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Research on the Strategy for Improving the Quality of Online Foreign Language Teaching in Colleges and Universities in the Era of Big Data

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Abstract: *The "Suspending Classes Without Stopping Learning" in the context of the COVID-19 outbreak has promoted the rapid development of online teaching. However, many problems have emerged in the process of implementing online teaching. As a foreign language is an applied subject, online teaching is widely used, and the dilemmas and problems it faces are more prominent. In this paper, we try to analyze the current problems of foreign language online teaching in colleges and universities from three aspects: education management, teachers and students, and give specific suggestions for improvement, in order to provide reference and guidance for the development of online teaching in the future.*

Keywords: *Colleges and universities; Online teaching; Teaching quality; Foreign languages*

Introduction

As early as 2018, the Action Plan for Education Informatization 2.0 released by the Ministry of Education clearly pointed out that online smart classrooms and laboratories should be built to develop the service model of "platform + education", form an intelligent learning system, and promote the deep integration of information technology into the process of education and teaching. However, the integration of "online learning" and "e-learning" in different sections of the curriculum and the degree of concern has always been quite different. During the pneumonia epidemic, in order to achieve "suspending classes without stopping learning", all kinds of schools in China carried out unprecedented large-scale online teaching practice in various subjects. This is not only a litmus test for the level of online education in China's universities, but also a booster for the rapid development of online teaching in universities. Whether willingly or not, the need for education has momentarily pushed online teaching in front of the eyes of educational management, teachers, and students. During the epidemic, most colleges and universities launched online teaching and learning, but what is the current state of implementation of online teaching and learning? What were the dilemmas faced by education management, teachers, and students? And in the post-epidemic era when the epidemic is gradually stabilizing, online teaching will also be one of the important directions of education reform in colleges and universities, and it is worth thinking and discussing how to organize effective online teaching and ensure the quality of online teaching in the future. Foreign language as an applied subject, online teaching is even more widely used, and the dilemmas and problems faced in it are more prominent. Therefore, this study will sort out and summarize the dilemmas and problems encountered in the process of online foreign language teaching in colleges and universities during the epidemic from three levels: educational management, teachers

and students, discuss specific improvement measures, and build a complete and scientific and reasonable quality assurance system for online foreign language teaching in colleges and universities, hoping to provide some reference and guidance for the implementation of high-quality online teaching in the future.

Analysis of the Current Problems of Online Teaching of Foreign Languages in Colleges and Universities

Education Management

During the epidemic, the management of each university made emergency plans quickly, set up a leading group for online teaching, formulated online teaching plans, fully deployed, insisted on "one school one strategy, one lesson one strategy", and made efforts to ensure normal education and teaching order according to local, school and student conditions, but most of them lacked a proper understanding of online teaching. In particular, the leadership, which is accustomed to the overall management and organizational mechanism of the traditional education model, still follows the practice of on-campus teaching in its management and quality monitoring ideas for online teaching. This is mainly reflected in the following aspects.

1. insufficient support for teachers' online equipment. Many universities do not provide teachers with recording sites and necessary online teaching aids. Teachers who are accustomed to traditional offline teaching and lack experience in online teaching are very troubled and stressed by the lack of network equipment at the early stage of online teaching.

2. Lack of management of online classroom teaching. Most education management still follows the management and quality monitoring of classroom teaching under the traditional offline teaching model. Concerning the traditional classroom teaching management methods, there is insufficient inspection and supervision of online teaching and no timely use of platform data to form a quality monitoring and feedback system to assess the quality of online teaching, resulting in a situation where the quality of online teaching is worrying.

3. There is a lack of recognition of teachers' online teaching efforts and insufficient attention to motivating teachers to teach online. Research studies show that teachers need to invest a lot of time and effort in the initial stages of designing, developing and conducting online courses. However, the education management has neglected this point and has not issued timely policies to give teachers adequate support and recognition for their efforts in online teaching, which tends to affect teachers' motivation to carry out online teaching.

4. The evaluation of students' online learning still mostly serves as a summative assessment and lacks an appropriate evaluation system to motivate students to learn online. As a result, students perceive online learning as a passive act of necessity that increases their academic burden.

5. Universities do not pay enough attention to the cybersecurity issues that occur in conjunction with online teaching. The issue of cybersecurity should be a top priority. In addition to university teachers and students, operators of network communication platforms and Internet education companies are also involved in large-

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scale online teaching. Therefore, the education management should establish a mechanism for access to platform services, as well as strengthen the awareness of teachers and students about cyber security crimes. And many university management fails to do so.

