Under the background of big data - investigation and research on the learning effect of college students' dual-track system

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Abstract. The pneumonia epidemic caused by the new coronavirus is spreading around the world, and the national epidemic situation is complicated and severe. At the same time, in order to implement the guidance of the Ministry of Education during the period of prevention and control of the new coronavirus epidemic, "suspend classes without teaching, and without stopping learning". Computer technology has played a huge role in the absence of on-site and offline surveys. Our group generated electronic questionnaires through computer technology, successfully digitized paper surveys, and adopted rigorous survey methods. Through Sina Weibo, WeChat, Tencent QQ Share and complete the questionnaire with the students, strictly review the IP address, and eliminate the invalid answer sheet, there are 600 valid questionnaires in total. Finally, the computer data analysis software-spss is used to clean and analyze the data, and finally obtain the analysis results of the sample data, and also ensure the authenticity of the survey results. Prior to this, we adopted an exact proportion of single and double selection questions and subjective question types. Through comparative analysis and cross-analysis, the interference of huge data on the later survey results was greatly reduced, and the accuracy of the survey was ensured. Based on this, it is believed that the online teaching platform should establish a rich knowledge database to provide students with some resources outside the classroom, which can mobilize students' interest in learning, and at the same time, it should have a more complete evaluation system, so as not to increase students' inertia. Furthermore, since it is an efficient and fast teaching method, it should not be used by some people, but more or all teachers should be familiar with and adapt to this teaching mode as soon as possible.

Keyword: contrastive analysis, cross analysis, hybrid mode.

1. Introduction

With the situation of epidemic, it is a significant practice for some universities to ensure the teaching schedule by combining online and more universities will adopt this approach in the future. As mentioned in traditional education method, we can conclude it in face-to-face education. The most significant advantage of online education is that it breaks through the geographical and time constraints of reality and you can enjoy learning from the comfort of your own home, saving time and effort. Saving time and effort generally means eliminating the step of commuting on the road.

However, the disadvantage of online education is that it is not as effective for the general education of the masses. The reasons are the following: online education lacks the compulsion of offline education. As we all know, face-to-face education is compulsory, since it is forced to get everyone together in a specific classroom for learning, and you cannot do anything unrelated to studies due to the on-site supervision of the teacher. The limitation of face-to-face teaching mode can not interfere with online education, and even though online education now has more camera equipment for supervision, cheating can easily happen. In recent years, higher education has been a major trend for to be delivered online. Many university courses abroad are delivered online ,and the overall effect can be guaranteed, with the technology keep improving, the learning experience for students receiving online tuition. It is believed that the impact of the epidemic will gradually increase the overall proportion of online courses delivered by universities in China in the future.

However, the temporary replacement of traditional face-to-face teaching with online teaching in response to the epidemic has led to a series of discussions about the benefits of online teaching and whether it can be replaced by online education. Online teaching platforms provide an online virtual

teaching environment for teachers and students, eliminating the constraints of physical space and enabling online discussion, communication and testing, and are an essential means of supporting classroom teaching.

2. Methodology and Analysis

2.1. SPSS

SPSS for Windows is a combined software package that combines data entry, collation and analysis functions in one package. Users can select modules according to their needs and the capabilities of their computer in order to reduce the requirement for the system hard disk capacity and facilitate the promotion of the software.

The primary functions of SPSS include data management, statistical analysis, graphical analysis, output management, etc. SPSS for Windows is straightforward, intuitive, easy to learn and easy to use, and can directly read EXCEL and DBF data files, and is now available on computers with various operating systems.

2.2. Questionnaire

2.2.1 Subjects and Scope of the Survey

Undergraduate students of all disciplines nationwide.

2.2.2 Data Analysis

(1) Description of Survey method and data quality

To ensure the quality of the survey, we set up specific and representative questions based on a full understanding of online teaching and traditional classroom teaching, and conducted a questionnaire survey on university students in various universities, using Weibo, WeChat and QQ to share the questionnaire with students. There were 600 valid questionnaires, students can fill in the questionnaire online; each completed questionnaire had a unique IP address, and once was selected from the same source to prevent some students from filling in the questionnaire multiple times and having duplicate results, thus making the survey results more general and authentic.

