



Innovative research on the "Internet +" teaching model of medical colleges under the background of 5G in Nanyang Medical College

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Abstract

In recent years, internet technology has been developed rapidly, among which the teaching mode of "Internet + education" is currently receiving extensive attention and have been successfully applied in all aspects of the vocational colleges. In addition, applying network hardware equipment, teachers' network skills, students' independent learning ability to the course of higher vocational education is the current mainstream trend, and improve network hardware equipment, teachers' network skills, students' independent learning ability education in the school is also one of the current hot topics. However, there are still many deficiencies in the existing online media literacy educational mode that await to be solved. In view of the facts mentioned above, in-depth investigation will be conducted on the main problems existing in the traditional mode of graduate network media literacy education in higher vocational school. As a result, constructive suggestion will be given on new higher vocational educational network media literacy educational mode. The new mode which based on big data analyze can better integrate the school network resources, improve the students' ability which search information through surfing the internet as well as meet the needs of students.

Keywords: vocational colleges, Internet + education, educational administration, education management, online teaching.

Chapter I Background Statement

The new crown pneumonia has triggered a public health emergency, which has brought major threats to the lives and economies of people all over the world. Facing the severe international situation, major colleges, and universities across the country, under the leadership of the Party Central Committee and the Department of Education, are earnestly protecting and putting the health of teachers and students first. At present, my country's new crown epidemic prevention work has achieved remarkable results, and the local transmission chain has basically been cut off. In the current new stage of "normalization" of epidemic prevention and control, the exploration of the new model of "Internet + education" has become the focus of the education reform of various colleges and universities. This research takes teachers and students at Nanyang Medical College as the research objects and combines the existing teaching model to explore a feasible new model of normalized education reform for epidemic prevention.

Chapter II Literature Review

"Internet + education" is an emerging education model that combines the development of the Internet and the education field with the rapid development of network digitization today. According to the data in the "47th Statistical Report on Internet Development in China" released by the China Internet Network Information Center, as of December 2020, the number of Chinese Internet users is 998 million, of which 986 million are mobile phone users, and among the netizens use mobile phones to surf the Internet. The ratio is 99.7%. This research uses "Internet + education" as the key word, and searches 29,219 journal articles in CNKI. According to CNKI's intelligence statistics, as shown in Table 1, it is found that the research has surged from

Year	1995— 2014	2015	2016	2017	2018	2019	2020	2021
Quantity/Article	1168	1257	3546	4568	5331	5951	5643	1744

Table 1 Statistics on the number of papers in "Internet + Education" research journals from 1995 to 2021

2015 to 2017. It reached its peak every year and tended to grow steadily (see Figure 1). In order to make the research more authoritative, the papers analyzed in this literature review are 2,733 academic papers published in core journals out of 29,219.

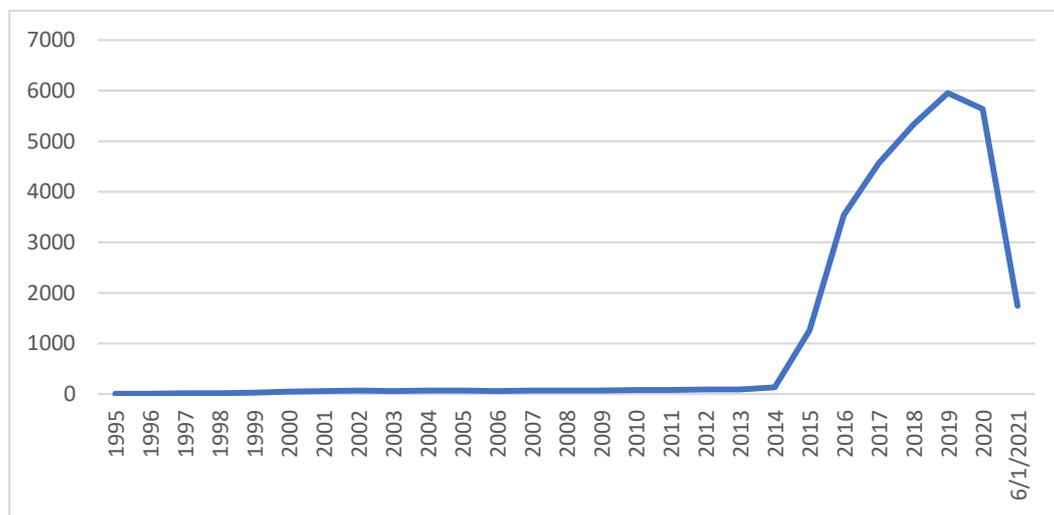


Figure 1 Statistics on the number of annual academic journal articles published in the "Internet + Education"

According to statistics, it covers 20 research fields such as education theory and education management, higher education, news communication, economics, and trade, as shown in Figure 2. Among them, academic papers on education theory and education management are the most published, accounting for 34.58% of the total. This type of research and research topics of higher education, vocational education, secondary education, medical education, and medical marginal subjects (2085) and the educational model reform of this article in agreement, the literature review mainly focuses on the analysis of the papers in this part.

