

# *Research on Online Teaching Satisfaction and Improvement Measures in Local Universities during the Epidemic Prevention and Control Period*

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**Abstract:** In response to the Ministry of Education's appeal to "classes suspended but learning continues", universities actively engage in online teaching by a variety of platforms during the prevention and control time of the new epidemic. The paper investigates and analyzes the satisfaction and influencing factors of online teaching in local undergraduate colleges and universities by questionnaire. The survey revolve around four aspects: basic personal information, the basic situation of online teaching, and student satisfaction with online teaching and its influencing factors. It then proposes appropriate solutions and countermeasures for the issues identified in the survey to promote the healthy growth of online teaching in the post-epidemic era.

## 1. Introduction

People's normal pace of life was disrupted by the abrupt COVID-19 in 2020. In order to prevent and control the epidemic and respond to the call of the Ministry of Education to "classes suspended but learning continues", major universities actively carry out online teaching activities. In this activity, teachers and students in universities used various teaching platforms, such as China University MOOK, Super Star Learning APP, Wisdom Tree, Rainclass, Tencent Classroom, Tencent Conference, etc. In this unprecedented large-scale online teaching practice, the advantages of online teaching transcending time and space limitations and sharing teaching resources across domains has been amply demonstrated<sup>[1]</sup>. Due to its autonomy and flexibility, online learning can be a useful complement to traditional classroom instruction. Mixed online-offline teaching has gradually become standard in college teaching since 2020<sup>[2]</sup>.

The fact that online instruction places high demands on college students' independence in learning, university instructors' ability to teach online, the functionality of teaching platforms, and network dependability is a problem that cannot be ignored<sup>[3]</sup>. Numerous issues with online teaching practices have come to light, including a high reliance on student initiative, a dearth of resources that are particularly suitable, insufficient evaluation and supervision systems, and restricted emotional exchanges between teachers and students. These problems also somewhat impair students' learning satisfaction, drastically decreasing their capacity to learn. So how effective is online education? Are

the students satisfied? What are the factors that affect the effectiveness of online teaching and student satisfaction. In response to the above issues, this paper adopts the "Questionnaire Star" online questionnaire to investigate the effect and satisfaction of online teaching in local universities.

## **2. Research Design**

### **2.1. Research Ideas**

The concept of learning satisfaction is an extension of the concept of customer satisfaction<sup>[4]</sup>. It indicates of students' positive experiences with learning tasks, which can be used to explain learning motivation and results<sup>[5]</sup>. Online learning satisfaction is an important criterion for assessing the effectiveness of online teaching. The school investigated is a local application-oriented undergraduate university. This university offers nearly one and a half semesters of online instruction to meet local epidemic prevention requirements in the first half of 2020 and the second half of 2022 during COVID-19. Therefore, combined with the actual operation of online teaching in research schools, this paper analyzes the satisfaction of online teaching in local undergraduate colleges and its influencing factors based on the questionnaire of online teaching satisfaction during the two COVID-19 periods. Then, corresponding improvement strategies were put forth to give local universities direction on how to implement mixed online-offline teaching<sup>[6]</sup>.

### **2.2. Research Subjects**

The survey targets are full-time undergraduate students from local universities, covering majors such as economics and management, science and engineering, literature and history, and art etc.

### **2.3. Research Methods**

Using questionnaire stars, a questionnaire on "Satisfaction with Online Teaching among College Students" was created. Students of diverse majors and grades received links to the survey website through social media, and they independently completed the questionnaire.

### **2.4. Questionnaire Design**

Four different components of the questionnaire are covered: personal basic information, basic situation of online teaching, satisfaction with online teaching and its influencing factors. The satisfaction survey revolves around three aspect: online teaching effectiveness, teacher online teaching organization, and online teaching platform. The survey consists of 15 items, 7 of which are scale questions that use the Likert five-component scale approach to express responses as "extremely satisfied," "satisfied," "uncertain," "dissatisfied," and "very dissatisfied." There are two open-ended questions and six multiple-answers Questions.

## **3. Analysis of Survey Results**

### **3.1. Basic Information of Respondents**

The respondents to this survey completed 363 valid questionnaires in total, and their professional backgrounds included literature and history (1.65%), science and engineering (2.48%), economic management (94.49%), and other disciplines (1.38%). The respondents were also evenly distributed across all grade levels for freshmen (5.51%), sophomores (17.63%), juniors (63.64%), and seniors (13.22%).