Teachers

1. The uneven information literacy of teachers and their low level of information technology teaching ability and application are important factors that directly affect the effectiveness of online teaching and students' online learning experience. Although some teachers have accumulated an amount of information technology teaching and are familiar with the corresponding application software, such large-scale and established online teaching during the epidemic is a relatively new and unfamiliar thing to the majority of teachers, especially older teachers or teachers in colleges and universities in less developed areas, and is a great challenge. In the early stage of online teaching, most teachers are at a loss, in a hurry, and under great pressure. Even after preliminary exploration, there is still a certain gap between online teaching and traditional offline classroom teaching. The survey shows that 19.9% of teachers "do not understand the online teaching process and overwhelmed", 30.0% "are not proficient in the application of online software", 31.03% reflect the difficulty in their ability to operate the platform and tools, and 28.82% said that the platforms and tools are more complicated to use. Therefore, it is necessary to improve teachers' information literacy and IT teaching skills as well as the level of web software application.

2. The temporal and spatial separation created by online teaching blocks interaction between teachers and students, resulting in limited teacher-student interaction. Many online teaching is still the traditional teacher teaching and student listening, which is just like moving the offline 'cramming education' to the online. The essence of 'teaching-centered' has not changed, and effective teaching and learning cannot take place, and the teaching effect is worrying.

3. Teachers are unable to know students' learning status, supervise students, provide timely feedback on teaching progress, and thus are unable to accurately analyze the learning situation, causing difficulties in the organization and management of teaching, which is a common problem faced by teachers in online teaching.

Students

1. Students are unable to study independently and learn poorly. The survey data shows that 48.5% of students say that they are easily distracted during online learning, 44.3% of students feel that they cannot ask questions to the teacher at any time, 39.6% of students think that online learning lacks supervision and is inefficient, and that 32.3% of students face problems of network lag and discontinuous listening, and 45.6% of students experience long hours of studying in front of a screen leading to visual fatigue. These phenomena are particularly serious in the early stages of online education.

2. The current online learning leads to the loss of student agency and students remain passive recipients of knowledge. Moreover, the temporal and spatial separation of online learning leads to the absence of a learning community. Students are less trained in independent learning and self-management skills in the

traditional education system, and their independent learning process cannot be achieved without proper supervision and guidance from other learning assistants. Without the supervision and guidance of teachers and other facilitators, the effectiveness of students' online learning is questionable.

3. The survey shows that some students think that some courses and learning resources available online are not suitable for them, either too profound or too simple. And the possibility of independent learning is undoubtedly low when students cannot monitor their learning status, which will seriously reduce the learning effect. In addition, most universities require the introduction of course videos, and the requirements must be national online courses and undergraduate courses, which is a typical one-size-fits-all phenomenon.

Insights and Recommendations

Education Management

1. Strengthen the school education management's correct understanding of online teaching, make top-level design and guide the development of teaching practice scientifically and reasonably. It is necessary to organize training related to the principles of online teaching and quality monitoring for school education management to strengthen their understanding of the principles of online teaching and quality monitoring. Thus, the top-level design can be done at the organizational level, infrastructure level, and teaching level to fully support and guide the orderly, efficient, and safe development of online teaching.

2. Establish the teaching quality monitoring and assessment mechanism of online courses, and clarify the task requirements, assessment indexes, assessment standards, assessment methods, rewards and punishments for online teaching. First of all, the teaching quality monitoring and guaranteeing culture of online courses should be strengthened. Colleges and universities can continuously strengthen the awareness and responsibility of the teaching quality and learning quality of the course construction team and students through the form of all teachers' and students' conferences and symposiums, or through the management department's regular release of online teaching inspection bulletins and students' learning situation analysis reports, so as to form an atmosphere of online teaching quality monitoring and guarantee of the school. Secondly, establish an online teaching quality monitoring and guarantee institution. It is suggested to set up an online teaching quality assurance committee and work together with personnel from relevant departments to complete the task of monitoring and guaranteeing the quality of online courses. It is possible to establish a five-level course quality monitoring and guaranteeing institution system of the school (the main leader in charge of teaching) – council (online course quality guarantee committee) – department (the department where the online course is located) – group (online course construction team) – study (online course learners) in the university to guarantee the teaching quality of the course. After that, improve the online teaching quality monitoring and guarantee system. Establish the teaching quality evaluation system, online teaching inspection system, online teaching information feedback system, online open course teacher training system, etc. Finally, establish the foreign language online teaching quality evaluation system. Improve the evaluation index of teaching quality and scientifically evaluate teaching quality and teaching effect, so as to effectively improve teaching quality, and form a continuous quality improvement cycle system of "evaluation – feedback – improvement – re-evaluation".

