



INFLUENCE OF ONLINE EDUCATION NORMALIZATION ON
TEACHING MANAGEMENT DECISION OF SECONDARY
VOCATIONAL SCHOOLS IN SHENZHEN

by

HAOBIN ZHOU

AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENT FOR THE DEGREE OF MASTER OF EDUCATION
IN EDUCATIONAL ADMINISTRATION (INTERNATIONAL PROGRAM)
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Independent Study Title Influence of Online Education Normalization on Teaching Management Decision of Secondary Vocational Schools in Shenzhen

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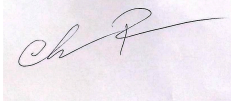
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ABSTRACT

The study finds that online teaching, as a new type of teaching tool, not only enhances secondary students' enthusiasm for learning in class, but also brings into play students' subjectivity in teaching, improves interaction between teachers and students, facilitates teachers' exploration of new teaching modes, provides timely guidance, answers, and evaluation for students in teaching activities, enhances classroom teaching efficiency and improves classroom teaching quality. It is conducive to teachers exploring new teaching modes, guiding, answering, and evaluating students in teaching activities, improving classroom teaching efficiency and enhancing classroom teaching quality. Based on the above findings, the researcher proposes recommendations in three aspects: online teaching management, teachers, and students. In terms of online teaching management: optimize the online learning environment to stimulate learners' interest in using it. In terms of teachers: first, enhance online learning support services to improve students' sense of presence; second, provide independent learning scaffolds to stimulate learning initiatives. In terms of students: enhance the sense of self-control and promote the generation of positive learning emotions.

Keywords: online education; secondary-level E-commerce; secondary-level education management

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I listened to my teacher's teachings and learnt about my knowledge and skills and how to behave. I was inspired by my teacher's admonition to keep my feet on the ground, both in my studies and in my work, and I regained my proper attitude and took my studies seriously. During my studies, I never dared to forget my teacher's teachings, overcoming my inner weakness, and taking my studies and research seriously, one step at a time. The professor's rigorous attitude, firm principles, and sincerity towards his students all deeply infected me. In the future, I will remember your teachings, keep my feet on the ground, move forward courageously and strive to become an outstanding educator.

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Chapter 1

Introduction

1.1 Statement of the research problem

1.1.1 Re-examination of online education in the context of the epidemic

At present, the world has entered a risk society where various disasters and emergency emergencies are common, and the increase in uncertainty has put the emergency response capacity of education to a new test. In the event of emergency emergencies, where offline classes are not available, online education, with its advantage of overcoming time and space limitations, has become the main way for schools to maintain teaching and learning activities, playing an important role in ensuring the continuity and stability of teaching and learning, as well as an important measure for educational emergencies. At the same time, whether the education system has a scientific, systematic and effective standing online emergency response initiative in the face of emergency emergencies also reflects the modernisation of the education governance system and capacity from one side. However, while China's online education currently plays a positive role in responding to emergency emergencies, it has also become a testing ground for its emergency response capabilities, revealing a number of problems. For example, in the face of emergencies, the daily management is completely disrupted as schools do not have corresponding emergency plans, and the conventional offline management system is unable to cope

with longer periods of online education; the overall information literacy of teachers is low, and they lack experience in online teaching and are not competent enough; students are not comfortable with the online teaching approach and have low self-motivation to learn; and so on. We need to improve our online education emergency response capacity to ensure that education and teaching can be carried out in an orderly manner under all circumstances, so as to promote the modernisation of our education governance system and governance capacity. Therefore, carrying out research and analysis on the online teaching mode of secondary school curriculum and constructing a perfect scientific and standardised online teaching mode of secondary school curriculum are conducive to the orderly development of online teaching of secondary school curriculum and the improvement of secondary school teachers' informatization skills in the future.

1.1.2 The needs of China's secondary vocational school curriculum teaching

Secondary vocational education is the education carried out at the high school education stage after students have not been promoted to high school normally after the secondary school examination. Vocational education is an important symbol to measure the degree of modernization of a country. In recent years, the state has been vigorously promoting the development of vocational education, and secondary education is receiving more and more attention. In today's highly developed information technology, promoting a high degree of integration between vocational education and information technology, and innovating teaching methods and

education models is the direction of development of secondary education.

However, the current situation of vocational education is still dominated by the traditional education concept and teaching mode, and students are generally not highly motivated and unwilling to participate in the classroom. The teachers take the form of "filling up the classroom", students cannot learn and teachers have no sense of achievement in class. Due to social prejudice and the lack of good study habits of secondary school students, most of them are weak in their study foundation and have low interest in learning.

Therefore, vocational education should first complete the transformation from "teachers teaching" to "students learning". As the organiser of the classroom and the designer of teaching activities, it is more important for teachers to help students learn how to learn, so that they can find the joy of learning and the ability to actively explore knowledge. The teacher is the organiser and designer of teaching activities. According to the law of forgetting, students will forget when they learn, but if we teach students the ability to learn in this process, not just the content of books, as the old saying goes, "It is better to teach someone to fish than to teach them to fish", teach students how to learn and let them actively participate in learning. As online teaching is a virtual classroom carried out with the help of a network platform, students can express themselves more freely in this space, interaction and communication is more free and convenient, teacher-student relationship is more equal, students' independent ability has been well played, making the traditional

teacher-centered education model to teacher-led communication, students' independent learning as the main teaching model change, realizing students' independent learning anytime, anywhere. It also enables students to choose their own learning and share high-quality resources anytime and anywhere. Online teaching is an inevitable choice for the development of education and teaching in secondary schools today. Teachers should pay more attention to online teaching, constantly improve the online teaching mode, and enhance the teaching effect.

1.1.3 The realistic need for reforming the classroom teaching mode of the course - taking e-commerce as an example

With the objective of cultivating students' vocational ability, the middle-level E-commerce course is based on empirical research and the work process of e-commerce as the main line. By dividing the basic theories and skills of e-commerce into teaching projects and allowing students to carry out learning investigations in the classroom according to the teaching tasks, the course cultivates students' rigorous and meticulous vocational attitude and cultivates students' formal e-commerce vocational ability. Compared with traditional education and modern education, online education has the characteristics of flexibility and discretion, openness and sharing, and abundant educational resources. The use of online teaching for e-commerce courses allows students to choose course resources that are more suitable for them according to their own needs and learning characteristics, thus meeting their own learning needs. Online education uses the Internet to carry out learning and education

work, the teacher becomes the guide of education, more reflecting the students' independent learning ability, truly realising the characteristics of student-centred teaching.

To meet the requirements of information-based teaching in the new era, teachers must continue to improve their own information technology teaching level and use various devices skillfully to teach and must choose the appropriate information-based teaching methods according to the different teaching contents to improve teaching efficiency and students' learning effect, and better grasp and apply their knowledge. In addition, secondary schools pay more attention to the practical development direction in cultivating talents, therefore, teachers should strengthen the cultivation of students' practical ability.

1.2 Research Objectives

Objective 1: Through the comprehensive assessment of students' online learning effects, it helps to understand students' independent learning intuitively and clearly, provide suggestions for improving the talent training mode and adjusting teaching strategies, and accumulate knowledge and experience for improving students' independent learning ability and future career development.

1.3 Research Hypothesis

Hypothesis 1: We hypothesise that students are generally receptive to the online education model for e-commerce majors in secondary education.

Hypothesis 2: We hypothesise that e-commerce majors in secondary education

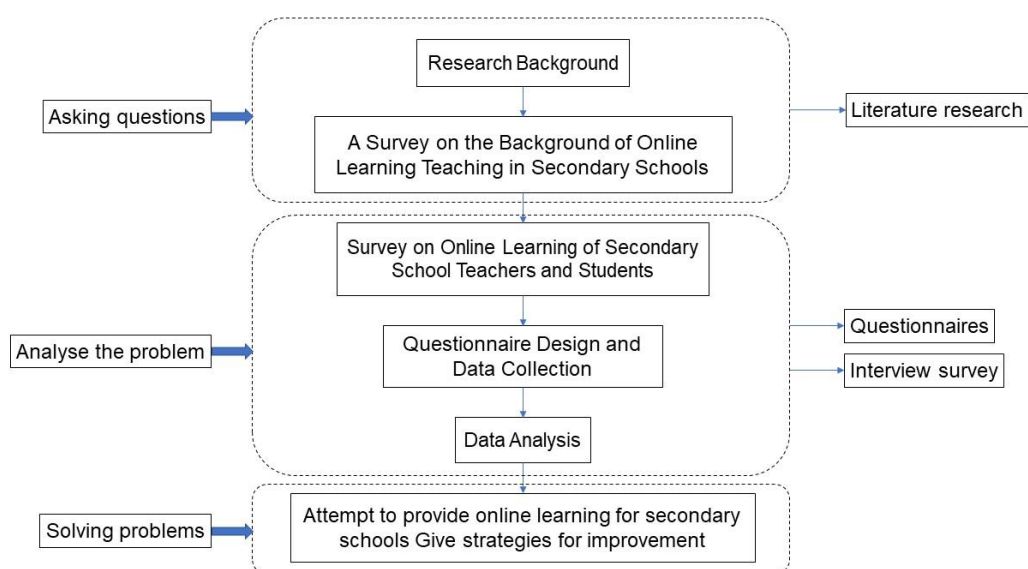
learn better and students enjoy it more than traditional classroom learning using online education methods.