## 3.2. Basic Information of Online Teaching

### 3.2.1. Use of Online Teaching Platform

The teaching platform is crucial in the process of online learning. According to the survey findings, 35.73% of students use Tencent Meeting, 38.83% of students use super star learning APP, 9.18% use WeChat, 8.19% use Tencent Classroom, 3.72% use DingTalk, and 2.61% use Wisdom Tree. As shown in Figure 1.

During the online teaching process, students mainly use Super Star Learning APP and Tencent Meeting. Because Super Star Learning APP can offer comprehensive monitoring and interaction capabilities as well as rich course resources. Tencent Conference also makes interactive communication between teachers and students easy to use and allows live streaming to begin at any time. These two apps working together can improve classroom effects and after-school supervision, which will benefit students' performance<sup>[7]</sup>.

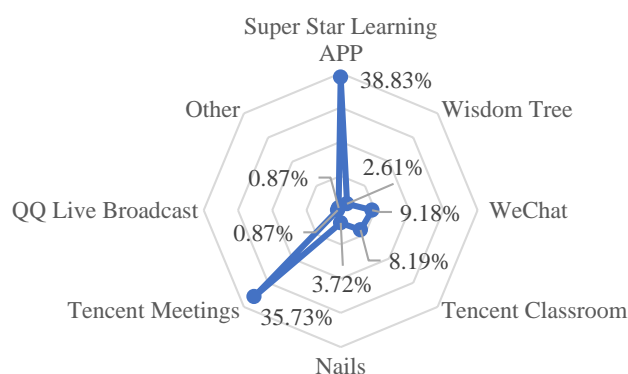


Figure 1: Usage of online teaching platform

### 3.2.2. Online Teaching Method

Because students are essentially unsupervised when learning online and teachers are unable to promptly assess students' learning status, there is little opportunity for interaction between teachers and students in this setting. This lessens the efficiency of online instruction. Proper teaching techniques can improve teacher-student connection, reduce the impact of spatial distance, and enable teachers to quickly grasp students' learning dynamics. According to the poll findings, 50.81% of students preferred classroom live streaming, followed by 28.23% who preferred online video learning and teacher Q&A, and 19.23% who preferred push resources and on-demand learning. As shown in Figure 2.

Students prefer classroom live streaming and teacher live Q&A because live streaming is similar to offline classes, allowing students to experience the classroom more intuitively. During live streaming, teachers and students can communicate directly. For example, during classroom live streaming, it is more convenient for students to ask questions to the teacher, and the teacher can also answer on site. This interaction improves classroom efficiency and Q&A effectiveness. Additionally, it can record lecture material, which makes it simple for students to examine and complete their notes later. Finally, online classes are more convenient than traditional classroom instruction because students can tailor the learning material to their specific needs.

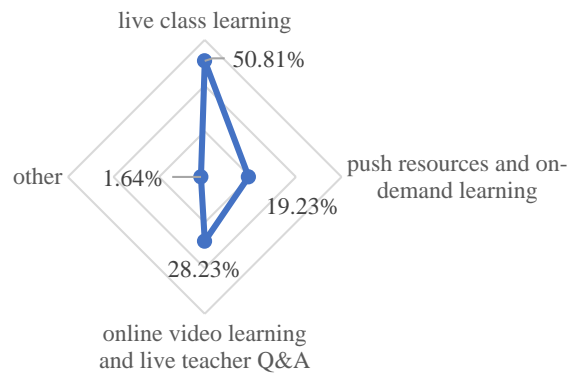


Figure 2: Usage of online teaching methods

### 3.2.3. Online Teaching Resources

According to the study findings, 26.94% of students get their teaching materials from live streaming classes, 27.03% from lectures and PowerPoint presentations, 17.45% from instructional videos, 13.83% from Baidu, Bilibili, and other sources, and some from e-books, MOOCs, and other sources. As shown in Figure 3.