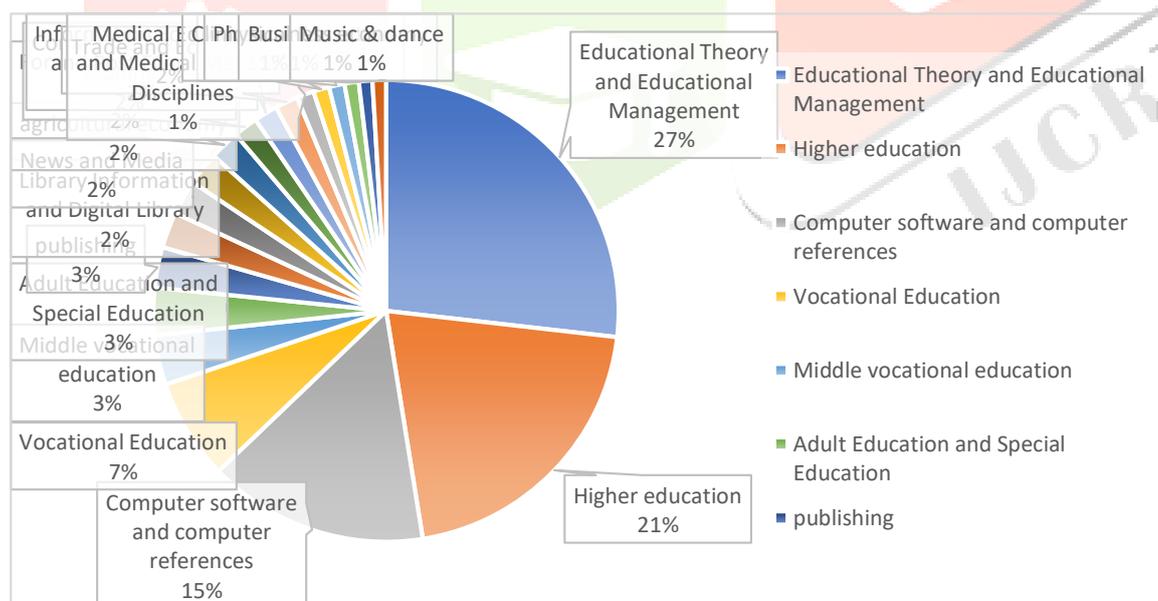


Figure 2 Distribution map of research fields covered by the "Internet + Education" thesis

In the context of "Internet +", students' autonomous learning, Zhu Meng, Liu Ping, and Shi Junqing investigated the autonomous learning ability of Yuncheng Nursing Vocational College students and found that students using the Internet to carry out autonomous learning requires students to formulate corresponding learning goals, Detailed learning plans and improve their self-control; teachers are required to be familiar

with online teaching software, and to strengthen communication and guidance with students; schools need to improve network hardware equipment and optimize the network teaching environment. (Zhu Meng, 2021)

In terms of the feasibility of constructing the "Internet +" education model, Kang Pinfang and other scholars analyzed the results of the "Internet +" new comprehensive teaching model and the traditional teaching model through a comparative research method and found that students can apply through the Internet media. Improve students' theoretical and technical performance, enhance the interest of learning, effectively break the limitations and deficiencies of traditional models, gain more recognition, and are worthy of promotion in teaching reform. (Kang Pinfang, 2021) Scholars such as Meng Fanling believe that in the period of epidemic prevention and control, there are mature "Internet +" teaching platforms such as Huawei Cloud, Tencent Live Broadcast, China University Muke Network, Chaoxing Learning Link, Dingding Teacher and Student Live Group, etc. , The online wisdom education model needs to be organically combined with traditional teaching, to give full play to the advantages of the "online" and "offline" education models, to innovate the O2O teaching model, to strengthen the relationship between the individual and the group of students, and to promote the relationship between teachers and students and students. Interaction between teachers and teachers. (Meng Fanling, 2020)

In order to further study the research status of "Internet +" teaching management in medical vocational colleges, in the 2085 papers that have been summarized, an advanced search is carried out by using "Internet +" education and "medical colleges" as keywords. 134 papers were retrieved. Through the analysis of the research content of these academic papers, the research of "Internet +" teaching in medical schools has achieved certain results. Especially during the epidemic prevention and control period, the "Internet +" teaching has made great progress. Development and promotion. Research scholars have accumulated experience in the Internet smart classroom for political education and professional education and surveyed teachers, students, and schools, and found that the professionalization of teachers' network urgently needs to be improved. In order to adapt to the "Internet +" teaching model of online smart education, teachers It is necessary to realize the "independent growth" of the individual and the "team resonance" of the teacher collective and the teacher and the school, to promote the simultaneous development of the individual and the group. (Zhou Rujun, 2018)

Chapter III Methods and Materials

3.1 Research method design

This article aims to analyze the current situation of the implementation of "Internet +" teaching in medical schools under the normal situation of epidemic prevention and control, that is, the construction of the teaching environment of medical colleges and related majors under the "Internet +" teaching model, the software application capabilities of professional teachers, and online teaching resources The construction of the network and the effect of students' online learning. This paper conducts a questionnaire survey by sampling, analyzes the collected data, and gives practical solutions based on the results of the data analysis.