Hypothesis 3: We hypothesise that the integration of the use of different online teaching tools is more efficient for the online education mode of secondary education.

1.4 Conceptual framework

1. Research ideas

The specific lines of research for this study are as follows.



2. Research Methodology

Literature analysis method

Through collecting and organizing the literature resources about "online education", "secondary e-commerce" and "secondary graphic processing teaching" in databases, special websites, digital libraries, paper books and other tools. To understand the policies and principles of teaching and learning, to analyze the

characteristics of online teaching and learning, and to provide experiences and ideas for the upcoming study on the application of e-commerce in secondary schools.

Questionnaire method

Questionnaires were distributed before and after the implementation of teaching. Before the teaching, students were surveyed to investigate their learning base, motivation and expectations, so as to adjust the teaching content and teaching methods and prepare for the next step of teaching implementation; after the teaching practice, questionnaires were distributed to students and the data were analysed to obtain an evaluation of the teaching effectiveness.

Interview method

Interviews were collected before and after the teaching practice. Before the teaching practice, interviews were conducted with experienced teachers to understand the characteristics of secondary school students, the general implementation of the secondary school E-Commerce course and the direction of improvement afterwards; after the teaching practice, semi-structured in-depth interviews were conducted with a number of students to obtain students' views on the online teaching classroom from multiple perspectives, and the questionnaire and interview data were combined and analysed to obtain a more objective student The questionnaire and interview data were combined and analysed to obtain more objective student evaluations.

1.5 Scope and limitations of the study

1. Regional scope

This study only used data from one secondary school in Shenzhen, Guangdong Province, China in terms of regional scope. Secondary teaching policies vary from country to country and region to region, but there is value in learning from each other and from the online education approach and methods.

2. Scope of the profession

In this study, the professional class of E-Commerce taught in the author's secondary school was selected as the scope of the study. The class taught by the author himself was easier for the author to obtain data and facilitate the study.

1.6 Terminology

1+X Vocational Skill Level Certificate

The academic certificate is a comprehensive reflection of the quality of talent training in school education, while the skills level certificate is a certificate of the graduates' vocational skills level, reflecting the comprehensive abilities required for vocational activities and personal career development.

The "1+X" certificate is an important educational reform and an innovation in the education system, which aims to ensure the training of talents with existing qualifications, while focusing on the enhancement of vocational skills required by the market, by enterprises and by employment.

The main body of the pilot 1+X certificate system is the institutions. The

institutions are mainly higher vocational schools, secondary vocational schools (excluding technical schools), undergraduate level vocational education pilot schools, applied undergraduate universities and national open universities. Initially, the pilot project will focus on the market demand and the enhancement of employability required by enterprises, starting with about 10 vocational skills areas, and steadily promoting the implementation of the "1+X" certificate in the above-mentioned institutions on an annual basis.

In addition to academic education, institutions are actively working on the development of vocational skills certificates in institutions and the implementation of vocational skills level assessment. Optimise the curriculum, launch targeted training, encourage pilot institutions to combine academic education and vocational training, promote the integration of learning and certification, and better deliver comprehensive academic + skills talents to society. The Certificate in Online Shop Operation and Promotion is a vocational skills level certificate required for e-commerce majors and is suitable for e-commerce majors in secondary schools.

1.7 Benefits of the study

It enriches the research on online education and online learning effect assessment. Based on the exploration of research hotspots and trends in related fields, this paper explores the fit between online learning and secondary professional education, and constructs an online learning effect assessment system that meets the characteristics of online learning and the training requirements of secondary e-

commerce majors. Through the extraction of assessment elements and the construction of the assessment system, on the one hand, it enriches the connotation and mode of online learning effect assessment, which is of great value to improving the quality of online education and promoting the construction of e-commerce vocational education informatization; on the other hand, it aims to break the limitation of the lack of discipline-specific educational assessment, extend the assessment to the field of secondary vocational education, and establish a diversified assessment system that meets the training objectives of the profession. The link between online learning, vocational education and teaching evaluation is enhanced.

Deepening the practice and exploration of online learning effect assessment. On the one hand, it helps to find out whether online learning is beneficial to the professional development of secondary school students, whether it can be integrated into vocational education teaching, and whether it can promote students' continuous development, so as to help the construction of online resources and teaching informatization in secondary school. On the other hand, through the comprehensive evaluation of students' online learning effect, it helps to understand students' independent learning situation visually and clearly, providing suggestions for improving talent training mode and adjusting teaching strategies, and accumulating knowledge and experience for improving students' independent learning ability and future career development.

Chapter 2

Theoretical and Literature Review

2.1 Concepts and theories

In the context of information technology, online teaching with the help of the Internet has become the focus of current research. Through WeChat and online schools, online text communication, transmission of documents and pictures, video and voice communication, and integration of materials have been realised, making the classroom teaching mode break through the limitations of time and space. However, the process of online education is constrained by a variety of factors, resulting in poor online education results. Therefore, the only way to give full play to the value of online education is to continuously improve the quality of online education managers.

2.1.1 Analysis of the current situation of online education management.

Although online education has grown by leaps and bounds in secondary schools, there are still a number of problems that are difficult to overcome. The main reason for this situation is online education management, specifically in the following areas. Firstly, there is a lack of funding for online education management. Under the online education model, schools have to build their own online teaching platform based on the characteristics of online education, but ordinary junior secondary schools do not have the technical capacity to do so, and basically use the funding

method to let the technology provider tailor the online teaching platform for the school. In this case, even if the school has an online teaching platform, it still needs the relevant hardware environment and software environment to support it, but some junior secondary schools are still facing financial difficulties. In addition, after the online platform supporting online education is put into use, it is still necessary to launch training for the relevant teaching staff, and the current funding is difficult to meet this need. Secondly, not enough attention has been paid to it. Currently, most junior schools have introduced online education models and even online education platforms. However, schools do not attach importance to online education management and still manage in the traditional way, making it difficult to achieve the effectiveness of online education management. Thirdly, the number of managers is insufficient and the online managers themselves are not experienced enough. At present, most junior schools do not have a full-time online education manager, but rather a certain number of staff from the school to manage them. The managers of these online education platforms are not trained in the relevant technologies and lack basic experience in managing online education. These problems affect the effectiveness of online education management to a certain extent and make it difficult to achieve good results in online education management. Fourthly, online teaching managers have weak information technology skills. The information literacy of online teaching staff is particularly important and directly determines the quality of online teaching management. However, the survey shows that the information

literacy of online teaching managers is still weak. Some managers are not even familiar with teaching tools and related teaching software, and many online teaching managers do not have the ability to manage online teaching.

2.1.2 Analysis of strategies and ways to optimise the quality of online education managers

Under the new situation, online education has gradually entered the classroom and has become a modern education tool. In order to give better play to the value of online teaching, it is necessary to strengthen the quality of online education managers from the following aspects, based on the current situation of online education management.

Increase investment in information software. Some junior secondary schools often equate information technology with computer rooms, computers and electronic whiteboards in the process of carrying out information-based teaching, and these modern information devices are simply too difficult to meet the current needs of online education. Therefore, in the process of strengthening the management of online education, it is necessary to increase the investment in information software, constantly enhance the importance of modern information technology, and increase the relevant funds to combine the actual situation of education in junior colleges and universities, and scientifically design online teaching platforms that are compatible with them. In addition, the actual situation of the school can be analysed with other schools to share excellent courses and high-quality courseware, so that online

teaching can be carried out better.

The ability to analyse the students' situation is essential to the effectiveness of online management in an online education model. Specifically, junior high school online education managers should analyse students' characteristics, including their gender, age, motivation and learning ability, and design the online teaching platform according to their actual situation. In addition, as students at junior secondary level are already familiar with the Internet, teachers should enhance the online teaching platform with the primary objective of stimulating students' interest and ultimately bringing the value of online education into play.

Firstly, in order to strengthen online teaching management, junior high schools must set up a teaching leadership team, which is responsible for online teaching management. Specifically, online teaching management can be undertaken by the year's teaching director, subject team leader and classroom teacher, and by the year's political director and classroom teacher. By giving equal importance to both lines and assuming their respective responsibilities, the effect of online teaching management in junior high schools can be continuously improved. In addition, junior high schools should develop specific online teaching management plans before carrying out online teaching work to ensure that online teaching in schools can be carried out in a stable, orderly and effective manner. For this, junior secondary schools should not only develop an online teaching curriculum, but also make the relevant work and rest time arrangements, and standardise the teaching time and assignment submission time for

each subject. In addition, middle school online education administrators should be aware of their responsibilities and make flexible use of certain online service platforms to push out content related to online teaching and make it clear to the followers, laying a solid foundation for strengthening online teaching.

