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Analysis of Differences in College Students' Learning Effects between Online and Offline Teaching Modes

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Abstract: With the development of information technology, online teaching is becoming increasingly popular in college students' education, which forms a diversified teaching system together with offline teaching. This paper analyzes the learning effect of college students in the mode of online and offline teaching, from the aspects of learning investment, time, concentration, participation, and knowledge mastery. By using the method of comparative research, the author puts forward a perfect method, aiming at improving the initial effect of college students' learning and solving some problems in the learning effect caused by the single teaching mode.

Keywords: College students; Learning effect; Online; Offline; Differences

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1. Introduction

Relying on the rapid development of the Internet, online teaching breaks the boundaries of time and space and provides a new way for college students to learn. After years of precipitation, the offline teaching mode, with its unique advantages of face-to-face interaction, still occupies an important position in education. The in-depth exploration of the differences in college students' learning effects under the online and offline teaching modes is helpful for educators to accurately grasp the teaching direction and provide strong support for improving the teaching system and teaching quality.

2. Multi-dimensional differences in college students' learning effects

2.1. Differences in learning engagement

In the online learning environment, there is no strong learning atmosphere in the traditional classroom. Students do

not focus on the lecture together and actively interact, which is difficult to stimulate students' learning enthusiasm and competitive consciousness. Online learning mainly relies on students to arrange their own learning time and progress, and lacks real-time supervision and management by teachers. Some students are prone to procrastination, laziness, and other behaviors, resulting in insufficient learning input. While watching online courses, some students frequently switch pages to check social information, play games, etc., and are unable to fully devote themselves to their studies.

In the offline classroom environment, students learn together in the same space, and each other's focused attitude and positive performance will form an invisible pressure and motivation, prompting students to be more engaged. Teachers can timely pay attention to students' learning status through eye contact, classroom questions, and other ways, remind and supervise students who are not paying attention, and improve students' learning engagement. In the classroom discussion, students actively participate and have a collision of ideas, which enables them to understand and master knowledge more deeply, and their learning involvement is significantly higher than that of online learning.

2.2. Differences in learning time

Online learning time has a strong flexibility; students can choose their study time according to their own life and study arrangements, which is very convenient for some students with special circumstances or personal habits. Students who often stay up late can study at night when they are full of energy and schedule other activities during the day. However, this kind of flexibility also easily leads to the fragmentation of learning time. Students may use spare time, such as recess and lunch break, to study, and each study time is short, which is difficult to form a systematic learning process and is not conducive to in-depth understanding and mastery of knowledge. Due to the lack of clear time limits and regular learning arrangements, some students may have insufficient learning time, and the total time may be less than that of offline learning.

The time for offline learning is fixed and focused, usually arranged according to the school schedule, with a clear class time and recess time each day. This arrangement is in line with the learning habits and biological clocks of most students, and can help students establish a stable learning rhythm and ensure sufficient learning time. Students attend classes on time every day and have a proper rest time in the middle of each class, which is conducive to students maintaining a good learning state and improving learning efficiency. Moreover, fixed learning time is also convenient for teachers to carry out teaching management and organize teaching activities.

2.3. Differences in learning concentration

When learning online, students face many distractions. In the family environment, there may be interference such as family activities and TV sounds, which can easily distract students. In the online world, social media, online games, and short videos are full of various temptations, and students are easily affected by these factors in the learning process, resulting in a decline in learning concentration [1]. Network problems are also an important factor affecting the concentration of learning. Network instability, stutters, network interruptions, and other situations will interrupt students' learning ideas, affect the coherence and fluency of learning, and make it difficult for students to maintain a high degree of concentration. When some students watch live online courses, the sound and picture are not synchronized due to the network delay, and they need to constantly adjust and wait, which affects their learning

concentration and experience.

The offline learning environment is relatively quiet, and the school's classrooms, libraries, and other places have a good learning atmosphere, which can reduce external interference. In class, teachers can directly manage students' learning behaviors and timely stop unfocused behaviors such as talking to each other and using mobile phones to ensure that students can focus on learning content. Face-to-face teaching enables students to feel the teaching charm and knowledge attraction of teachers more intuitively, which helps to improve students' learning concentration. In the experimental class, students focus on the experimental operation, observe the experimental phenomenon, and deeply understand the experimental principles and knowledge under the guidance of the teacher, with a high concentration on learning.