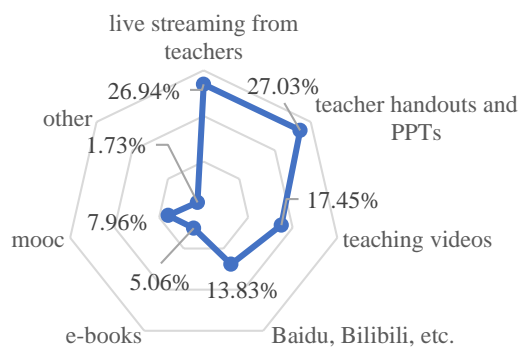


Figure 3: Acquisition of online teaching resources

This shows that students still favor using traditional technologies like teacher explanations, classroom handouts, and slides to access educational content, even while learning online or doing self-study at home. Major websites and learning platforms have also grown in importance as a result of the expansion of online education as essential sources for students to acquire educational materials.

### 3.2.4. Online Teaching Interaction

Online teaching does not allow for face-to-face interaction between teachers and students, but the rich and varied forms of online interaction can make up for this shortcoming. Correct interactive techniques can also increase the effectiveness of classroom instruction. When given the choice of teaching interaction methods, 28.20% of students chose to ask questions in class (via video language connection, shared screen, or live message), 27.04% selected online group chats or learning platforms, 21.8% requested teacher feedback on their questions, and 22.11% received homework or thinking exercises after class. As shown in Figure 4.

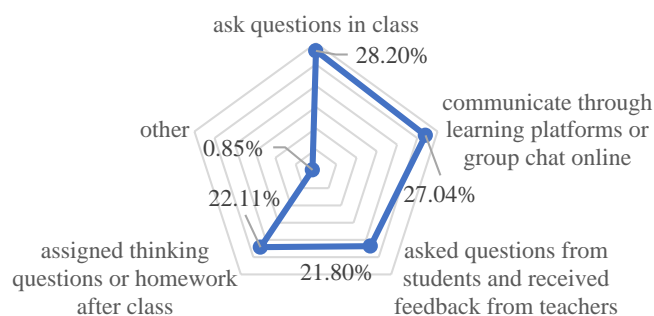


Figure 4: Online Teaching Interaction

It is convenient for teachers to respond to questions in class due to the real-time nature of these interactive methods, which boosts students' interest in class and helps to increase learning effectiveness<sup>[8]</sup>. Therefore, some students prefer to communicate online through learning platforms and group chats, while more students prefer to interact through classroom questioning (video connections, real-time messages, etc.). This interactive teaching style encourages after-class interaction between students and teachers. Students can use the communication platform to not only ask questions, but also to clarify things for other students who might be puzzled. This lightens the load on teachers while improving class interaction.

### 3.2.5. Assessment of Homework after Class

The main way for teachers to understand students' classroom learning situation is to check their homework<sup>[9]</sup>. According to feedback from students on online teaching assignments, 89.53% of students think that teachers can quickly correct every assignment; 18.46% think that teachers only occasionally correct; and only a few think that teachers never correct homework. The interaction between teachers and students in a classroom is weakened by online instruction, making it challenging for teachers to assess how well their students state in class. However, the completion and accuracy of homework assignments after class can indirectly indicate how well students learn and serve as a reference for instructors<sup>[10]</sup>.

## 3.3. Satisfaction with Online Teaching

### 3.3.1. Satisfaction with Online Teaching Effect

The survey's findings show that 32.78% of students think studying online makes them more lazy and that 45.18% of students think online learning is less effective than offline learning. This is mainly because of things like students' poor self-control while learning online, a lack of teacher communication, and their inability to focus during home classes. As shown in Figure 5.

### 3.3.2. Satisfaction with Online Teaching Organization of Teachers

This article investigates students' satisfaction with teachers' online teaching organization from two dimensions. The first dimension is satisfaction with online learning resources. According to the survey findings, the three most well-liked online learning resources among students are classroom live streaming, push resource on-demand learning, online video teaching, and teacher in-person Q&A. When asked which online learning resources they found most satisfying, students selected online

video teaching 42.98%, classroom live streaming 41.6%, and push resources and on-demand learning 38.2%. Another dimension is students' satisfaction with the interaction in online teaching. According to the research results, classroom questioning, online communication through learning platforms, receiving teacher feedback, and assigning homework after class are all effective interactive methods. When asked about the most satisfactory interaction method, 39.2% of students choose to use classroom questioning (video language connection/shared screen/real-time message), 41.05% of students choose to communicate online through learning platforms or group chats, and 40.5% of students choose to set thinking questions or homework after class.