3.2 Research questionnaire design

In this study, the questionnaires for students were distributed randomly on the spot. For three consecutive weeks, the questionnaires were randomly conducted at the entrance of the school cafeteria from 4:30-6:00 pm every Wednesday; the questionnaires for teachers were three consecutively. Zhou, taking advantage of the large class break between 9:40-10:00 in the morning every day, in the teacher's lounge, we randomly conducted a questionnaire survey on the teachers who were resting during the break. After obtaining the consent of the respondents, the questionnaire was filled out, and then the questionnaire was filled out. The collected questionnaire data are counted, analyzed, and sorted one by one.

The questionnaire is divided into teacher questionnaire and student questionnaire. A total of 45 teacher questionnaires were distributed, and 45 were returned, and 45 were all valid questionnaires; 119 questionnaires were distributed to students and 119 questionnaires were returned, all of which were valid questionnaires. The response rate of the questionnaires And the effective rate is 100%.

Questionnaire type	Distribute the questionnaire	Recycle the questionnaire	Recovery rate	Effective number of copies	Efficient of
Teacher questionnaire	45 servings	45 servings	100%	45 servings	100%
Student questionnaire	119 servings	119 servings	100%	119 servings	100%

Table 2 Statistics of distribution and recovery of questionnaires

After sorting out the collected questionnaire data and analyzing the reliability of SPSS25.0, the overall reliability coefficient of the questionnaire is 0.906, which shows that the questionnaire is credible.

3.3 Implementation status of "Internet +" teaching in medical colleges

3.3.1 The current situation of network teaching environment

Under the normal background of epidemic prevention and control, to ensure the smooth development of online teaching, the school has continuously increased its investment in the construction of online teaching hardware and software. In terms of hardware construction, the school completes the campus network to ensure that the computers in every classroom on the campus are connected to the campus network. Each teacher's work number and student's student number can be logged on to the campus network, which is convenient for teachers to use the network to integrate the courses into video and interactive and other elements, the class is livelier and more interesting.

At present, the school has a total of theoretical teaching classes, and each classroom is equipped with multimedia equipment, desktop computers, etc. The construction of these equipment can better improve the network teaching environment. There are studios on the three campuses of the school, which can be used by teachers to record multimedia courseware and high-quality courses, which can be broadcast live, or recorded and edited before being broadcast to students.

In terms of software, based on the existing online teaching software, the school chose the two software Dingding Teachers and Students and Chaoxing Xuetong. One month before the start of school in February 2020, all teachers and students were trained in the use of the software at different levels. In the online teaching for more than a year, the teachers combined the advantages and disadvantages of the software, used Dingding Teachers and Students, Chaoxing Learning Link, and combined with the Chinese University Student Mu Class Network to carry out theoretical and practical training. The team, combined with the characteristics of the profession, integrates the original teaching resources, and prepares many online courseware, micro-classes, short videos, question banks, etc., to ensure that teachers and students can learn and understand online more vividly.

3.3.2 Analysis on the Status Quo of Teachers' Network Teaching Ability

In a survey of 45 teachers, as shown in Table 3, it was found that 10.09% of the teachers were already very familiar with online teaching before the outbreak, and recorded or used online teaching elements in the teaching process; 24.4% of the teachers had some knowledge of online teaching Knowing and recording high-quality lessons; 60.0% of teachers have only heard about online teaching, and have not really made any

attempts; only 6.7% of teachers don't know anything about online teaching and don't use the Internet at all. Teaching software.

	Very Understanding	Relatively Understanding	General Understanding	Not Understanding
Online Teaching	8.9%	24.4%	60.0%	6.7%

Table 3 Understanding of “Internet +” teaching and “Internet +” teaching design

However, when answering the questionnaire "Do you think online teaching is necessary?", more than half of the teachers think that online teaching is very necessary in the development of teaching models, and 42.22% of teachers think it is more necessary, as shown in Figure 2. As shown, this shows that most teachers believe that "Internet +" education is the development direction of future education.