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3. Schools should introduce appropriate policies to recognize teachers' efforts and give them full support, develop methods for calculating online teaching workload, and explore scientific, reasonable and diversified evaluation methods. Teachers who have outstanding results in online teaching should be rewarded in terms of lesson time allowance, or evaluation and merit, so as to fully motivate teachers to carry out online online teaching. Encourage and stimulate teachers to create high-quality online teaching, rather than simply moving offline classes online.

4. Formulate the management method of online course credit recognition and conversion or the method of online course credit recognition, so as to lay the institutional foundation for regular online teaching in the post-epidemic era. And the approach should focus on process evaluation, paying attention to students' online interaction, study habits, etc. Students' online learning performance can be incorporated into their usual grades, and online learning performance can include online interaction, catechism learning, online homework, online tests, participation in discussions, etc., so as to expand students' learning options, mobilize their motivation for online learning and improve the quality of online learning.

5. Schools should strengthen cybersecurity education for teachers and students, enhance cybersecurity awareness and develop cybersecurity solutions. Remind teachers and students to remember their real names while teaching and learning online, add friends carefully, back up data in time, etc. We should establish a platform service access mechanism and screen high-quality platforms suitable for teaching and learning in our school. And timely communication with the online education and teaching platform, requesting appropriate optimization of platform construction and design, adding functions that can assist teachers in managing the classroom, improving the timeliness of communication, so that students can get timely feedback on the difficulties they encounter in learning, ensuring that students' attention to classroom content does not decline, and teachers can also get timely access to students' learning and take measures to manage it.

Teachers

1. Teachers should further improve their information-based teaching skills and application level by participating in planned, purposeful and selective training for corresponding enhancement through public lectures, training and resources provided by various departments, enterprises, training institutions and online education platforms. Teachers should also participate in various forms of teaching and research activities through teaching communities to optimize online teaching design, enhance their own professionalism, and actively apply the skills they have learned to actual teaching. Only through teachers' personal practice can they feel first-hand the facilitating effect of information technology on teaching and learning, and thus enhance their own acceptance and willingness to use information technology.

2. It is necessary for teachers to explore the basic conditions under which online learning occurs, to organize quality content in a rational manner, and to commit themselves to organizing effective online instruction to facilitate learning to occur. Online teaching is not a mechanical delivery of content. It is crucial to effectively integrate the teacher's well-designed, multimedia-presented learning content with the students' learning activities. It can be said that learning activities are a bridge to reintegrate teaching and learning in a state of temporal and spatial separation. Therefore, to improve the pedagogical quality of online teaching and learning and to ensure that effective learning actually occurs, teachers must focus their efforts on the design of

resource-based learning activities, designing more 'student-centered' driven tasks and enhancing interaction. Firstly, in terms of activity concept, student activities are the main focus, emphasizing the participation of all students together within the virtual learning community, with the teacher participating and leading throughout. Secondly, in terms of the activity approach, the way it is carried out should be as flexible and orderly as possible, taking into account the limitations of students in terms of time, energy, knowledge base and technology use. In addition to the tasks that must be completed in the online classroom, some flexible learning tasks can be clearly listed, allowing students to log in at any time within the specified time to learn. Fourth, in terms of interaction, students should be guided to actively participate in the seminar, and teachers should respond to questions raised by students in the first instance. Also, to facilitate communication, it can be extended to mobile clients such as QQ and WeChat to enhance the frequency of communication. Therefore, when designing learning activities, the following issues need to be noted.

(1) Different designs should be made according to the learning objectives and types of knowledge. For example, the goal of the learning is to achieve knowledge input, and in this process, teachers can help students understand by learning micro-class, reciting and writing, sharing notes, drawing concept maps and other activities; the goal of the application practice is to achieve the primary output of knowledge, and activities such as online tests, discussions and exchanges, and developing experimental solutions can be carried out to test the application of knowledge; the goal of the transfer innovation is to achieve the advanced output of knowledge, and activities such as opinion the goal of the transfer of innovation category is to achieve the advanced output of knowledge, and activities such as commenting, expressing opinions, writing expositions, giving speeches and producing works can be carried out to give students more opportunities for creative expression; the conceptual knowledge has certain abstract generalization and organization, so discussion and communication can be carried out to promote the understanding of knowledge; the strategic knowledge focuses on students learning to learn, and activities such as journal writing, opinion sharing and learning reflection are recommended.

(2) Design blended learning activities that combine online and offline. Online learning does not mean that all learning activities take place on the Internet, and multiple learning forms can be designed online and offline, not limited to learning activities in traditional classrooms, and online and offline activities complement and promote each other. For example, online microlearning, offline hands-on practice, online discussion and exchange, offline summary and reflection, etc. Online activities should not be set too much to ensure that students have enough time for offline practice and learning reflection.