(2) Teaching of Teachers

a) Issues that teachers should be concerned about when online classes are in progress

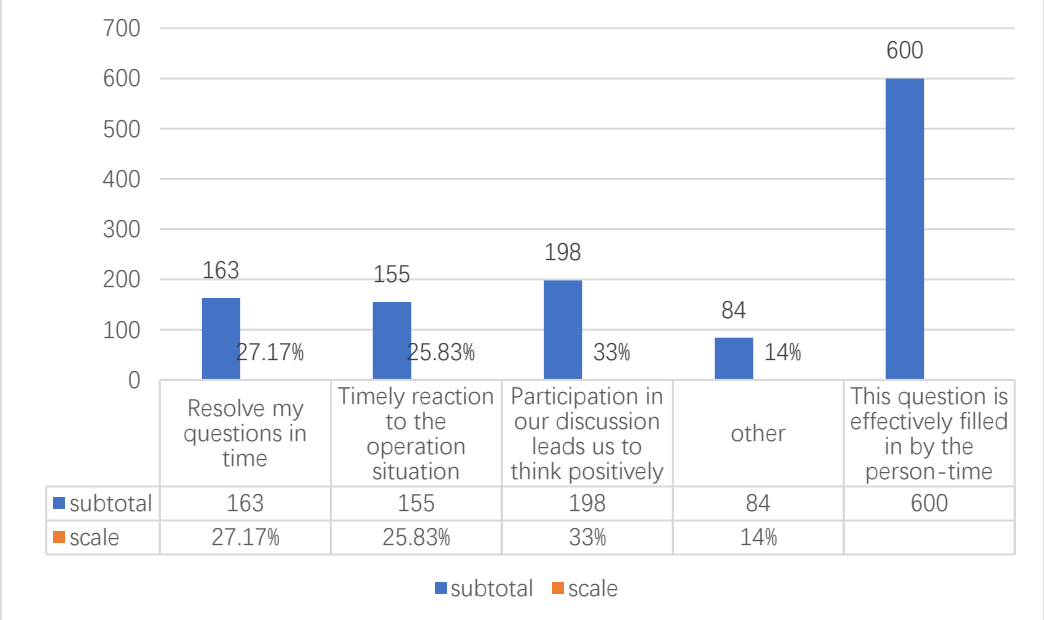

Figure 1. Analysis of students' needs for teachers in online course learning

As shown in Figure 1, in online learning, more students want the teacher to participate in our discussion and guide us to think positively, with the number of students reaching 198, accounting for 33% of the total weight, followed by the hope that the teacher can solve the problems I raised in a timely manner and reflect the homework in a timely manner, accounting for 27% and 25% of the total respectively. The other factors only accounted for 17% of the capacity. None of these figures differed by much, and excluding the other factors, the numbers were above 150 for the remaining three. Most students are unable to complete the online course on their own, and currently online course students are learning on their own, encountering problems and not having the appropriate materials presented to assist their learning, and lacking in self-control. The presentation of the online courses is also relatively homogeneous, all of which is inseparable from the teacher's teaching. It is clear from this that in online classes, teachers should pay more attention to students' learning than in offline classes, identifying problems and solving them in a timely manner.

b) Analysis of the role of the teacher in the online classroom (cross-tabulation)