Strengthen online teaching technology training and enhance the information literacy of staff In order to ensure the smooth development of online teaching in junior high schools, it is necessary to cultivate the information literacy of relevant managers, which ultimately leads to better service for online teaching management. Firstly, based on the characteristics of online teaching, junior secondary schools should join hands with the school's network technology department to provide information technology training to relevant staff and continuously improve the information literacy of teaching managers so that they can flexibly use the network platform to carry out teaching activities in their daily online teaching management. It should be noted that in the online teaching management mode, junior secondary school teachers should adhere to the principle of gradual progress in the process of providing information training to teaching managers, and constantly raise relevant design problems, and in the process of solving them, promote the improvement of the online teaching platform. Secondly, an online teaching technology guarantee group should be set up, mainly responsible for the technical equipment guarantee of online teaching. At the same time, it should also actively provide relevant online teaching equipment to ensure the smooth development of online teaching.

Standardize online teaching behavior and improve online teaching effect In view of the problems existing in online teaching in junior high school, when strengthening the effect of online teaching, the behavior of online teaching must be standardized, so as to ultimately improve the quality of online teaching. Firstly, it is important to develop a "Code of Practice for Online Teaching and Tutoring" to make clear requirements and specifications for the management behaviour of online teaching managers, to identify problems in online teaching in a timely manner, and to propose targeted regulatory measures accordingly to ensure that online teaching is carried out in an orderly manner. Secondly, teaching managers should also join the relevant online platforms of their disciplines, so that they can sink to the front line of their disciplines and better understand the specifics of the online work of subject groups and teachers. Finally, online open classes are vigorously promoted, and teachers of all disciplines build a platform for online teaching exchanges, thus prompting relevant teachers to summarise, exchange and learn from each other's experience in online teaching in the process of open classes and evaluation activities, and ultimately to better carry out online teaching.

In order to improve the effect of online teaching management, managers must refine and divide the management work, and adopt specific measures to continuously improve the effect of online teaching management. Firstly, in the specific online teaching management mode, the relevant managers must ensure that their mobile phones are kept on, that the school network is kept open, that they can pay attention

to the messages on QQ and nail groups in a timely manner, and that they can respond to relevant messages in a timely manner, so as to really improve the timeliness of online teaching work. Secondly, in the process of strengthening online teaching management, the online teaching management team must also hold online video conferences on a regular and irregular basis to discuss the problems that exist in online teaching throughout the year, and accordingly propose problems and work out specific solutions to constantly improve the effectiveness of online teaching. Once again, we actively set up QQ groups and pinned groups, and hold regular online video class meetings and parent meetings to understand students' thoughts and problems in learning, and accordingly carry out relevant ideological education and online learning guidance, and provide summaries and feedback on students' online learning and homework completion. At the same time, in the process of managing online teaching, parents should also be trained to actively participate in online teaching, and to supervise students in their daily studies and cooperate with the school to complete the requirements of online teaching. Finally, the online teaching management team should also actively convene meetings with all class teachers to provide guidance and requirements for online teaching management and to continuously improve the effectiveness of online teaching management.

Do a good job of asking questions and supervising the online service management platform Under the online teaching mode, in order to improve the effect of online teaching management, an opinion box should be established on the

online service platform, where teachers can express the problems and relevant suggestions in online teaching. With the help of this, online teaching managers can keep abreast of teachers' problems in online teaching, as well as related solutions and opinions. The manager can then research these ideas and solutions and publish them regularly, so that teachers feel that online teaching management is truly effective and take action, ultimately enhancing the effectiveness of online teaching management. In addition, the communication between online teaching managers and students' parents should be strengthened comprehensively, and parents of students should be led to actively participate in the evaluation of online teaching by means of questionnaires, so as to guarantee the smooth implementation of online teaching in the end. In conclusion, under the background of information technology, online teaching, as a new classroom teaching mode, has completely broken the time and space restrictions under the traditional teaching mode and significantly improved the effect of classroom teaching. Based on the current problems in online teaching management at the junior high school level, we should take active and effective measures to continuously improve the effectiveness of online teaching management and ensure that online teaching is carried out better.

2.2 Literature review

The outbreak of the Newcastle Pneumonia epidemic forced a shift in conventional education and teaching activities from traditional classroom delivery to online teaching and learning during the epidemic. The change in the teaching and

learning environment has had a significant impact on teaching managers, implementers and investors in teaching and learning. Full home learning online learning has stimulated enthusiasm for online education research, with the most attention being paid to the issue of online teaching quality. Using online teaching in Shenzhen Open Vocational and Technical College as a research case, we study online teaching in higher education institutions during the epidemic and explore the path to improve the quality of online teaching from the stakeholders' perspective.

In the spring of 2020, the whole country responded to the call for home quarantine to overcome the epidemic. The State Council issued an announcement to delay the start of the spring school year; the Ministry of Education was the first to issue an initiative to use online platforms to "suspend classes without stopping school"; and educational administrative departments in all provinces, municipalities and autonomous regions quickly issued guidelines for online teaching and called on schools of all levels to carry out educational and teaching activities according to their actual situation. During the epidemic emergency, home isolation was the best way to combat the epidemic, and relying on the Internet to carry out online teaching was undoubtedly the best option to meet the needs of epidemic prevention and control and to meet the needs of education and teaching at that time. Therefore, schools quickly responded to the state's call to urgently develop online teaching programmes, build online teaching platforms, set up teaching resource libraries, construct online teaching courses and train information-based teaching teachers. Online education

platforms have increased their online teaching resources and online education has seen an unprecedented period of growth.

During the epidemic, online education and teaching activities made a huge contribution to meeting the needs of students learning at home, while also posing a huge challenge to education and teaching management. Online education is a cross-border integration of the Internet + education, which has had a systemic impact on the mainstream business of education, including the teaching and learning environment, curriculum, teaching activities, learning, assessment, management, teacher development and learning organisation. While the epidemic has given rise to the development of online teaching, online education has blocked the social interaction between teachers and students. And the essence of education is teaching and learning, which requires interaction between teaching and learning. While many people are enjoying the convenience of online teaching, they are also concerned about the problems that online teaching may bring, with quality control being one of the most important concerns.

During the epidemic, a variety of online teaching policies and teaching resources were in place to ensure that students were able to 'learn', but as online teaching was being developed, a number of issues came to the fore: online teaching was riddled with problems, inefficiencies, and teacher-student interaction was not guaranteed. On the basis of "access to learning", it is worth considering how to make students "learn well". During the epidemic, classroom teaching has changed to online

learning at home, face-to-face teaching has changed to online teaching, and the functions of parents and the education sector have also changed to some extent. To ensure the quality of teaching - learning, teachers, parents, students and education authorities must collaborate with each other.

Compared to traditional forms of education and teaching, online education is not only a change in teaching format and education and teaching scenario, many factors can affect the quality of online teaching and learning, such as teacher-student interaction, educational environment, and subjective and objective behaviours in education and teaching activities. The Newcastle pneumonia epidemic resulted in the first large-scale online education, and much of it was learned in the process of mapping. The online learning organised by schools during the epidemic is still a teacher-led form of teaching and learning, which requires a high level of information technology teaching skills from teachers. Some teachers were not receptive or willing to accept this "one-size-fits-all" model of teaching all courses online due to inadequate preparation. Most students and parents lack the experience of online learning and have little experience of learning online 24/7 for long periods of time, and lack the self-awareness and initiative to learn online. All these will affect the quality of teaching and learning. Based on years of practical experience in information-based teaching competitions, Shenzhen Open Vocational College has continuously revised its teaching work plan during the epidemic according to the reality of epidemic prevention and control, and has conducted theoretical exploration and practical

innovation on online teaching work.

During the epidemic, Shenzhen Open Institute of Vocational Technology has set up an epidemic prevention and control leadership group under the leadership of the party and government, with six specific working groups, according to the needs of epidemic prevention and control and the actual situation of the institute. On February 21, 2020, Shenzhen Open Vocational College issued the "Online Teaching Implementation Plan" and requested teachers to use the VET Cloud App to build the courses to be taught through QQ group, SMS and other means. At the same time, the Academic Affairs Office and the Teaching Supervision Office, together with the departments, checked the online course construction situation. According to the teaching needs, the teachers adopted VTC Cloud Classroom, Tencent Classroom, Nail, QQ Group Classroom and eLearning to teach online. After a period of exploration, teachers have basically mastered the skills of online teaching and can flexibly use various online resources to meet the basic teaching needs. Students gradually transitioned from excitement and confusion to a stable state in the new teaching mode, and the overall teaching work was smooth and stable. During this period, the college leadership and teaching management department reached out to the teaching staff and students to understand and solve specific problems in the process of information-based teaching management activities using the online teaching monitoring system. All teaching staff actively studied various information-based teaching methods, constantly adjusted and optimised the teaching platform, and

sought the best way to teach. The academic management staff and the logistic technical service staff work closely together to coordinate with the lecturers to implement the specific work arrangements for teaching. Some of the experimental and practical training courses were conducted in the form of delayed lectures and inviting enterprise instructors to participate in the lectures, so as to ensure the integrity of the teaching content as far as possible. According to statistics, Shenzhen Open Vocational and Technical College used the VET cloud platform to build more than 400 courses during the epidemic, and the online rate of courses during the semester was 100%. In terms of specific implementation, as many as 78% of teachers used two or more online teaching methods, and this proportion was as high as 95% among young and middle-aged teachers. The proportion of lectures delivered using live streaming reached 68%, with an average of no less than two interactive sessions per class using sign-in, polling, discussion and brainstorming methods. However, by the end of the first month of online teaching, teachers and students were giving feedback that the quality of online teaching was not comparable to traditional teaching methods, mainly due to poor real-time interaction and poor self-control of some students, and teachers were unable to control the entire online class.