(3) The learning platform should be selected flexibly according to the needs of the activity, the type of curriculum and the characteristics of the learning platform. The learning platform serves as a carrier for the activities, and only by choosing the right platform can learning activities be carried out effectively. Different platforms have their own strengths and weaknesses. When choosing a learning platform, try to choose a platform with a strong collection of functions that can support multiple types of learning activities to avoid teachers and students jumping around multiple platforms and increasing the burden of teaching and learning. Try to use the same learning platform for the same type of learning activities, and different types of activities can be scattered in different platforms. For experimental courses, the virtual simulation experimental teaching platform can be fully applied to effectively organize online virtual simulation experiments for students of relevant majors; for graduation class students, it can be arranged that instructors can supervise students

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through online guidance and urge them to complete their graduation thesis according to the schedule.

In addition, teachers should actively participate in training courses such as "Efficient Interaction Strategies and Effectiveness of Online Teaching", "Data Analysis and Application of Students' Online Learning Behavior" and "Online Teaching Interaction Guidance" to improve their own online teaching design and innovative application skills.

3. Teachers can make use of the platform's functions such as roll-call and polling, or adopt effective teaching strategies (e.g. lively and interesting language, heuristic strategies, case study method, etc.) to enhance students' presence and engagement. And good at mining and analyzing student learning process data with the help of learning analytics. With the application of technologies such as cloud computing, facial recognition, deep learning, big data and various digital terminals in the field of education and teaching, students' learning process data can be stored in digital form, and teachers focus on analyzing these process data to get a more accurate, timely and comprehensive understanding of students. At the same time, teachers should provide learning support services, such as designating a high-performing student as an assistant to manage class group discipline, collect questions from students, and, when necessary, organize a live broadcast to focus on solving problems and answering questions, while enhancing the social presence of the learning community. It can also rely on WeChat groups and QQ groups to provide regular reminders and feedback on learning tasks and strengthen teaching guidance.

Students

1. Most importantly, students need to take their own initiative and actively participate in online teaching, which is a test of their self-management skills, and they should learn to take responsibility for their own future. Students should, first, consider online teaching as a "formal course" and mentally complete the "school ritual"; second, learn to manage and plan their study time, and regularly reflect and improve; then understand their own best learning style, learn to create a Then, learn how to learn best, learn to create a study space of your own, communicate with parents and classmates to reduce the interference of other information; best of all, pay attention to control the time of using computers and tablets, do eye exercises regularly to protect your eyesight, combine work and rest, and do some outdoor sports activities at the right time to relax your body and mind.

2. In addition to the students' own initiative, the teacher, as the strongest facilitator of the students, should play a leading role and implement the students' subjectivity. Therefore, teachers should play the role of designer, supporter, supervisor, and evaluator of learning activities. At the same time, they should focus on cultivating students' independent learning ability, guiding them to learn effectively through learning activities, and enhancing their independent learning ability. How teachers design effective learning activities has been described above, so I will not repeat it here. In addition, the online education teaching platform should take measures to properly optimize the platform construction and design, add functions that can assist teachers in managing the classroom, improve the timeliness of communication, so that students can get timely feedback on the difficulties they encounter in learning, ensure that students' attention to classroom content does not decline, and teachers can also obtain students' learning in a timely manner and take measures to manage it.

3. The Ministry of Education's guidelines clearly state that teachers may give priority to relevant and outstanding national and provincial quality open online courses, but not exclusively. Teachers should not choose online open courses based on the sole criterion of "national or provincial level", but rather on the criterion of "being able to teach the material in a lively and interesting way". If it meets the criteria of "being able to teach the material in a lively and interesting way" and meets the characteristics of our students' learning conditions, it should be introduced. Moreover, the introduced courses and the selected teaching resources must be reorganized according to the students' learning characteristics, and the content should be carefully selected so as to improve the students' independent motivation of online learning and enhance the quality of online teaching by providing guidance before the online lectures, studying during the online lectures and promoting learning after the classes.

Concluding Remarks

As an applied subject, foreign language is more widely taught online than other subjects in a variety of ways. The emergence of catechism, microlearning, online courses, etc. has made the learning environment of foreign languages more diverse. The classification of foreign language online courses has also become more refined. How to improve the quality of these foreign language online teaching is an important topic worthy of in-depth study. Epidemic-driven online teaching faces opportunities and challenges, which require joint efforts from all parties, including educational management, teachers and students, as well as continuous research and exploration by scholars.

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