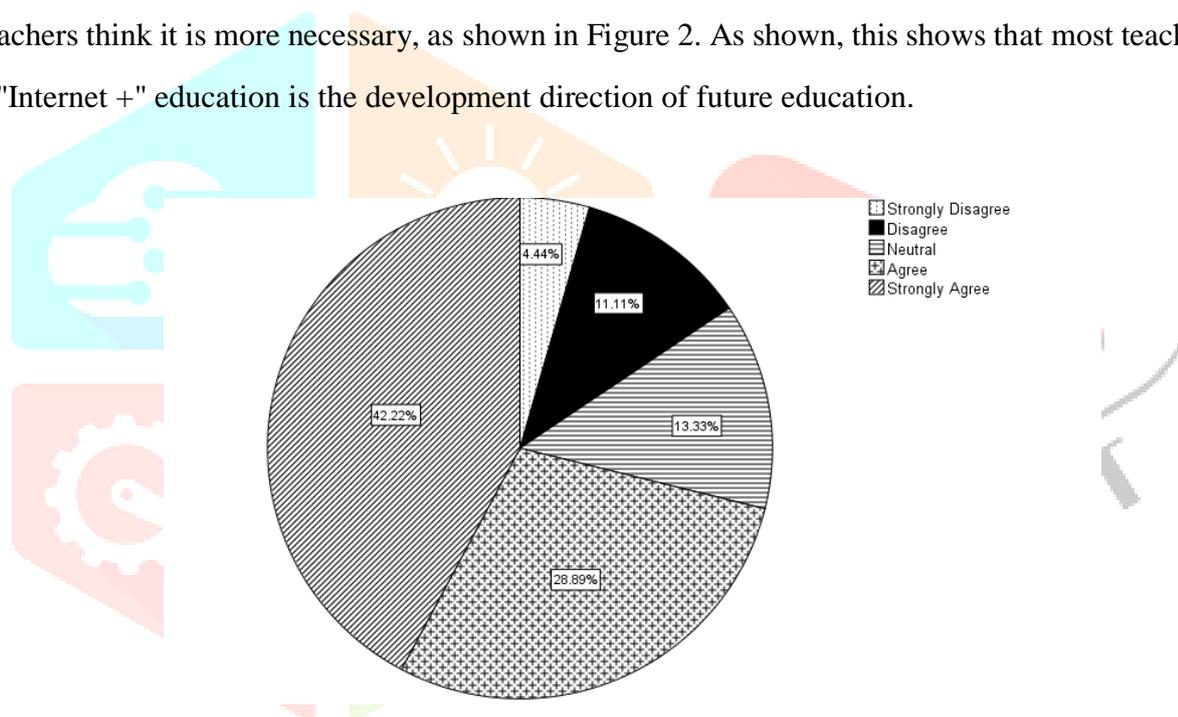


Figure 2 Teachers' awareness of the importance of “Internet +” education

After online teaching in the spring of 2020, both students and teachers have a certain understanding of online teaching. After a questionnaire survey by teachers, data analysis through SPSS25.0, as shown in Figure 3, 55.56% of teachers in the current normalized teaching of epidemic prevention and control, network elements are still used for teaching. For example, some teachers use Xuetong to take exams; some teachers use Dingding teacher and student groups or Xuetong to upload video and film materials, which is convenient for students Preview and review. This shows that more and more teachers are actively using network elements in knowledge teaching.

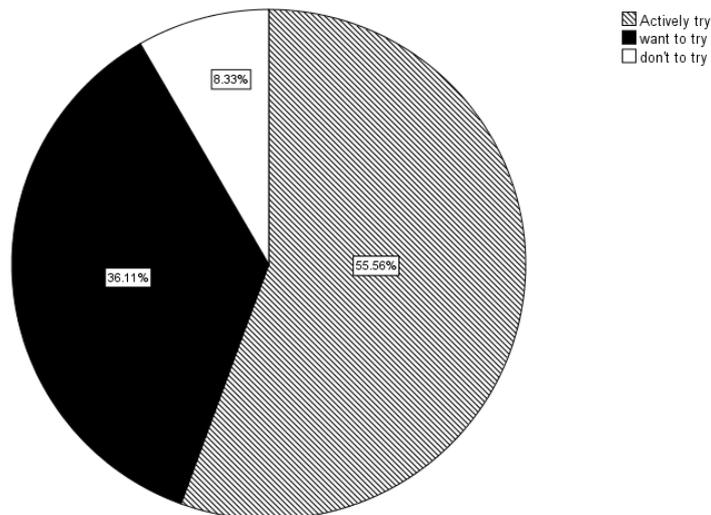


Figure 3 Implementation enthusiasm of “Internet +” teaching

"Internet + teaching" is a long-term process of development and improvement. This kind of online teaching model does not simply use a network platform to transplant the traditional teaching model to online teaching courses. This requires teachers to be familiar with and make good use of network information technology and collect statistics on the mastery of network information technology applications in the questionnaire. The results are shown in Table 4. It can be seen that more than 92% of teachers are proficient in Word or WPS, PPT, Internet search information, projectors, and classroom multimedia equipment, but only 26% of teachers, that is, most young teachers, are familiar with Photoshop, video processing, and animation. Software for production and web page production can be mastered proficiently. In summary, teachers' network technology level is in urgent need of improvement, not only the production of text and courseware, but also the production of videos, animations, and pictures, to truly realize the operability of online teaching.