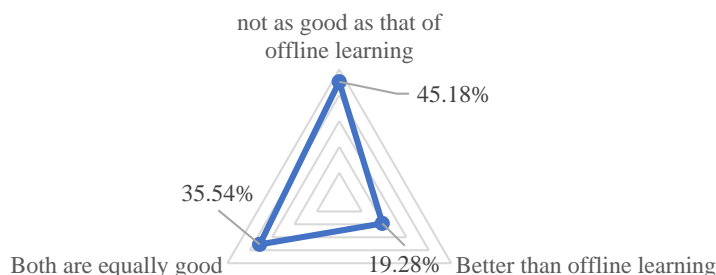


Figure 5: Satisfaction with online interaction effects

### 3.3.3. Online Teaching Platform Satisfaction

According to the survey findings, 21.73% of students are extremely satisfied, 49.23% are satisfied, and 21.49% believe the teaching platform is average. The platform's course resources, according to 26.17% of students, are average and still need improvement. The majority of students, according to the survey, anticipate platforms like Tencent Conference adding playback capabilities to their live broadcasts. The specific situation is shown in Table 1.

Table 1: Statistics of college students' satisfaction with online teaching during the epidemic period

subject	Very satisfied	satisfied	commonly	dissatisfied	Extremely dissatisfied
Satisfaction with their performance in class	5.1%	33.06%	34.16%	25.23%	2.45%
Satisfaction with teachers' teaching level	44.08%	43.8%	11.57%	0.55%	0%
Satisfaction with teaching platform	28.73%	49.23%	21.49%	0.55%	0%

### 3.4. Factors influencing Online Teaching Satisfaction

When investigating what factors can affect the effectiveness of online learning, students believe that self-directed learning ability and good online learning habits are the two most important factors. Independent learning skills are important, according to 52.07% of students, while good online learning habits (like punctuality and self-discipline) are important to 51.52% of students. According to the research findings, most students think that their own factors are what have the biggest impact on how effective online learning is. This is due to the fact that when students study online at home without a teacher present, the teacher's authority is diminished. Additionally, because studying at home is frequently simpler, students are more likely to get sidetracked and lazy, which can also negatively affect their ability to learn. Furthermore, 47.11% of students think that the functionality

and enjoyment of the teaching platform are very significant, and 47.66% think that the fun of the teaching material and the teacher's teaching style are both extremely important.(in Table 2)

Table 2: Main factors affecting online teaching effect

Topic Options	very important	important	commonly	unimportant	very unimportant
Students' autonomous learning ability	52.07%	39.67%	7.71%	0%	0.55%
Good online learning behavior habits (such as attending classes on time and learning self-discipline)	51.52%	39.12%	8.82%	0%	0.55%
Teacher's attitude towards teaching and teaching strategies	47.66%	42.98%	8.82%	0%	0.55%
Positive interaction between teachers and students	42.15%	43.8%	12.4%	0.83%	0.83%
The fun of teaching content	47.66%	40.5%	11.29%	0%	0.55%
Teaching platform function and stability	47.11%	41.87%	10.19%	0.28%	0.55%
Network speed and smoothness	46.28%	42.98%	9.92%	0.28%	0.55%
Choose content suitable for online teaching courses	46.01%	42.42%	10.74%	0.28%	0.55%

## 4. Analysis of Issues Reflected in the Survey Results

### 4.1. Poor Self-control Awareness

Generally speaking, online learning places higher demands on students' awareness of self-directed learning. The survey indicates that students think their capacity for independent learning is the most important factor influencing the success of online education<sup>[11]</sup>. However, students typically have poor self-control and weak independent learning skills, which can result in poor online learning performance. This is mainly because in traditional offline learning, most students have become accustomed to being supervised by teachers, parents, etc., which suppresses their independent learning ability. Therefore, their learning awareness will decline when they study online without the guidance of a teacher. Furthermore, when students study alone at home, the environment cannot support learning in the same way as it can in a classroom, and there is more environmental interference there, making them more vulnerable to adverse effects from the neighborhood.