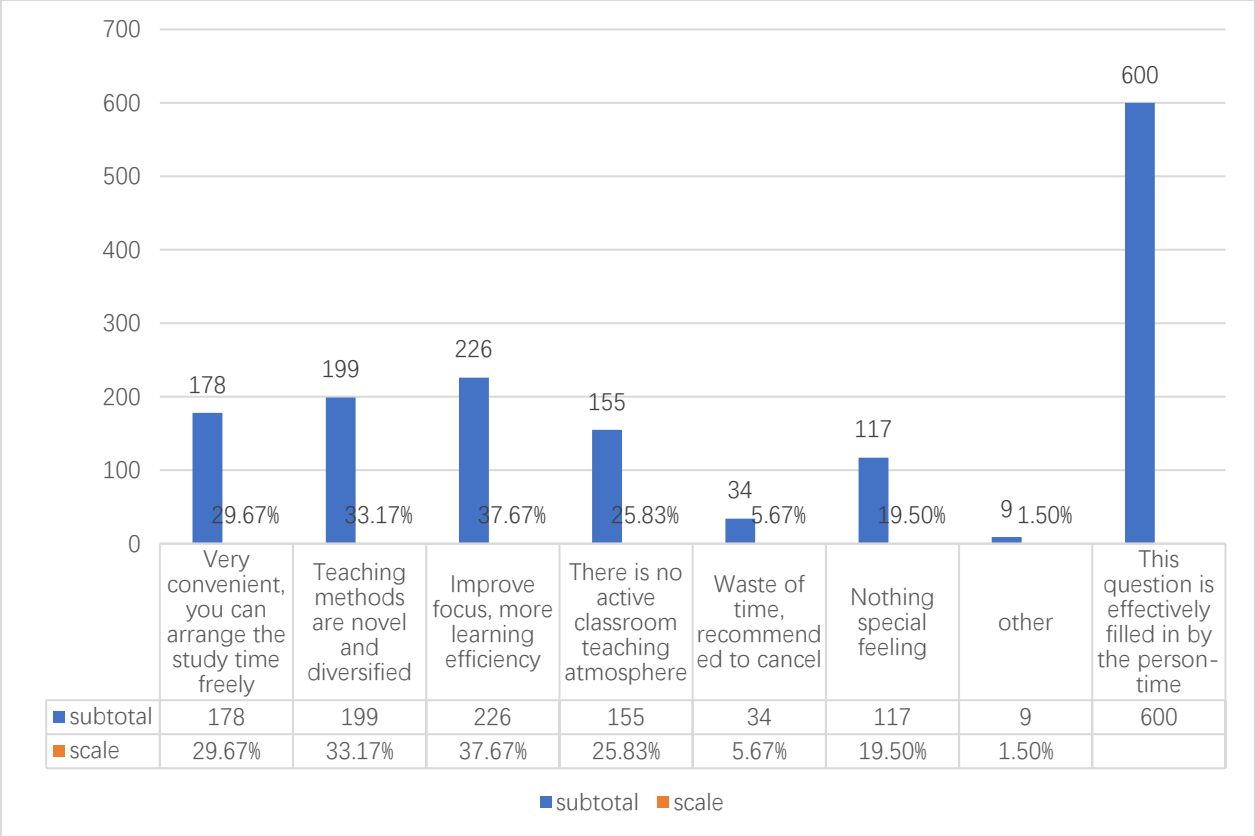

Figure 2. Analysis of students' perceptions of online courses

From the analysis of Figures 1 and 2, the teacher plays a key role in whatever kind of classroom. The contemporary university students are more exposed to new things, independent in their thinking and pursuit of individuality, and are not susceptible or blind to the views of teachers and others, and are willing to put forward their own creative ideas, which are also very much in line with the trend and characteristics of the function of today's times. In online classes, teachers should pay more attention to students' learning and development than in offline classes, and identify and solve problems in a timely manner.

(3) Learning of Students

a) Analysis of the problem of students brushing up on their lessons in online classes