Network technology skills	Very proficient	Relatively proficient	Normally proficient	Not very good	Not at all
multi-media equipment	89%	6%	2%	2%	1%
projection	72%	10%	8%	6%	4%
Microsoft or WPS	92%	7%	1%	0%	0%
Image processing software	23%	12%	42%	15%	8%
Video processing software	10%	18%	52%	14%	6%
Animation software	9%	15%	38%	22%	16%

Table 4 Information technology application level of Teachers

At present, the school also pays special attention to the training of teachers' "Internet +" teaching ability. It organizes network software operation training and regularly learning every year and encourages teachers to participate in off-campus training. After questionnaire surveys, statistics show that almost all teachers have Received training in online teaching. However, most of the videos, pictures, animations, audios, etc. in the existing courseware (PPT) are from the Internet and the supporting materials of the teaching materials, as shown in Figure 4, and then combined with their own teaching ideas to make electronic teaching plans.

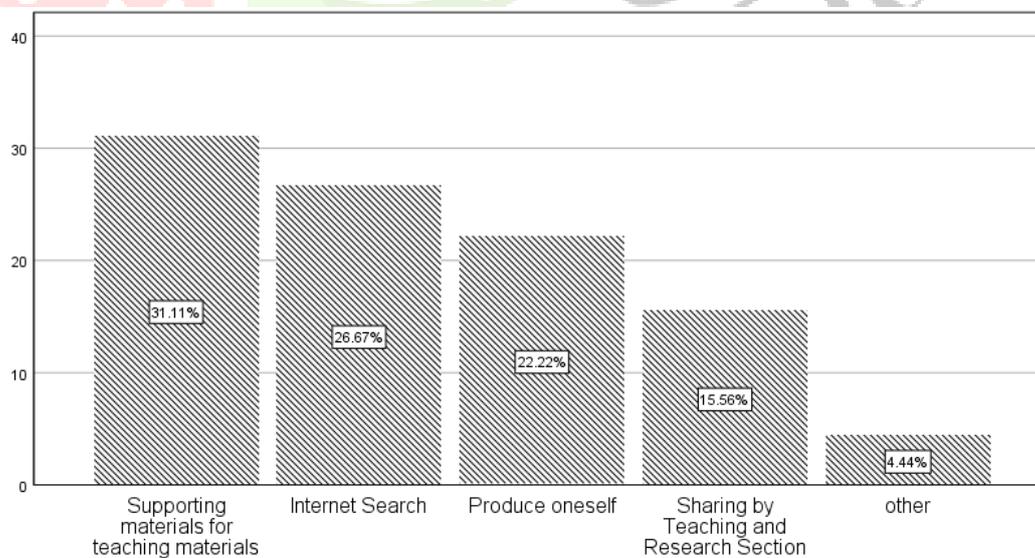


Figure 4 Source of teaching resources

3.3.3 Analysis of the effect of the current situation of students' online learning

Using SPSS25.0 to sort out and analyze the 119-questionnaire data collected from students, the results are shown in Figure 5. Only 19.33% of students are very satisfied with the way of online teaching, and more students think that online teaching is better than traditional teaching. Insufficient interaction. When using computers, iPad, and smart phones for online learning, it is easy to be interfered by other apps. Compared with traditional teaching, learning self-discipline needs a greater improvement to ensure that classroom learning can be completed with peace of mind. Therefore, as shown in Figure 6, only 23.53% of students like online learning very much.

