other scholars also think that network teaching also has drawbacks, such as "teaching by words and deeds". Through network teaching teachers can only do words teaching, failing to achieve practical teaching. There is no clear answer on whether network teaching can actively promote the development of students' learning. Because domestic scholars only study the advantages and disadvantages of network teaching at the theoretical level, and they fail to investigate whether the network teaching can meet the needs of students' daily life learning, there is certain value on the investigation in this paper.

1.2. What does this Article add?

Based on the previous researches by domestic and foreign scholars, this paper researches whether network teaching can satisfy students' daily study and life by reading literature, questionnaires, and data analysis. This paper starts from the perspective of students' online learning effects, and research this issue.

2. LITERATURE REVIEW

This paper mainly investigates whether the application of network teaching in colleges and universities can meet the daily learning needs of students.
1) William B. Root et al. (2020)[1] believed that online education shall provide individualization, programming, and the practicability and simplicity of self-paced instructions, which are essential in the information age. This kind of programmed network teaching leads the way of the development of teaching science.
2) Xiang, L et al. (2017)[2] thought that in the view of the interactivity, openness, intelligence and adaptability of online education, which can stimulate students' learning initiative and realize real-time interaction and cooperation between teachers and students.
3) Al-Neklawy et al. (2017)[3] believed that although traditional teaching and lectures were considered to be effective in providing information and explanations, they usually cannot provide enough time for deep learning

activities, while online education management can promote teachers to manage educational courses for students.

4) T Smith et al. (2019)[4] collected students' views on online courses and learning experience, obtaining the conclusion that this kind of online education can promote the development of teachers to some extent, in addition, the way of network teaching can broaden the horizons of students and teachers.

5) Liu, Sannyuya et al. (2020)[5] believed that online learning and teaching had become the main form of education during the global epidemic, which can provide everyone with equal educational opportunities. This online learning system is becoming more and more important for the sustainability of education. The time students spent on the online learning system can affect the sustainability and fairness and persistence of education.

6) At present, China has promulgated relevant policies to promote the development of network education. We will implement the Education Informatization 2.0 action plan, which shall scientifically advance the building of an education network, and improve the national digital education resources public service system.

Wu Jinna et al. (2015)[6] believed that in the current era of diversified communication, we should change the traditional teaching mode by taking the applied online technology education as the main part and focusing on the application as the basis to update the current teaching concepts.

Yu Leixin et al. (2020)[7] thought that the content of online education was extremely abundant, and the enrichment of teaching resources in universities made the online materials available for class diversified, which can not only broaden traditional teaching content field, but also improve the teaching quality of management.

Pei Jinhong et al. (2020)[8] believed that based on the "completely online" teaching model during the epidemic period, completely cut off the face-to-face communication among teachers and students and among students and students. Actually, although it brought some difficulties in teaching, at the same time, it can also stimulate students' learning self-consciousness and enhance their self-discipline ability because of the loss of reliance on classroom teaching.

Lu Zhaoyang et al. (2020)[9] thought that network education in universities was becoming more and more mature with the development of the current information age in China. The current online teaching is developing from the simple traditional online teaching mode to the compound teaching mode. In fact, this teaching mode can better meet the needs of modern teaching in our country.

Qian Xinxin (2020)[10] believed that the online teaching model is not only flexible and changeable, being not limited to the location, but also has a high utilization rate of teaching resources. However, compared with offline traditional teaching, offline teaching has a better discipline.

3. METHOD

This paper investigated whether online teaching can meet the learning needs of students. By designing a questionnaire, which it includes the questions such as the gender, grade, contract degree of network teaching, online learning effects, whether online teaching can meet learning needs, and which teaching mode is more inclined. In addition, SPSS 21.0 data analysis software was used to conduct frequency analysis and chi-square test of the above survey content. Among them, $P<0.05$ is considered to be statistically significant. Based on the above analysis, it concludes that the influencing factors about the students consider whether the network teaching can meet the learning needs.

4. RESULT AND ANALYSIS

4.1. Data Sources and Results

A total of 352 questionnaires were issued in the survey, among which 317 valid questionnaires were returned. The effective recovery rate of the questionnaire was 90.1%, of which 146 were males, accounting for 46.1%, and 171 were females, accounting for 53.9%. In general, there are few differences in the ratio of men to women. In this survey, the proportion of people with a college degree and above accounted for 60.88%, the highest proportion, the primary school degrees were followed by, accounting for 20.19%, the third one was the junior high school degrees, accounting for 10.73%, and finally, it was the high school degrees, accounting for 8.2%.

Table 1 Basic Information

Data Sources	Total-n(%)
Sex-%	
Female	171(53.9)
Male	146(46.1)
Grade-%	
Primary school	64(20.2)
Junior school	34(10.7)
High school	26(8.2)
University	193(60.9)
Internet Exposure-(%)	
Always	66 (20.8)
Often	151(47.6)
Sometimes	100(31.5)
Meet Demand-(%)	
Yes	198(62.5)
No	119(37.5)

4.2. Result Analysis

The two principles of whether it can keep up with the progress of the online classroom and the learning effect of online teaching. The chi-square value is 39.720, the progress significance is 0.000, and P<0.05, which shows that whether students can keep up with the classroom progress has a certain impact on the learning effect of online teaching. The results show that: in the process of online teaching, students who can usually keep up with the progress of online classroom have better learning effects, while students who can only follow the class progress occasionally have slightly worse learning effects.