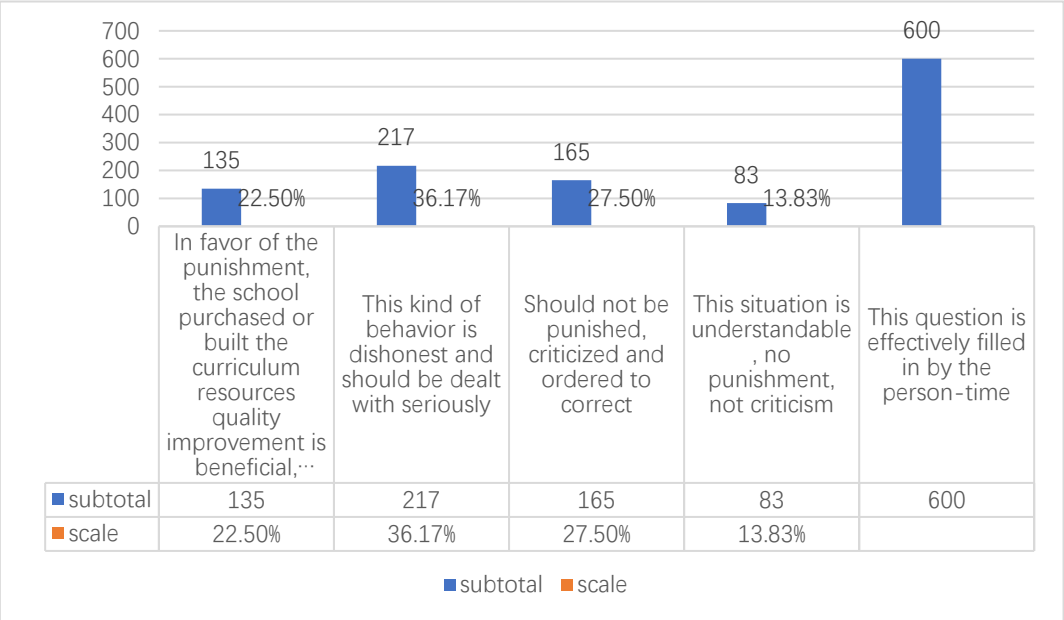

Figure 3. Students' perceptions of being disciplined for passively swiping classes to mix credits

As shown in Figure 3, the online courses that have emerged in recent years, whether they are catechism courses introduced by schools or elective online courses, have gained a lot of popularity among university students. However, the phenomenon of "brushing off" online courses in some universities has led to the creation of intermediaries who provide aggregation services for students to "brush off" their courses. The company's main goal is to provide a comprehensive range of services to the public. The students should be punished in accordance with the principle of "breach of integrity". To address this phenomenon, solutions need to be found at the root of the problem. While strengthening management and supervision is one aspect, the key is improving the courses' quality and attractiveness.

b) Analysis of students' attention span in online courses

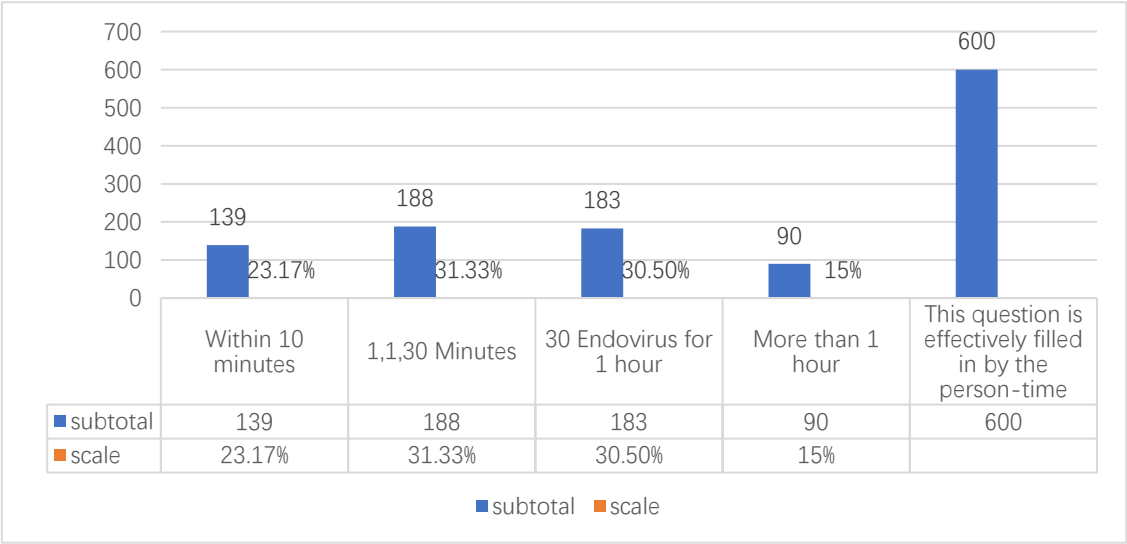

Figure 4. Analysis of students' attention span in online courses

From Figure 4, we can see that only 23.17% of the students in the traditional classroom method focused on listening to the lecture for less than ten minutes, while 86.83% of them listened carefully for more than ten minutes, and 45% of them focused for more than thirty minutes, which is one half

of the bonus, indicating that the traditional classroom method can make most of the students focus on listening carefully. In the new way of online classes, 56.5% of the students were able to concentrate for less than thirty minutes, while only 43.5% were able to listen carefully for more than thirty minutes, which is a significant decrease compared to the traditional way of classes, indicating that the way of online classes still has a little defect compared to traditional classes.