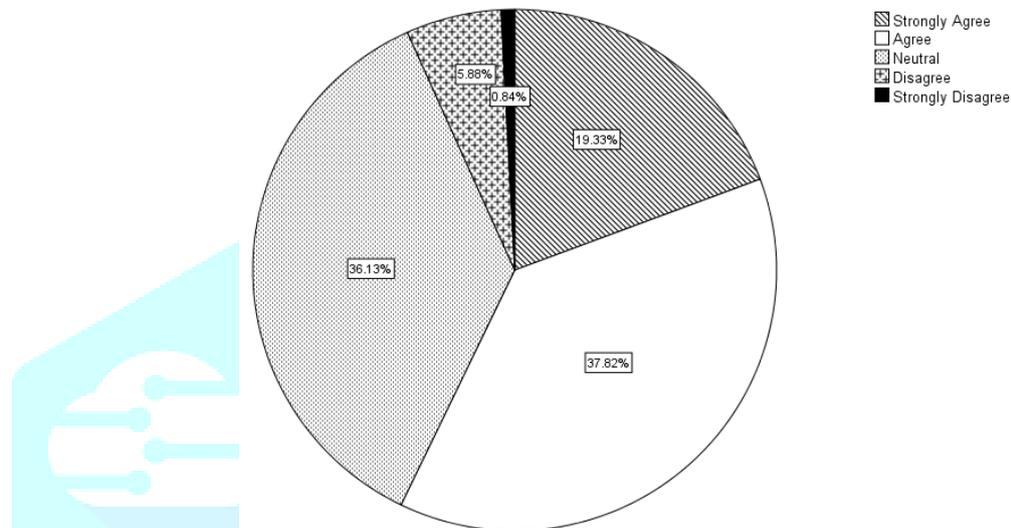


Figure 5 Students' overall evaluation of "Internet +" teaching

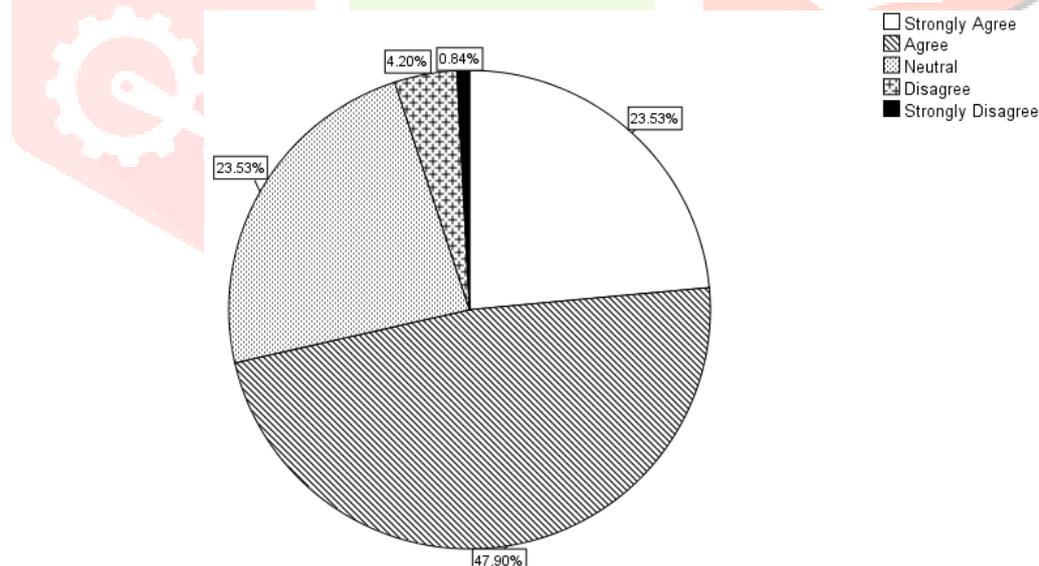


Figure 6 Students' liking degree of "Internet +" teaching

However, statistical data shows that, as shown in Figure 7, more than 79% of students are curious and confident in the form of online learning. Since online learning can be watched repeatedly, the teacher has made more effort to help students better understand the difficulties and key points of knowledge. Patience and use multimedia such as videos and animations to explain, so that the knowledge points can be better understood. The normalization of "Internet +" teaching will make learning livelier and more interesting, and

the teaching effect will be better.

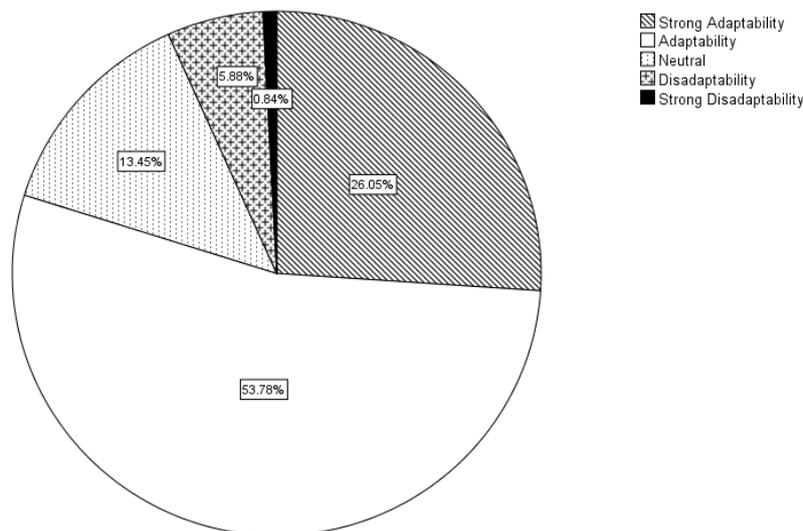


Figure 7 Students' adaptability to "Internet +" teaching

	Strong Agree	Agree	Neutral	Disagree	Strong Disagree
Prefer traditional teaching	35.16%	17.56%	20.52%	12.82%	13.94%
Inconvenient terminal learning	1.09%	5.23%	23.67%	45.96%	24.05%
Poor self-control	5.00%	38.72%	27.56%	14.18%	14.54%
Less interaction	1.06%	2.96%	5.08%	76.46%	14.44%
Few online learning resources	1.96%	8.56%	18.48%	62.68%	8.32%
Free learning environment	39.87%	36.58%	16.18%	5.86%	1.51%

Table 5 Reasons affecting the use of Internet platform for learning

In the process of online learning, as shown in Table 5, 35.16% of students said that they are not suitable for the new learning platform when they are doing online learning. For example, after the mobile phone number is changed, the learning pass cannot be logged in, and the Dingding group of teachers and students needs to be replaced. 1.09% of the students said that there is a lack of smart terminals, which cannot guarantee that several children at home can learn online at the same time. However, 39.87% of students believe that online learning is not constrained by traditional classrooms, and that they are free to understand the content, and they can also watch online classes repeatedly to deepen their understanding of knowledge points without being restricted by time. At the same time, as shown in Figure 8, only about 5% of students do not pay

attention to the content that they do not understand online, and more students do not repeatedly look at the course review or the teacher's electronic courseware and materials, or search for information on the Internet. Or use instant messaging software such as QQ and WeChat to discuss with classmates. This shows that online learning will enhance students' ability to learn independently and become the cornerstone for the smooth development of the "Internet +" education model in the future.