During the epidemic, online teaching is a desperate but realistic solution. During the regular epidemic prevention and control period, online and offline teaching is advocated, so the issue of online teaching quality is inescapable and must be addressed through the joint efforts of teaching managers (education authorities and

schools, etc.), teaching implementers (teachers, especially front-line teachers), teaching investors (parents, students) and other relevant stakeholder groups.

Teaching managers: good top-level design As the decision-makers of education and teaching activities, teaching managers are at the top level of online education management and need to think systematically about education and teaching management at their level and do a good top-level design work, based on a positive response to policies related to epidemic prevention and control at higher levels. Although the full implementation of online education and teaching is necessary due to the epidemic, with the continuous development and maturity of Internet technology, Internet + education has become an inevitable trend in the future development of education. The top-level design of online education and teaching management needs to be considered in a holistic manner. Can we take this opportunity to achieve a major advancement in the college's education reform. With the resources of the vocational education cloud platform purchased by the college, build an online teaching resource library, construct teaching course resources, improve teaching cases and electronic question banks, and continuously improve teachers' online teaching ability. Advanced models who emerged from the online education activities were invited to "present themselves" and pass on their experience to others. Summarise the teaching management experience during the epidemic, declare research on online education and teaching reform, declare online excellent quality courses and teaching demonstration courses, etc., and think about the future

development path of the College.

What is suitable is optimal. At this stage, online education websites and platforms are springing up all the time. As education managers, they should combine their own reality, accurately identify and rationally choose teaching websites and platforms that are suitable for the development of their own schools, and create tailor-made online teaching programmes. Make full use of your school's existing educational resources, such as your teacher's moocs, quality courses and online courses, and learn to make full use of free, high-quality online resources. Learn the latest education and teaching theories and update your education and teaching philosophy. Compared with the traditional classroom mode, the online education model not only breaks the time and space constraints, but also changes the original teaching management hierarchy. Teaching managers need to do more to serve and support teachers, not to interfere too much with online teaching methods, and to give teachers full understanding and freedom. Teachers with poor information technology skills can run their classes using QQ voice and email; teachers with strong information technology skills and an interest in online teaching can be supported with space and funding.

The online education method developed through the Internet naturally has the Internet's ability to store information in good memory. All teaching and learning processes are traceable. Education managers should make good use of the digital traces left by online teaching activities to monitor the teaching situation in real time

and to give timely guidance and correct errors.

Teaching implementers: Adjusting and adapting to the new environment and methods of teaching is not uncommon for frontline teachers, who are the implementers of this large-scale online teaching activity. But the virtual, mobile and pan-learning approaches that have emerged in the information age are in fact the development and evolution of online learning. Teaching implementers should take the initiative to meet the challenges and constantly adjust and adapt to new ways of teaching and learning. Traditional teaching methods are based on teachers implementing teaching activities, with teachers being the main subject; the effect of online teaching activities is more dependent on students, and teachers' control over on-site teaching activities is weakened, so to improve teaching quality, students must be more motivated to learn on their own. Therefore, in the process of teaching implementation, teachers should first improve their ability to search for and use information technology resources, and increase the attractiveness of the teaching content. Secondly, they should be creative in designing interactive sessions that require students' cooperation to effectively motivate them to learn. Again, you should make good use of class groups and peer supervision to reinforce the teacher's 'sense of presence'. Finally, parents must be closely contacted to increase their involvement in teaching and strengthen home-school co-education.

The online teaching app basically has a live video function, so teachers can record their lessons so that students can revisit them later by watching the playback.

As the main implementer of online teaching activities, teachers must take the initiative to adapt to the internet, such as becoming a knowledge anchor and actively selling (spreading) knowledge; opening the pop-up function to increase interaction between teachers and students; using the online discussion function to answer questions and solve problems in real time to arouse students' interest as much as possible and guide them to participate deeply in classroom teaching. Improve the quality of teaching.

Teaching investors: strengthening self-management Online teaching is more dependent on student participation and initiative than traditional teaching. Online teaching lacks a learning environment because there is no classroom, and it lacks monitoring because it is not managed by teachers. Parents, who are used to being life guardians, are also very uncomfortable with the change in their role as supporters of the teaching during the home study period of the epidemic.

In order to ensure the quality of online teaching, parents need to provide a quiet place for students to study as much as possible, cooperate with teachers to monitor and follow up on students' progress and, where possible, provide tutorials. Students, firstly, need to realise that during the epidemic, online teaching activities are normal teaching activities, and that the courses taught online are normal teaching courses, with a high degree of ideological importance. Secondly, they should make good use of online resources to obtain more useful information materials. Once again, they should actively participate in online teaching activities to enhance interaction and improve learning outcomes.

Chapter 3

Research Methodology

3.1 Population/sampling method/variables

In order to accurately grasp the current situation and problems of online teaching of e-commerce courses in secondary schools, to understand the actual views and understanding of teachers and students on the effectiveness of the use of online teaching, to grasp the confusion encountered by teachers and students in online teaching and the successful experience achieved, etc., the author designed questionnaires and interview questions and conducted surveys on the development of the use of online teaching of e-commerce courses in secondary schools, the survey population was mainly the teachers and students of the two The survey population was mainly teachers and students of the two e-commerce classes taught by the author, with a total of 90 students and four teachers. The survey was conducted in the form of a web-based questionnaire, using the internet tool "Questionnaire Star" to collect and tabulate the results via WeChat. The content of the survey included students' understanding and acceptance of online teaching, the application of online teaching in e-commerce courses in secondary schools, problems and suggestions for improvement, etc. The content of teachers' interviews was divided into two modules: the dilemma of traditional classroom teaching and their understanding of online teaching, etc.

3.2 Data collection

The interviewees were teachers of e-commerce courses and students who had experienced online teaching methods in a secondary school in Shenzhen, Guangdong Province, China. They were more realistic about the application of online learning, and they were able to grasp their ideas about online teaching, problems, and suggestions in the development of online teaching, which could better enrich the results of the questionnaire and make our final results more reliable. A total of 90 students, 90 questionnaires were distributed, and 78 valid questionnaires were returned; and interviews were conducted with four teachers, recorded under the code names of Teacher A, Teacher B, Teacher C and Teacher D.

3.3 Tools/research design (questionnaires/interviews)

Questionnaire method

The questionnaire survey method is to set relevant questions for the topic of the thesis and select teachers and students who have participated in the online teaching of e-commerce courses in secondary schools to conduct a questionnaire survey, and then filter, analyse, summarise and conclude the data, according to which the problems existing in the online classroom of e-commerce courses in secondary schools will be analysed.

Online interview method

In order to ensure the reliability of the research results and to make up for the shortcomings of the questionnaire survey, online communication interviews were

conducted. Interviews were conducted with teachers of e-commerce courses in secondary schools, as well as with students who were taking the relevant courses, to understand the problems faced by teachers and students in secondary schools in the online teaching of "no classes, no learning", and to understand their ideas and opinions. By carefully analysing and summarising the teachers' and students' experiences, and by supplementing the questionnaire with the interviews, the final results of the study can be more detailed and reliable.

3.4 Data Preparation and Data Analysis

3.41 Analysis of students' online learning

In order to better understand the factors influencing students' online teaching, online learning preferences and needs, as well as students' understanding of online teaching, and to meet students' personalised teaching needs, as well as to design a realistic and feasible online teaching programme for the online classroom. A questionnaire survey was designed for the e-commerce class taught, divided into four dimensions with a total of 20 questions. The questionnaire is set out in Table 1, and the content is detailed in Appendix A Secondary Online Teaching Questionnaire.

Table 1 Question set

Dimension	Question number	Number of questions
Factors influencing online teaching	1-2	2
Online learning preferences and needs	3-12	11
Understanding of online teaching and learning	13-14	2
Understanding of the effectiveness of online learning	15-20	5

3.42 Analysis of teachers' teaching needs

The interviewees in this study were four teachers teaching e-commerce in a vocational and technical school in Shenzhen, where the author works. In order to better understand the teachers' dilemmas in traditional classroom teaching and their understanding of online teaching, this study conducted an interview with the teachers, which was divided into two modules: dilemmas in traditional classroom teaching and understanding of online teaching, as detailed in the outline of the interview with teachers of online teaching in secondary schools in Appendix B.