Table 2 Cross-linked Table Analysis

		Class progress		
		Always	Often	Sometimes
Learning effect	Super	21	22	16
	Good	14	73	10
	General	14	98	49
Total		49	193	75
Pearson Chi-Square		39.720[a]		
Asymp. Sig.		0.000		

In this questionnaire survey, 119 people hold the opinion that online teaching cannot satisfy their daily learning needs. The reasons include: 88.24% think that students' self-discipline ability is relatively poor, 78.51% think that teacher management is difficult, 76.47% think that teacher-student interaction is poor, 73.11% think that long-term online teaching will cause myopia, and 66.39% think that there is little communication among students, and 26.05% think that the technical equipment is insufficient. From the above data, we can see that the poor self-discipline ability of students is an important factor for the reason that network teaching cannot satisfy students' needs.

Table 3 Frequency Analysis

The reasons why network teaching cannot meet the needs of the daily life of students			
	Factor	*Frequency*	*Percent*
Valid	Poor self-discipline of students	105	88.24%
	Difficult management of teacher	93	78.51%
	Poor teacher-student interaction	91	76.47%
	Online teaching is prone to myopia	87	73.11%
	Little communication among students	79	66.39%
	Lack of technical equipment	31	26.05%

In this questionnaire survey, 198 people believe that learning through online teaching platforms (Ding Talk, WeChat, Rain Classroom, Learning, Tencent Conference) can meet their daily learning and living demands

Table 4 Chi-square Test Analysis

Chi-Square test of network teaching meeting student's learning needs					
Factors	*Sample N*	*Yes*	*No*	*Pearson Chi-Square*	*Asymp.Sig.*
Resource Sharing	Observed N	131	67	20.687[a]	0.001
	Expected N	99.0	99.0		
No area restrictions	Observed N	142	56	37.354[a]	0.000
	Expected N	99.0	99.0		
Timely feedback	Observed N	72	126	14.727[a]	0.000
	Expected N	99.0	99.0		
Rich learning methods	Observed N	81	117	7.293[a]	0.007
	Expected N	99.0	99.0		
Rich teaching methods	Observed N	123	75	11.636[a]	0.000
	Expected N	99.0	99.0		
Cultivate students' thinking innovation	Observed N	65	133	23.354[a]	0.000
	Expected N	99.0	99.0		

Finally, the questionnaire surveyed which teaching method students prefer. Among them, 10.09% of the students like online teaching, 34.7% of people like offline traditional teaching, and 55.21% of them like blended teaching.

Table 5 Result Analysis

Students prefer the teaching method			
	Way	*Frequency*	*Percent*
Valid	On-line	32	10.09%
	Off-line	110	34.7%
	Mixed type	175	55.21%

5. DISCUSSION

5.1. National Policy

From the perspective of national policies, our country is committed to developing blended teaching. On March 4, 2020, the General Office of the Ministry of Education of our country issued The Key Points of Educational Informatization and Network Security in 2020. This document clarified the train of idea of education informatization, advocated the need of vigorously develop "Internet + education", strengthened the education management information transition and upgraded of the education informatization in our country. In addition, although our government has begun to provide certain funds and equipment to universities across the country, it has not formed an industrialization model, there are certain differences in the funds of universities, and the technical capabilities of university staff needs to be improved. Vigorously developing mixed teaching can expand the scope of students' study and promote the development of education in our country to a certain extent.

5.2. Environmental Factors

In China, the traditional teaching mode has become the background of students' daily learning. This kind of modern educational management has been deeply rooted in our country. With the continuous development of the times, the ideology of the public is also changing, but traditional education is still the mainstream of education in our country. As a new type of teaching method used by colleges, online classrooms are not only a challenge to the field of students' learning cognition, but also a diversified reform of the current educational environment in our country.

5.3. Student Ability

From the perspective of students' ability, self-discipline ability is varied from person to person. In fact, when it mentions that if network teaching can meet the learning needs of daily life, students will first consider whether their own self-discipline can meet their requirements for accepting knowledge or even how much they can learn in this environment. Moreover, the low-grade students have too narrow knowledge of network equipment, and the specific operation of the equipment may go beyond their domain of knowledge.

6. CONCLUSION

Through the investigation, it is found that the primary reason that students believe that network teaching can meet their daily learning needs is that there is no regional restriction, resource sharing is the second reason that they can meet the learning needs, and the last reason is that network teaching can enrich the educational methods in our country. The first reason why students do not think that network teaching can meet their daily learning needs is that students' poor self-discipline ability, and the second reason is the difficulty of management, which shows that students are more psychologically inclined to teachers' control rather than self-restraint. The third reason is the poor interaction between teachers and students and the lack of communication between students, which shows that face-to-face communication conveys information better than network communication. According to the above results, there are three factors for students to consider whether network teaching can meet their learning needs: national policy, environmental factors and personal ability.

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