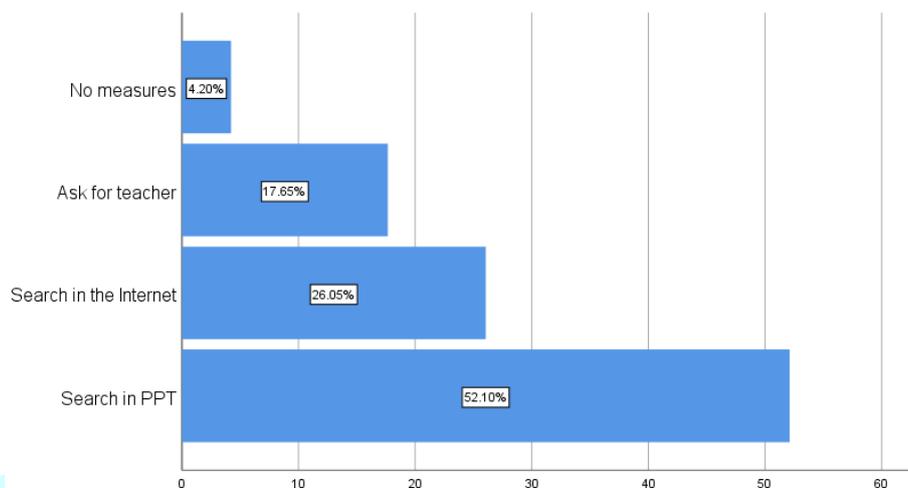


Figure 8 Measures taken by students when they encounter difficulties

Chapter IV The disadvantages of the Internet + education model

There are not only theoretical courses, but also practical training courses for medical majors. It requires a combination of theory and practice to learn. Take the course "Basic Nursing" with spare beds, intravenous infusions, vital signs measurement, etc., which not only require Theoretical knowledge requires continuous practice to improve the skills and understanding of theoretical knowledge. When conducting a questionnaire survey for nursing students, it was found that using online learning methods, students would repeatedly watch the practice teaching videos uploaded by the teacher on the network platform before practice, and then enter the training room to perform operations after reading them. The mistakes in own operation and the way of diverting practice can also make the experiment teacher pay attention to every student, and further enhance the interest and self-confidence of the students in practice. However, it is inevitable that there will be students who are not very autonomous in learning. If the teacher does not supervise, they will use their mobile phones to view the content of other unrelated courses, resulting in an incomplete understanding of theoretical knowledge and a decline in interest in learning. In the face of these problems, to promote the teaching model of "Internet +" education, it is necessary to summarize the shortcomings of online teaching in existing research and research and put forward practical and effective solutions.

4.1 The hardware architecture of "Internet +" teaching is not mature enough

At the beginning of 2020, the new crown epidemic has swept the country. Under the guidance of the Ministry of Education to suspend classes and not stop schooling, schools at all levels across the country have adopted the online teaching model. Online teaching and online learning have become the teaching mode during the epidemic. Each school has to ensure "The smooth development of "Internet +" teaching has improved the hardware of network teaching to varying degrees. However, to improve the quality of network teaching in an all-round way, hardware facilities need to be improved, which is mainly reflected in the following two aspects.

1. The training room needs to add multimedia

In the school, there are computers and multimedia in the administrative classes of theory courses, but there is no multimedia in the training room. The training teaching is mostly operated by the teacher first, and then the students operate in groups. When the teacher is operating, the students gather around to observe, but the most recent one Students in the circle can see clearly, but other students can't see clearly. Some students who are not motivated to study will stay in the corner and play with mobile phones. If there is multimedia equipment, you can project the operation demonstration of the experiment teacher to the big screen or monitor. Students can see clearly from their seats, which is convenient for students to improve their practical ability.

2. Promotion of training simulation software

Medical professional training is skill training about patient health. Special simulation software is needed to evaluate each operation of students. Although there are special simulation evaluation instruments for cardiopulmonary resuscitation and intravenous infusion, such instruments are expensive, and it is relatively large and not easy to promote. It is urgent to find or design new simulation software and install it on students' mobile phones or computers in the training room, which is convenient for students to operate and use.

4.2 Insufficient teachers' network teaching ability

1. Insufficient understanding of "Internet +" teaching

Among the teachers interviewed, 23% believe that the current epidemic has been brought under control, offline teaching can be carried out, and traditional teaching is more familiar and convenient, and they are unwilling to add network elements to teaching activities. This shows that many teachers still hope to use traditional teaching methods for teaching and are unwilling to try the "Internet +" teaching model.