Chapter 4

Results of the data analysis

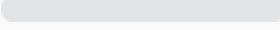
4.1 Analysis of students' online learning

(i) Factors influencing online teaching and learning

1. Smartphone ownership rate

The smooth implementation of online teaching activities considers the ownership rate of smartphones. In the survey of "smartphone ownership", 35 people took part in the questionnaire, and the ownership of smartphones reached 100%, which means that mobile phones have become a necessary item for secondary school students.

Table 2 Question 1 Do you have your own smartphone?

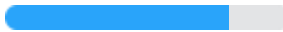
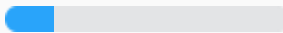
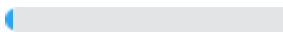
Options	Subtotal	Proportion
A. Yes	78	 100%
B. No	0	 0%

2. Frequency of WeChat use

WeChat is now a popular instant messenger and is favoured by a wide range of users. In the survey "How often do you use WeChat?" In this survey, 17.95% of students use WeChat occasionally, while 79.49% of students use WeChat frequently. This

shows that WeChat plays an important role in communication and has a significant impact on students' studies and lives.

Table 3 Question 2 Do you use WeChat regularly?

Options	Subtotal	Proportion
A. Yes	62	 79.49%
B. Occasionally	14	 17.95%
C. No	2	 2.56%

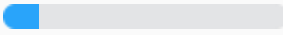
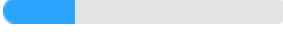
(ii) Online learning preferences and needs

Online learning is free-form and fragmented, so we need to understand students' willingness to learn, their preferences and learning needs in order to optimise the design of the content and presentation of knowledge, so we conducted the following survey.

1. Willingness to learn online

WeChat has become an essential software for students to communicate with others in their daily lives. In this survey, 61.54% of students were willing to use WeChat for online learning, while 12.82% and 25.64% were unwilling and indifferent respectively. This shows that the majority of students are happy to accept WeChat as a learning aid.

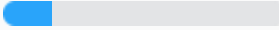
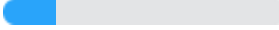
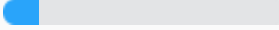
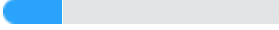
Table 4 Question 3 Are you willing to use WeChat for online learning?

Options	Subtotal	Proportion
A. Yes	48	 61.54%
B. No	10	 12.82%
C. Don't care	20	 25.64%

2. Online learning methods

In the selection of the form of online teaching resources, the survey results, the proportion of students choosing video resources, pictures and PPT are 29.49%, 20.51% and 19.23% respectively; the total percentage of choosing these three types of teaching resources reaches about 70%. Video teaching resources are a combination of sound, pictures and text, which can dynamically display the learning content and attract students' attention; PPT teaching resources are the most frequently used learning resources by students in the classroom, presenting knowledge content in the form of pictures, animations and videos, which are interesting and rich. Therefore, videos, pictures and PPTs can be combined in the resource design process.

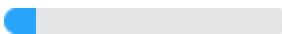
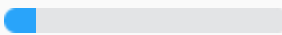
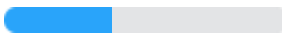
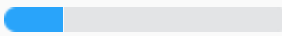
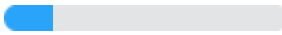
Table 5 Question 5 What kind of online resources do you prefer when you study online?

Options	Subtotal	Proportion
A. Video	23	 29.49%
B. Audio	14	 17.95%
C. PPT	15	 19.23%
D. Text	10	 12.82%
E. Picture	16	 20.51%

3. Length of online learning

In the results of this survey on the choice of the length of online learning per lesson, the proportion of students choosing 5 minutes and 10 minutes were 11.54% and 11.54% respectively, with the highest number of students choosing 20 minutes accounting for 38.46% and 20.51% for 30 minutes, with a total of 82% within 30 minutes. This indicates that students are willing to accept online learning but do not like it to be too long, so teachers try to keep it under 30 minutes when setting up online teaching content.

Table 6 Question 6 How long would you like to study online in a lesson?

Options	Subtotal	Proportion
A. 5 minutes	9	 11.54%
B. 10 minutes	9	 11.54%
C. 20 minutes	30	 38.46%
D. 30 minutes	16	 20.51%
E. 50 minutes or more	14	 17.95%

4. Pre-learning and post-lesson revision

In the learning process, in order to clarify the learning objectives, students are required to pre-review before class, and to consolidate and review after class. The percentages of students who "occasionally", "rarely", "never" and "never" studied before class were 25.7%, 25.7% and 11.5% respectively. The proportion of those who "always" studied before class was only 23%. The percentages of students who reviewed after class were 39.0%, 20.5% and 11.5% for "occasionally", "rarely" and "never" respectively, while only 19.2% of students Only 19.2% of students reviewed "every time". This shows that most students have poor self-control and are unable to complete their pre-reading and revision assignments in a timely manner. Therefore, in the process of teaching design, attention should be paid to the design of teaching activities to stimulate students' internal drive to learn, gradually transition from passive learning to active learning, and form good habits of pre-reading and revision.

Table 7 Question 7 Do you study in advance?

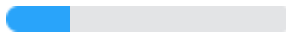
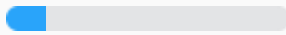
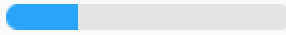
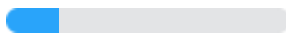
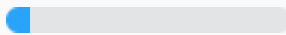
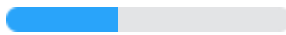
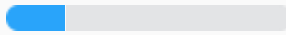
Options	Subtotal	Proportion
A. Every time	18	 23.08%
B. Often	11	 14.1%
C. Occasionally	20	 25.64%
D. Rarely	20	 25.64%
E. Never	9	 11.54%

Table 8 Question 8 Do you revise after class?

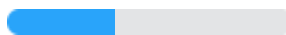
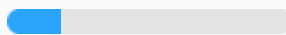
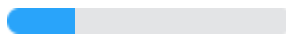
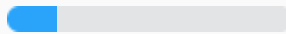
Options	Subtotal	Proportion
A. Every time	15	 19.23%
B. Often	7	 8.97%
C. Occasionally	31	 39.74%
D. Rarely	16	 20.51%
E. Never	9	 11.54%

5. Problem-solving methods in independent learning

In the process of independent learning, students will encounter many learning problems and choose different ways of solving them. The proportions of telling the teacher anonymously, the teacher answering online, discussing with classmates and

finding information on their own are 17.95%, 19.23%, 24.36% and 38.46% respectively. This shows that online learning and communication can meet students' needs for problem solving to a certain extent, and teachers must take into account students' preferences and needs for solutions when designing their online teaching.

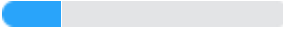
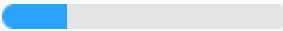
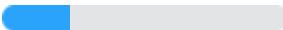
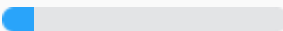
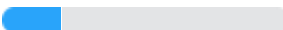
Table 9 Question 9 When you encounter difficulties in your online independent learning, what would you like?

Options	Subtotal	Proportion
A. find information by yourself	30	 38.46%
B. have the teacher answer online	15	 19.23%
C. discuss with your classmates	19	 24.36%
D. tell the teacher anonymously	14	 17.95%

6. Classroom activities

In the survey on the choice of classroom teaching activities, teamwork and self-learning were the most preferred methods of classroom teaching activities, with a total of 47.3% of students, of which 20.5% chose online learning and only 20.5% chose teacher lectures. This shows that students do not like traditional teaching methods very much in comparison, preferring collaborative and IT-based teaching modes. Therefore, in the design of classroom activities, teachers should design more group activities to develop students' sense of collaboration and the ability to solve problems together.

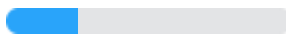
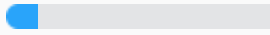
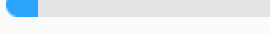
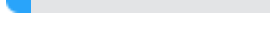
Table 10 Question 11 Which type of classroom activity do you prefer?

Options	Subtotal	Proportion
A. Teacher's lecture	16	 20.51%
B. Self-learning	18	 23.08%
C. Teamwork	19	 24.36%
D. Topic discussion	9	 11.54%
E. Online learning	16	 20.51%

7. Teaching evaluation and help

In the survey on whether teachers can help with homework problems, the majority of students (42.3%) chose 'occasionally'. This suggests that teachers do not assess most students promptly and do not respond quickly enough to help students with their studies. In traditional teaching, due to the small number of teachers and the large workload, it is not possible to pay attention to all students offline, which can lead to untimely tutoring. Therefore, online learning requires the use of some intelligent learning platforms, which not only allow teachers to provide timely answers to students' questions and tutorial help, but also facilitate mutual discussions and problem solving among students, and promote mutual help between teachers and students.

Table 11 Question 12 Can teachers help you with your homework problems?