c) Analysis of students' learning effectiveness in online courses

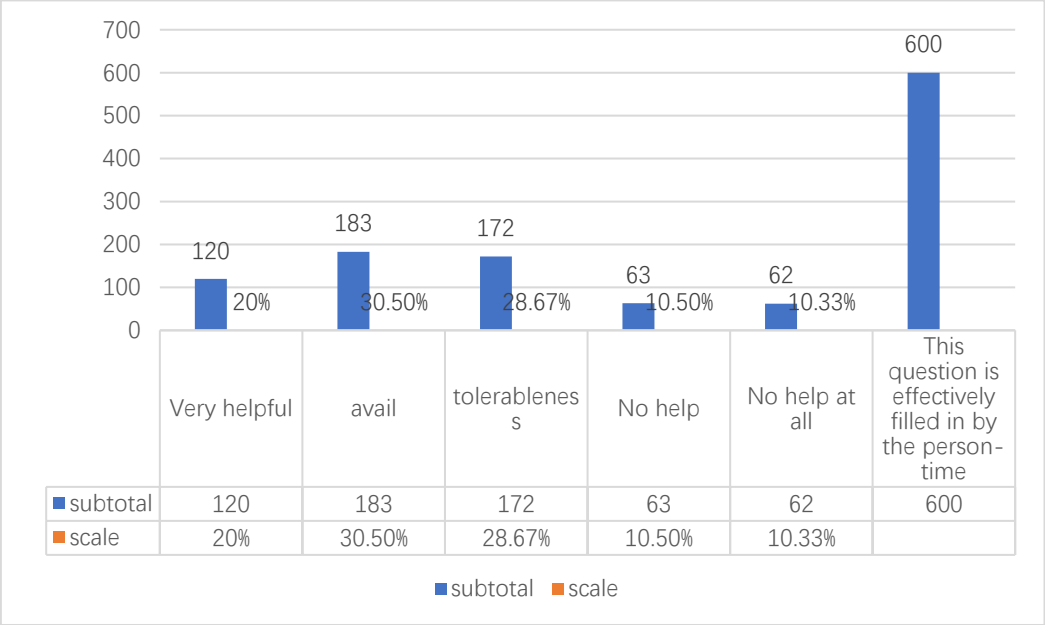

Figure 5. Analysis of the effectiveness of online courses in improving learning skills or increasing theoretical knowledge