### 4.2. Poor Communication and Interaction between Teachers and Students

In traditional offline teaching, teachers and students have become accustomed to face-to-face communication, which is not only beneficial for students to ask questions on the spot, but also for teachers to propose solutions in a timely manner<sup>[12]</sup>. However, it is unavoidable that online instruction has the drawback of little interaction. It is challenging for students to focus on listening without the guidance of a teacher, and the online comments made by students through the screen are frequently the result of following the trend. When teaching online, teachers and students can only communicate by sending text or voice messages across the screen. As a result, teachers cannot quickly comprehend their classroom environment or receive feedback from the majority of students. Additionally, problems like network and platform lag frequently have an impact on online communication, which may result in low communication efficiency and have a detrimental effect on students' motivation to attend classes. Last but not least, uncontrollable elements like students' lack of focus and distractions frequently result in high communication time costs and a decline in the quality of online learning.



### **4.3. Incomplete Teaching Platform Functions**

Chinese universities have been forced to switch from in-person instruction to online instruction due to the severity of the epidemic<sup>[13]</sup>. Teaching platforms provide convenience for the implementation of online teaching, enrich the means of online teaching, enhance the effectiveness of online teaching, and take this opportunity to flourish. But as online education develops, the drawbacks of teaching platforms are gradually coming to light. Firstly, online teaching platforms blindly pursue functional diversity, which makes operations complex and time-consuming, making it inconvenient for teachers and students to use. Secondly, due to network congestion and platform lag brought on by the increase in online learning scale and user population, teachers' and students' enthusiasm for the class has decreased. Thirdly, switching platforms is difficult and it is impossible to share teaching resources across the main online teaching platforms. However, if curriculum resources must be rebuilt, teachers' workloads will increase<sup>[14]</sup>. Fourthly, the teaching platform has real-time playback capabilities and a wealth of teaching resources, which may help students lax while listening to live classes. This is due to the fact that students find it challenging to focus in class because they think they can still watch videos and replays after class.

## **5. Conclusions and Recommendations**

### **5.1. Conclusions**

Based on the actual operation of online teaching in research schools, this paper investigates and analyzes the satisfaction and influencing factors of online teaching in local undergraduate universities from three aspects: personal basic information, basic situation of online teaching, satisfaction with online teaching, and its influencing factors. The survey results indicate that 87.88% of students have a positive opinion of online instruction, and 82.09% of students are hopeful about its future development, despite the fact that there are still some problems with online teaching. Online instruction is thus still a crucial teaching form in the dire situation caused by the epidemic. Students have acknowledged that it not only satisfies their fundamental educational needs but also generally runs smoothly.

### **5.2. Recommendations**

#### **5.2.1. Improve Self-learning Ability**

Online learning offers more freedom to participate in the learning process than traditional classroom settings, and it also requires students to actively participate in network-related activities, be willing and able to self-manage the learning process. Students' self-management and supervised learning are therefore crucial to the online education process. Although various factors can affect the effectiveness of online learning, students themselves are still an important starting point for improving learning efficiency. Therefore, it is advised that students enhance their professional literacy throughout the entire epidemic period and develop their capacity for self-learning, self-control, and full utilization of the resources of the domestic online teaching platforms.

#### **5.2.2. Improve the Effectiveness of Classroom Interaction**

The boundaries of traditional classroom time and place have been breached by online learning. Professors have transformed from facing passionate pupils to chilly screens in the class. Due to the fact that teachers and students are not in the same space, many interactive methods and techniques are not as effective. Due to further restrictions, students might also be unable to contact teachers in a timely manner. Additionally, unlike in conventional classroom settings, teachers are unable to modify their lesson plans through language and eye contact with students. In order to help students learn, it



is crucial that teachers adapt traditional teaching methods, constantly learn and develop their online teaching techniques, allot adequate time for instruction, classroom discussions, and teacher-student interaction, and improve their professional skills. Besides, teachers must learn to modify their instructional methods more in order to engage students and increase classroom efficiency.

### 5.3.3. Improve the Functions of the Teaching Platform

Online education platforms, as an important teaching medium, have become an important component of online teaching. The combination of online and offline technologies will change how university education is delivered in the post-pandemic era, increasing the demand for online education platforms. As a result, the platform should take proactive measures to address the flaws in the online education process, such as streamlining operational processes, improving platform functionality, and minimizing congestion-related lag. The platform should simultaneously adopt technological innovation and create more useful teaching service methods by taking into account the feedback from students. In addition, most platforms can also try resource sharing and win-win collaboration while serving users.

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