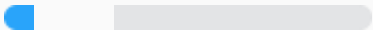
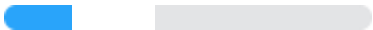
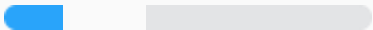
Options	Subtotal	Proportion
A. Every time	20	 25.64%
B. Often	9	 11.54%
C. Occasionally	33	 42.31%
D. Rarely	9	 11.54%
E. Never	7	 8.97%

(iii) Understanding of online teaching and learning**1. Choice of teaching mode**

In the choice of online teaching mode, 10.26% of the students chose the mode of student self-learning with teacher-assisted teaching, indicating that these students are more capable of independent learning, but they only account for a small proportion. This compares with 24.36% of students who chose student self-study with collaboration and teacher-assisted question and answer. This indicates that a small number of students are looking for group members to join them and to complete their learning content pre-reading in collaboration. 44.87% of the students believe that it is better for the teacher to lecture offline and for students to learn on their own occasionally. This indicates that students are lacking in independent learning and self-control. Therefore, the choice of online learning mode should be based on the basic needs of students and take into account their learning characteristics and habits

in order to make the best use of online teaching and learning.

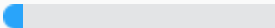
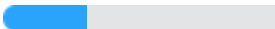
Table 12 Question 13 Which online teaching model would you like to use?

Options	Subtotal	Proportion
A. Offline lectures by teachers and occasional self-study by students	35	 44.87%
B. Self-study by students and supplementary teaching by teachers	8	 10.26%
C. Self-study and cooperation by students and Q&A by teachers	19	 24.36%
D. Other	16	 20.51%

2. Willingness to use the online classroom platform

In the survey of online teaching on the online classroom platform in the middle-level E-commerce course, 62.8% of the students wished to use the online classroom for online teaching in the classroom, and the proportion of students who said they were unwilling and indifferent was 7.7% and 29.5%. This shows that students are mostly positive about the online classroom platform, which facilitates teachers to use the online classroom for online teaching in the classroom.

Table 13 Question 14 Would you like to use an online mode of teaching in your E-Commerce course?

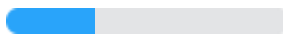
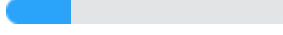
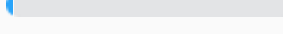
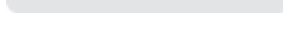
Options	Subtotal	Proportion
A. Yes	49	 62.82%
B. No	6	 7.69%
C. Don't care	23	 29.49%

(iv) Understanding the effectiveness of online learning

1. Analysis of students' satisfaction

When investigating the application of online teaching mode in the middle-level E-commerce course, 32.05% of the students liked the online teaching mode very much, and 42.31% of the students liked the online teaching, and thought that the online teaching mode had facilitated their learning of professional knowledge. It can be seen that the vast majority of students like the online mode of teaching and learning, and that the online mode of teaching has increased students' interest in learning. At the level of students' willingness to learn, the online teaching mode was applied more effectively.

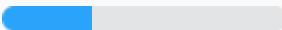
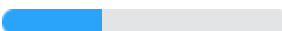
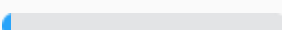
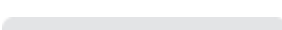
Table 14 Question 15 Do you enjoy doing line learning?

Options	Subtotal	Proportion
A. Very much	25	 32.05%
B. Like	33	 42.31%
C. Fairly	18	 23.08%
D. Dislike	2	 2.56%
E. Very much dislike	0	 0%

2. Analysis of the degree of theoretical learning and skills acquisition

Improving learning efficiency is one of the important objectives of conducting online teaching mode. 29.49% of the students strongly agreed that the online teaching mode had improved their learning efficiency, and 32.05% agreed that the online teaching mode had improved their learning efficiency. It is evident that the majority of students believe that the online teaching mode has improved their own learning efficiency. At the level of students' learning efficiency, the application of online teaching mode in this course of E-Commerce in secondary school has achieved better results.

Table 15 Question 18 Have you improved your learning efficiency by using an online learning platform?

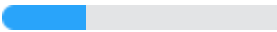
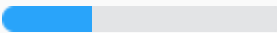
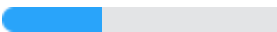
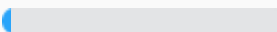
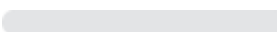
Options	Subtotal	Proportion
A Strongly agree	23	 29.49%
B Agree	25	 32.05%
C Fairly agree	27	 34.62%
D Disagree	3	 3.85%
E Strongly disagree	0	 0%

3. Change of students' learning attitudes and habits

The online teaching mode has high requirements for students' independent learning ability. Secondary school students are bound to be full of obstacles at the initial stage of independent learning due to their knowledge base, learning habits and learning attitudes, but teachers, as the guides of students' learning, cannot be daunted by the difficulties, and the cultivation of independent learning ability is an asset that students will benefit from for the rest of their lives. In the initial pre-course learning phase of the online teaching model in the E-Commerce course, there is a low rate of student participation. However, through the teacher's teaching motivation techniques, the student participation rate was greatly improved. With 61.5% of students believing that their independent learning skills have improved, it is evident that the application of online teaching in E-Commerce has helped to improve students' independent

learning skills.

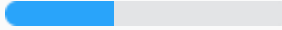
Table 16 Question 19 Have you improved your independent learning skills?

Options	Subtotal	Proportion
A Strongly agree	23	 29.49%
B Agree	25	 32.05%
C Fairly agree	27	 34.62%
D Disagree	3	 3.85%
E Strongly disagree	0	 0%

4. Changes in communication and collaboration skills

The vast majority of students felt that their communication and collaboration skills had improved with online teaching, with 42.31% of students agreeing strongly that their communication and collaboration skills had improved and 38.46% of students agreeing that online teaching had been useful in improving their communication and collaboration skills. It is clear that, to some extent, online teaching and learning can facilitate communication and collaboration between students and teachers.

Table 17 Question 20 Have you improved your communication and collaboration skills?

Options	Subtotal	Proportion
A Strongly agree	33	 42.31%
B Agree	30	 38.46%
C Fair	13	 16.67%
D Disagree	2	 2.56%
E Strongly disagree	0	0%

4.2 Summary of the analysis of students' online learning

(i) Factors influencing online teaching

Smartphones are gradually becoming a necessity in students' daily lives and studies, and WeChat is also a communication software used by students for interactive communication more frequently. 79.5% of students use WeChat every day, and they are willing to use it for online learning and communication. Therefore, students have a relatively high rate of mobile phone ownership and use WeChat more frequently, which provides favourable conditions for the smooth implementation of online teaching.

(ii) Online learning preferences and needs

Most students are willing to use WeChat for online learning. Among the resource preferences for online learning, more students choose videos, pictures and

PPT, and the length of online learning can be mainly within 30 minutes. Only 23.08% of the students pre-reviewed before class and 19.23% of the students reviewed after class, so from the perspective of teaching design, teachers should improve students' motivation to learn and let them take the initiative to learn. The majority of the students had a need to learn. In terms of learning needs, most students choose to look up information on their own or discuss with their classmates in WeChat groups to solve their problems.

(III) Understanding of online teaching

The survey results show that, in the choice of online teaching mode, students prefer the teaching mode in which teachers' offline lectures are the main focus and students' self-learning is supplementary, indicating that online teaching should focus on the cultivation of students' independent learning ability. In the questionnaire survey, it was found that 62.82% of the students wanted to use the online classroom platform for online teaching in the teaching of E-Commerce course.

(iv) Understanding the effect of online learning

Through the analysis of the questionnaire, it can be found that students prefer the online teaching mode. Learning habits have been improved, independent learning ability has been enhanced, student-student interaction and teacher-student interaction have made the classroom richer, students are more engaged in the online teaching mode, learning participation has been enhanced, and it has also played a certain role in improving students' interest in learning.

4.3 Analysis of teachers' teaching needs

1. "The traditional classroom dilemma" interview

Question 1: What is the level of student participation in a traditional classroom?

Teacher A: Our class size is relatively large and we have a class teaching system, so teachers cannot take care of every student. Some students tend to desert the class and are not active enough to speak, so class participation is not high and there is less interaction between teachers and students.

Question 2: In a traditional classroom, can you make timely classroom assessments for each student?

Teacher B: We can only find out whether students have completed their pre-reading and revision assignments by asking and randomly checking. We do have some tests in class, but due to time constraints, we can only focus on some students' answers, so we miss other students and cannot assess each student in time.

Question 3: Do you have much interaction with students in traditional classroom teaching?

Teacher B: Classroom time is limited and students mainly listen during the lecture session. When it comes to the interactive session, students with excellent learning are more willing to express their ideas, while other students are more willing to listen, so the interaction with students is rather limited, and we cannot take care of every student.

2. "Understanding of online teaching" interview

Question 1: Do you know about online teaching? Have you tried it? And how is it organised?

Teacher C: Yes, I have tried it. Generally, students are allowed to access materials related to the teaching content online and deepen their understanding and learning by watching videos, reading comments and doing exercises.

Question 2: Would you like to use online teaching in your future teaching?

Teacher C: It is now a world of information technology development, and we also need to keep up with the trend of introducing information technology into classroom teaching to help teaching activities, so I am willing to continue to use online teaching in my future teaching.