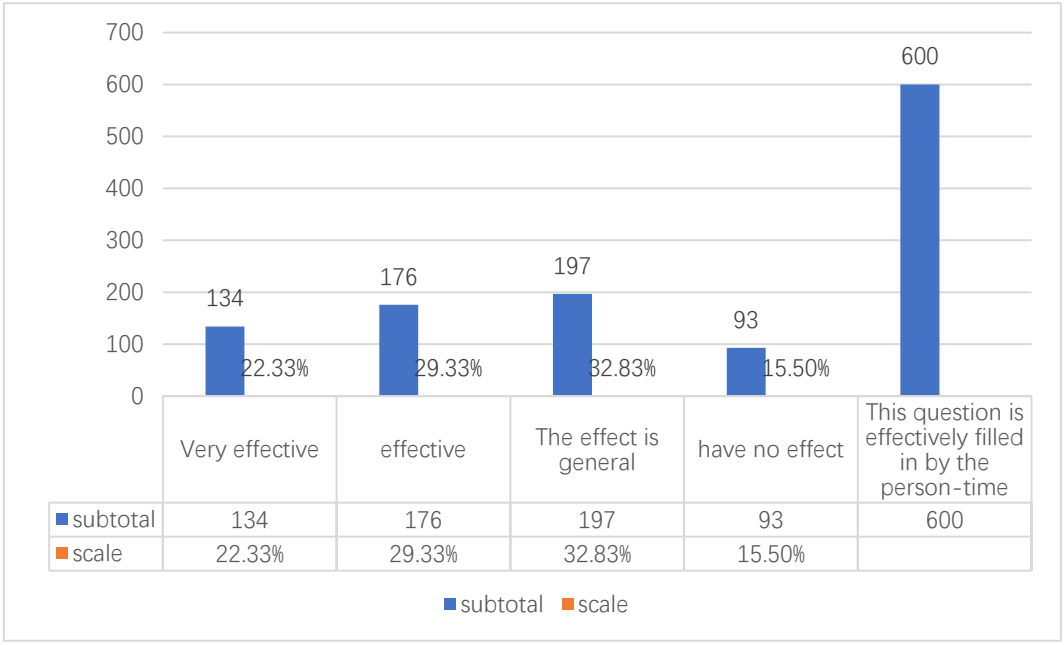

Figure 6. Analysis of the effect of the exercises and tasks in the online course on the detection of learning status

As can be seen from Figure 5, the highest percentage of students (30.5%) thought that learning online courses helped them improve their learning skills or increase their theoretical knowledge, while a higher percentage of students (28.67%) thought that they were OK, 20% thought that they were very helpful, 10.5% thought that learning online courses did not help them improve their

learning skills or increase their theoretical knowledge, and 10.33% thought that they were not helpful at all. 10.33% of the students thought that it was not helpful at all. The analysis of the differences in the above data shows that the majority of students recognize online courses and feel that they have an impact on their learning and are helpful; however, some students think that online courses are not helpful or even not helpful at all, which also indicates that there are still some problems in the online courses themselves that need to be improved, and not all students can accept and adapt to online courses.

As can be seen from Figure 6, 32.83% of the students thought that the online course had relevant exercises and tasks that were generally effective in testing their learning status, 29.33% thought they were effective, 22.3% thought they were very effective, and 15.5% thought they were not effective. The above data analysis shows that the highest proportion of students considered that the exercises and tasks in the online course were generally effective in detecting learning conditions, followed by those who considered them effective and very effective, while fewer students considered them ineffective. In other words, the majority of people can test their own learning through the tasks in the online course, perhaps because of the single perspective of the questions in the exercises, but the students achieve different results, while a small number of people also have the problem of not being able to test their own learning through the tasks in the online course.

3. Conclusion and suggestions

1. Students in class

You should not go to class with the intention of gaining credit and should complete the assignments assigned by the teacher carefully. If you do not listen carefully in class, then completing your work in class will require you to reinforce your knowledge again, even if it is pre-reading. This can be beneficial in a number of ways, allowing us to be 'proactive' in our knowledge and to use good quality work after class to earn ourselves higher marks. Keep up with your teacher, some teachers are very interactive and if you can take advantage of this, you can force yourself to concentrate on the one hand, and on the other hand your teacher will actually take notes if you answer questions positively. If you are usually a student who never answers questions in class, you can seize this opportunity to exercise yourself, only with text, or voice, is better than answering questions in the classroom in full view of the public, in fact, answering questions is not so embarrassing, many students may not be listening to the class, simply will not pay special attention to you.

2. Network function system

The online teaching platform should be a perfect combination of educational psychology, educational technology, network technology and network visual art aesthetics, plus course content. It should therefore create a rich database of knowledge and provide students with some resources outside of in-class learning; it should be able to mobilize students' interest in learning, and at the same time it should have a more complete evaluation system so that students are not inert and enhanced. Since it is an efficient and effective way of teaching, it should not be used by some people, but by more or all teachers as soon as possible.

3. Teachers' work

Teachers are the guiding lights of students' development and play a significant role in fostering their all-around development. However, the status of teachers in China is not high, and the quality of their work needs to be improved. This requires the state to strengthen the management of the construction of online classes, to run distinctive and high-level teacher training colleges and universities for teacher training, and to provide more and better teachers for the education sector, including online education. At the same time, optimize teaching resources, complete good video updates in a timely manner, and organically combine various teaching videos to form a grid of teaching resources beneficial to students, thus enhancing their enthusiasm for learning.

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