2. Insufficient mastery of "Internet +" teaching technology

For teachers who have been teaching for many years, they already have their own complete teaching plans and teaching methods for professional knowledge. For adding animation, video, or web information to PPT (electronic teaching plans), they need to master some software processing techniques, because some teachers Slightly older, lack of mastery of network technology, unable to add "Internet +" elements in the teaching process.

4.3 Insufficient ability of students to learn independently

At present, smart phones are like a double-edged sword. Whether it is traditional offline teaching or online teaching, teachers' teaching and students' listening to lectures will be interfered by smart phones. In the traditional teaching process, to improve students' autonomous learning, The ability of students will be used in the class as a unit to centralize their mobile phones during class, thereby improving the ability of students to learn independently. However, the terminals of online learning are computers and smart phones, and without the supervision of teachers, they are more susceptible to interference.

Chapter V Implement countermeasures and practice

At present, in view of the obstacles and problems in the current development of the "Internet +" education model, from the aspects of improving hardware configuration, teachers' network teaching ability, network teaching resource integration, students' network independent learning ability, etc., combined with the current network teaching practice, The smooth promotion of the "Internet +" education model in the future puts forward the following strategies.

5.1 Improve the hardware configuration the network teaching environment

Curriculum education in medical schools is carried out simultaneously with theoretical and practical courses. The Internet can combine the latest clinical experience with teaching in real time, to change the problem of slight differences between previous learning and practice. Using the school's three affiliated hospitals as training network resources, building an Internet channel between the hospital and the school, combined with multimedia, enables students to experience the seriousness and sacredness of real medical care, treatment, or rescue in the training room, thereby enhancing students' sense of professional belonging and Pride.

5.2 Increase technical training and enhance teachers' network skills

At present, the school has paid attention to it and has carried out regular training of teachers' network skills. However, the level of mastery of network skills by teachers is not the same. It is necessary for the school to investigate and grade the teachers' Internet teaching skills before launching the training. In this way, targeted

training can be provided, and at the same time, the effect of training can be improved more efficiently.

Online teaching skills training can also increase the importance of the teacher's "Internet +" education. It is not simply putting traditional courses on the Internet, but based on understanding the characteristics of the Internet, reconstructing the teaching process so that the teaching content is both Keeping pace with the times, but also interesting.

5.3 Integrate network information and increase network resource construction

Complete and abundant teaching resources are the foundation for the smooth development of online teaching. Each professional teaching and research section of each department needs to set up a small team according to the department, major, grade and other factors to be taught to integrate network resources together. At the same time, each teaching and research section should cooperate with the school's three affiliated hospitals or school-enterprise joint medical units to jointly develop a network resource library based on current clinical practice. The network teaching resources integrated through multiple channels will be screened in the team to encourage teachers We record high-quality classes, build a platform for sharing high-quality educational resources, and share online teaching resources with other medical schools.

On the basis of sufficient online teaching resources, the materials are divided into lectures, pre-class promotion, after-class tutoring, etc., to truly create an "Internet +" education model.

5.4 Enhancing the fun of online classes students' self-discipline ability

At present, many students and teachers believe that online learning is due to the relatively free learning environment and insufficient supervision of online learning, and the self-control of independent learning is not strong. Faced with such problems, students cannot blindly ask students to enhance their self-discipline ability. It is necessary to enhance the fun of online courses based on the characteristics of the Internet, which is the basis for improving students' self-discipline ability.

The interestingness of online courses, for example, aseptic preparation before surgery is a very important course for nursing students, but there are few daily contacts. It would be boring to watch only the instructional videos and operating procedures, but the use of the Internet Features: Through short videos before class, students realize that aseptic preparation before surgery is very important, and they are curious about aseptic operation, based on the theory in the course, and cooperate with the affiliated hospital in the training class to let students understand the current situation. The process of aseptic operation and interaction at the same time enhance the students' desire for hands-on operation. After class, use the training evaluation software to improve their skills, which is interesting and enhances the students' ability to learn independently.

Chapter VI Summary and outlook

6.1 Research summary

"Internet +" education has become the direction of future teaching development. Especially affected by the epidemic in recent years, teaching has been combined with the Internet to suspend classes worldwide. With the network teaching hardware construction and software development, there have been great improvements. To create online education that meets the characteristics of the Internet and promote students' independent learning ability, the article conducts investigation and research through multiple latitudes. A summary and analysis of the results of the research data found that the current implementation of "Internet +" education has four obstacles: insufficient hardware, weak teachers' Internet awareness and skills, insufficient online teaching resources, and lack of self-control of students' online learning. These four obstacles are addressed in response to these deficiencies. A proven solution.

6.2 Research Outlook

Today, with the rapid development of network information, making full use of network technology to transform the traditional offline classroom education model is a very serious challenge for schools, teachers, students, and parents. How to improve students' ability to learn independently and improve teaching Effect is also the core issue of future teaching that is considered by many parties. The "Internet +" education model requires teachers and students to grow together. It is an issue worthy of in-depth discussion by scholars from the Internet, education, and management circles. The academic development and practice of online learning are jointly explored.

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