Question 3: What do you think are the advantages of the online classroom platform?

Teacher D: I have used the online classroom platform before during the epidemic. It allows me to better monitor each student's learning and mastery of knowledge, and the data provided by the platform facilitates me to make comprehensive learning assessments for each student.

4.4 Summary of teachers' teaching needs analysis

Through the interviews with the teachers, we summarised the dilemmas of traditional classroom teaching, as well as the teachers' understanding of online teaching, their willingness to carry out online teaching, and made adequate preparations for the implementation of the online classroom platform.

(i) Difficulties of traditional classroom teaching

1. Low level of student participation in the classroom

Through interviews with teachers, I learnt that because the traditional classroom teaching mode is a class teaching system, one teacher has to manage dozens of students, and teachers are unable to pay attention to every student in the classroom.

2. Incomplete data collection

Students review before and after class offline, and teachers can only use random checks to check students' learning. Even for the in-class assignments, teachers are unable to monitor each student's answers, resulting in incomplete data collection on student answers. Teachers are unable to make timely process teaching assessments on students, especially when teaching the 1+X certificate process, and are unable to take care of each student's operational progress.

3. Poor teacher-student interaction

When students encounter problems in traditional teaching, teachers are often unable to answer and solve them in a timely manner. Moreover, the time for

communication between teachers and students is limited, mainly focusing on classroom teaching time and after-school breaks, which leads to poor interaction between teachers and students, and teachers are unable to learn about students' learning difficulties and students' difficult problems cannot be solved in a timely manner.

(ii) Understanding of online teaching

Interviews with teachers who teach e-commerce revealed that some teachers have adopted online teaching methods, such as using online resources for students to watch during the pre-course and classroom lecture stages. Secondly, the teachers were willing to accept online teaching as a way of exploring new ways of teaching and learning to solve problems in the traditional classroom. They believe that online learning does not require much time or location, and that students can view online teaching resources anytime and anywhere, and that online learning also makes it easier for teachers to track students' learning, to use back-end data to make stage assessments of students, or to personalise teaching for some late-comers.

In conclusion, in the interviews, teachers believed that traditional teaching had problems such as low student participation in class, incomplete data collection and poor teacher-student interaction. To solve these problems, some teachers had adopted online teaching mode, and most of them said they did not understand online teaching, but they also expressed their willingness and hope to teach online through the online classroom platform, so as to motivate students, record their learning

records The majority of teachers indicated that they were not aware of online teaching, but were willing and willing to use the online classroom platform to motivate students, record students' learning records and participation, and analyse data on teaching activities to facilitate a better grasp of the classroom process and post-class reflection.

4.5 Summary of this chapter

Through the analysis of the data from the student questionnaire, we know that students are willing to learn and communicate online, but the online learning time should not be too long, and more students prefer a teaching mode in which the teacher's lectures are the main focus and online students' self-learning is supplementary. 62.82% of the students hope to use online teaching in the teaching of E-commerce course. The teaching needs of teachers were recorded by means of interviews. Most teachers expressed their willingness and desire to teach online, and through the feedback of data from teaching activities, they could better grasp the pace of classroom teaching and improve the effectiveness of classroom teaching as a solution to the problems faced by traditional classrooms.

Chapter 5

Conclusion and Discussions

5.1 Conclusion

The main work and conclusions of this study are as follows.

Firstly, combing through the literature related to online teaching research, and online teaching of e-commerce in secondary schools at home and abroad.

Second, questionnaires were administered to students in the experimental classes and interviews were conducted with the school e-commerce teachers, and the results of the questionnaires and interviews were analysed.

Third, through questionnaires and interviews, the learning effect produced by students' learning practice and the teaching effect after teachers' classroom practice were analyzed in detail, and then data analysis was used to compare the practice data of the experimental class before and after the test to prove that the online teaching mode helps the classroom teaching of the secondary-level E-commerce course.

Fourthly, after the teaching experiment, this paper deeply reflects on the shortcomings in the teaching practice process and proposes improvement strategies to pave the way for future experimental research and outlook.

5.2 Discussion of the results

After the practical analysis, the online teaching mode has solved some of the

problems of the drawbacks of traditional education, and the conclusions are as follows.

First, online teaching improves students' interest and motivation in learning. The pre-class micro-lecture videos are very interesting and the number of students watching the class materials online has increased, but teachers have to push teaching resources suitable for them on the online classroom platform, drawing on the teaching materials and taking into account the level of difficulty of knowledge.

Secondly, classroom activities in online teaching are student-driven and reflect student agency. Students express their opinions in class by sending pop-ups, collaborating in groups in class, and evaluating each other in groups to express their views.

Thirdly, online teaching enhances the interaction between teachers and students. Students give feedback on difficult points on the online classroom platform, teachers answer questions online in real time, and pop-ups and accompanying tests in the classroom facilitate interaction and communication between teachers and students.

Fourthly, teachers use the online classroom platform data for diverse assessment. With the pre, in and post class data provided by the online classroom, teachers can get a more complete picture of student learning and make more accurate process and summative assessments for each student.

Fifthly, online teaching promotes the development of students' active learning

skills, communication skills, group work and problem-solving skills.

In the real teaching process, online teaching based on the online classroom platform is also a double-edged sword that requires teachers to grasp certain degrees, with the following conclusions.

First, ensure that the online test questions are few and precise. Teachers should draw on the textbook to recommend suitable and interesting teaching resources and test questions for students. The number of questions should not be too many and the quality of the questions should be high, otherwise it will reduce students' interest in learning.

Secondly, uniform management of mobile phones is implemented. Teachers can implement unified management of students' mobile phones during lessons when their computers have been synchronised with students' online classroom software, so as to avoid students playing mobile games in class.

Thirdly, effective monitoring of the classroom. During brainstorming pop-up sessions and teamwork task-based activities, teachers should not only focus on the data in the background, but also on the learning status of each student.

Fourth, control the pace of classroom teaching. When teachers teach with the help of an online classroom platform, they should be clear that the platform only adds interest and practice to classroom activities and does not replace the function of offline teaching, and that the instability of the platform may cause distress on both sides of the teaching spectrum.

Fifth, provide timely feedback. Students' questions online are immediate in nature, and teachers should give real-time feedback and evaluation to students in a timely manner so that they can understand their learning situation; delays in feedback may reduce students' motivation to learn.

5.3 Recommendations

5.31 Suggestions for the management of online teaching

(i) Optimise the online learning environment and stimulate learners' interest in using it

The above research shows that enabling conditions have a positive impact on secondary school students' behavioural intention to learn online, indicating that the higher the level of support students receive in using online learning, the more inclined they are to use online learning. As hardware and software resources are essential tools for using online learning, it is recommended that vocational institutions provide support for students in terms of both hardware equipment and software resources.

In terms of hardware, it is recommended to start with the physical environment by strengthening the campus network, arranging special staff to regularly update and maintain the website, and helping learners with timely and convenient technical service support. However, for online learning, in addition to these physical guarantees, it is also necessary to establish a more flexible and ubiquitous learning environment, such as providing an intelligent, personalised and compatible online teaching environment, achieving a seamless integration between online and offline teaching,

and promoting the construction of digital online learning spaces.

In terms of software, quality course resources are a quality guarantee for student learning. It is recommended that schools provide learners with rich and diverse online course resources, online learning platforms, and encourage teachers to develop online courses to improve academic support for online learning. In addition, a team of professional online learning instructors should be built to answer learners' questions when they encounter difficult-to-understand knowledge points in the process of using online learning, so as to improve learners' motivation

5.32 Suggestions for teachers

(i) Enhance online learning support services to improve students' sense of presence.

For secondary school students, they are not mature and independent learners, and without the help of teachers, they will easily become irritable. Teacher support is therefore crucial and it is recommended that teachers provide support for students in both instrumental and emotional terms.

In terms of instrumental support, it is mainly to help students solve the technical problems they encounter in online learning, which is the basic guarantee for students to conduct online learning. For secondary school students, they are more concerned with the technical aspects. Therefore, the tool support provided by teachers can help learners solve technical operation problems and let students master the operation process of the online learning platform as soon as possible, so

as to ensure the orderly implementation of online learning. It is important to note that the teacher's responsiveness is crucial, as a timely response from the teacher can reinforce learners' online learning behaviour, thus enhancing online learning behavioural intentions and usage behaviour.

In terms of emotional support, a good atmosphere for online discussion and active learner participation can enhance learners' sense of belonging. In online learning contexts where teachers and students lack emotional communication, teachers should pay more attention to learners' social and emotional interactions, enhance interaction design, actively create an online learning community and improve learners' communication skills. For example, encourage learners to use the collaboration tools provided by the online learning platform, or use real-time communication tools such as QQ to express their views and participate in group discussions, so as to enhance social interaction among learners. In addition to providing social interaction, teachers should also pay attention to learners' motivation and psychological conditions, and encourage and praise learners in a timely manner so as to enhance learners' sense of belonging.

(ii) Provide self-directed learning scaffolds to stimulate learning initiatives.

Although online learning increases the possibility of independent learning, it also inevitably leads to a lack of supervision of learners, and it is not uncommon for learners to miss classes, swipe classes, or lose concentration.

Firstly, teachers should guide students to engage in self-directed learning.

Although fun is the most important indicator of online learning behavioural intentions, learners are currently only interested in online learning as an emerging learning method, without really experiencing the fun of online learning. Therefore, it is recommended that teachers take learner self-directed learning as the starting point of online learning, by creating exploratory learning tasks, providing rich and interesting online resources, increasing course interaction design and building reward mechanisms to Enhance the fun of online learning, so that students can feel the fun of independent learning and immerse themselves in the process of online learning. At the same time, strengthen supervision to avoid inattentiveness of learners and the phenomenon of missing classes.

Secondly, teachers need to guide students in deep learning. Although online learning can currently help learners to complete shallow learning, it is not as effective as it could be in terms of deep learning, so it is recommended that teachers use effective teaching strategies to promote deep learning among learners. For example, online practice is an effective teaching strategy. Online practice can solve the problem of untimely feedback on traditional paper and pencil tests, and teachers can make full use of the feedback advantage of online practice to provide learners with accurate teaching. The same applies to study notes, which are also an effective teaching strategy. By taking advantage of the openness and sharing nature of the Internet, students are encouraged to show their study notes and actively share their views on the learning platform through the uploading of images, thereby stimulating deeper

thinking among learners.

5.33 Suggestions for students

Enhance the sense of self-control and promote positive learning emotions

The above research shows that self-learning management has a positive impact on secondary school students' behavioural intention to learn online, indicating that students with a stronger sense of self-control are more likely to stimulate online learners' behavioural intention. In the process of using online learning, we need to be flexible in controlling our relationship with learning.

Firstly, learners need to correctly understand their own shortcomings and identify their weaknesses. Secondly, they should set learning goals based on their own needs and shortcomings. Only by transforming teachers' teaching goals into their own learning goals will they engage more actively in the online learning process, making online learning a purposeful and planned activity. Finally, it is important to improve your reflective skills. Regularly summarise, evaluate and reflect on your learning plans, make timely adjustments to them, and gradually develop a norm of self-motivated learning in an unsupervised environment. In addition, to better improve self-learning management skills, learners are advised to do a good pre-course review before using online learning to avoid being overwhelmed when using online learning. To improve concentration in online learning, it is recommended that only learning-related pages or software are opened during the use of online learning to reduce distractions caused by other online activities.

In an era of rapid internet development, information technology is gradually being integrated into the teaching and learning sector. In the future, there will be more online teaching applications based on smart platforms, such as Rain Classroom and Curtain Classroom. Online teaching can change the shortcomings of traditional teaching, not only can it enhance students' learning motivation and give full play to their subjectivity, but also improve the interaction between teachers and students, and promote the development of students' active learning ability and group cooperation ability. In this study, only one experimental class of secondary e-commerce majors was selected, and the results of the study are not necessarily applicable to other subjects. In addition, teaching with the online classroom platform requires teachers to be proficient in using the platform functions and students to be proficient in operating the WeChat software. It is hoped that more subjects will apply the online classroom platform to online teaching in the future, providing more feasible references for research on information-based teaching in secondary schools.

Appendix A Online Teaching and Learning Questionnaire for Secondary Schools

Teaching and Learning Questionnaire (Students)

Dear students.

Hello! The purpose of this questionnaire is to find out your learning preferences and understanding of online teaching. We hope you will fill in the questionnaire as you see fit.

1. Do you have your own smartphone? ()

A.Yes B.No

2. Do you often use WeChat? ()

A.Yes B.Occasionally C.No

3. Are you willing to use WeChat for online learning? ()

A.Yes B.No C.Don't care

4. Are you willing to communicate with others on WeChat for learning? ()

A.Yes B.No C.Don't care

5. What kind of online resources do you prefer when you study online? ()

A. Video B. Audio C. PPT D. Text E. Pictures

6. How long are you willing to study online in each lesson? ()

A. 5 minutes B. 10 minutes C. 20 minutes D. 30 minutes E. 50 minutes or more

7. Do you study in advance? ()

A. Every time B. Often C. Occasionally D. Rarely E. Never

8. Do you revise after class? ()

A. Every time B. Often C. Occasionally D. Rarely E. Never

9. When you encounter difficulties in your independent study online, do you wish to? ()

A. find information by yourself B. have the teacher answer you online C. discuss with your classmates D. tell your teacher anonymously

10. Do you actively participate in classroom activities in class? ()

A. actively participate in discussions in class B. actively participate in classroom activities that interest you

C. I am not interested in classroom activities D. I do not understand the classroom content and do not participate in classroom activities

11. What kind of classroom activities do you prefer? ()

A. Teacher's lecture B. Self-learning C. Teamwork D. Topic discussion E. Online learning

12. Can the teacher give you help with your homework problems? ()

A. Every time B. Often C. Occasionally D. Rarely E. Never

13. Which online teaching mode would you like to use? ()

A. Offline lectures by teachers and occasional self-study by students B. Self-study by students and supplementary teaching by teachers C. Self-study and cooperation by students and Q&A by teachers D. Other

14. Would you like to use the online teaching mode in the teaching of E-

Commerce course? ()

A.Yes B.No C.Don't care

15. Do you like to do online teaching and learning?

A Very much B Like C Fairly D Dislike E Very much dislike

16. Do you study the learning resources of the online teaching platform seriously?

A very serious B serious C fair D not serious E not serious at all

17. Do you pay attention when you study online?

A Very attentive B Attentive C Fairly attentive D Not attentive E Very unfocused

18. Have you improved your learning efficiency by using the online learning platform?

A Strongly agree B Agree C Fairly agree D Disagree E Strongly disagree

19. have you improved your ability to learn independently?

A Strongly agree B Agree C Fairly agree D Disagree E Strongly disagree

20. have you improved your ability to communicate and collaborate?

A Strongly agree B Agree C Fair D Disagree E Strongly disagree

Thank you again for your cooperation, thank you!

Appendix B Outline of Interviews with Secondary Online Teachers

1. Interview on "Online Teaching Dilemma

Question 1: What is the level of student participation in the classroom during online teaching?

Question 2: In online teaching, can you make timely classroom assessment for each student?

Question 3: How much interaction do you have with your students during online teaching?

2. "Understanding online teaching" interview

Question 1: How do you organise your online teaching?

Question 2: Would you like to use online teaching in the future?

Question 3: What do you think are the advantages of online teaching?

Reference

- Ministry of Education, China. Ministry of Education issues guidance on good organization and management of online teaching in universities during epidemic prevention and control
- Institute of Intelligent Learning, Beijing Normal University. 2018 China's vocational education technology outlook: Proposed report of the Horizon Project
- Wan Kun, Zheng Xudong, Ren Youqun. (2020). Is online learning at scale ready? -- Thinking about online learning and smart technology applications in the post-epidemic period [J]. Journal of Distance Education, 2020, 38(03): 105-112.
- Means B, Toyama Y, Murphy R, et al. (2005). The Effectiveness of Online and Blended Learning: A Meta-Analysis of the Empirical Literature [J]. Teachers College Record, 2005, 115(3):132-162.
- Matt B, Panos V. (2018). A critical analysis of technology-enhanced learning design frameworks[J]. British Journal of Educational Technology, 2018,49(18):1-17.
- Vaughan N. (2015). Designing for an inquiry based approach to blended and online learning[J]. Revista Eletrônica de Educação, 2015, 9(3): 30-47.
- Chrysafiadi K, Virvou M. Pe. (2013). RSIVA: An empirical evaluation method of a student model of an intelligent e-learning environment for computer programming[J]. Computers& Education,2013,68:322-333.
- Dong W, Zhang M, Gao Cnlu, Pan Haisheng. (2020). Study on the factors influencing

the learning effect of online education platform based on user experience[J]. China Distance Education, 2020(11):68-75.

Nie Jieting. (2018). The construction and implementation management of blended teaching system based on online teaching platform in secondary schools[D]. Yunnan Normal University, 2018.

Huang Shilun. (2020). Research on the Application of Blended Teaching in the Course of "E-Commerce Fundamentals" in Secondary School [D]. Guangdong Technical Teachers' University, 2020(12).

Jiang Yujun,Bai Xuemei,Wu Wenchen,Luo Xiaojuan. (2019). Exploring the structural relationship between factors influencing online learning experience[J]. Modern Distance Education,2019(01):27-36.

Guo Lingjie. (2019). Research on learners' online learning power and its influencing factors in live web teaching [D]. Huazhong Normal University,2019.

Wu Bojing. (2013). Design and implementation of a live remote video and interactive learning platform [D]. Huazhong Normal University, 2013.

Xu Ke. (2018). Study on strategies to improve learning satisfaction in online university courses: a questionnaire survey based on NJAU[C]. Nanjing Agricultural University, 2018.

Wang Zhaogun. (2007). Exploring the key factors affecting the effectiveness of online learning [D]. East China Normal University, 2007.

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