2.4. Differences in learning engagement

The interactive ways of online learning are relatively limited, mainly through bullet screen, message, even chat, and other ways of interaction, which are not as good as offline learning in real-time and cannot achieve positive interactive effects. Some students may be worried about network problems, embarrassed to speak, and other reasons, and have low enthusiasm to participate in interaction, resulting in low participation in learning [2]. Group cooperation in online learning is difficult, communication between members is inconvenient, and it is difficult to carry out effective collaboration and communication, which affects students' sense of participation. In some online discussions, students simply express their views, lack in-depth discussion and communication, and fail to give full play to the advantages of interactive learning.

In offline learning, there are frequent interactions between teachers and students and between classmates. In class, students can raise their hands at any time to ask questions and have face-to-face communication with teachers. In group discussions, students sit together and are able to fully express their ideas, listen to the opinions of others, and solve problems together. This rich and diverse interactive way can stimulate students' learning interest and enthusiasm, and improve students' learning participation. In the classroom debate activities, students actively participate and express their opinions. Through fierce debate with opponents and close cooperation with teammates, they not only deepen their understanding of knowledge but also improve their communication skills and teamwork ability.

2.5. Differences in knowledge mastery

Due to the lack of face-to-face interaction and timely feedback in online learning, students may encounter difficulties in the process of understanding knowledge and cannot get timely guidance and help from teachers, resulting in deviations in understanding. Although online teaching platforms usually provide functions such as course playback to facilitate students' review, students may lack systematic and targeted review, do not know the key points and difficulties, and the review effect is poor [3]. When learning some abstract concepts and theories, students may not be able to fully understand them through online courses, and they do not communicate with teachers in time, resulting in a poor grasp of knowledge.

In offline learning, teachers can adjust teaching methods and progress in time according to students' responses and questions in class to help students better grasp knowledge [4]. In the review stage, teachers will systematically sort out knowledge points, emphasize key points and difficulties, provide students with targeted review guidance, and

help students build a complete knowledge system and improve knowledge mastery. In the review class, teachers help students consolidate what they have learned and deepen their understanding and memory of knowledge by explaining typical examples and having students summarize knowledge.

3. Strategies to improve college students' learning effects

3.1. Constructing a mixed teaching mode

The blended teaching mode organically integrates the advantages of online and offline teaching to maximize the teaching effect. In terms of time allocation, teachers can upload pre-made teaching videos on online teaching platforms such as Superstar Learning Pass, which cover the basic concepts, principles, and other basic knowledge of the course, and set corresponding online tests, so that students can check their mastery in time after learning. In class, students are divided into groups to carry out in-depth discussions on difficult problems in online learning. Representatives from each group are elected to make speeches, and teachers make comments and summaries. In this way, students' thinking can be stimulated and their learning participation can be improved. In terms of content arrangement, the content with strong theory and fixed knowledge points is suitable for online teaching. Students can watch the teaching video repeatedly to deepen their understanding of the knowledge. For the practical content such as experiment class and course design, which requires on-site demonstration and guidance, offline teaching mode should be adopted so that students can master the skills in actual operation [5].

3.2. Improving students' autonomous learning ability

Teachers can guide students to make scientific and reasonable learning plans, arrange daily learning time and tasks reasonably, make weekly learning plans according to the class schedule, reasonably allocate tasks such as preview, review, homework, and reading relevant materials to daily time, and strictly follow the plan. Teachers can also encourage students to develop the habit of regular summary and reflection, summarize their learning situation every week, analyze their problems and shortcomings in the learning process, and timely adjust learning methods and strategies. Students set clear learning goals and incentive mechanisms to motivate themselves, break big goals into small goals, and give themselves a small reward for completing each small goal. Students participate in study groups, supervise each other with classmates, create a good learning atmosphere, and improve their self-discipline.

3.3. Optimizing the allocation of teaching resources

Schools and teachers can collect and sort out all kinds of high-quality online teaching resources, combine the actual teaching situation of schools and teachers' teaching experience, develop teaching resources with the characteristics of the school, integrate these online and offline resources, and establish a unified teaching resource library, which is convenient for students to obtain and use at any time. When explaining abstract theoretical knowledge, online animation demonstration, virtual simulation experiment, and other resources can be selected to help students better understand and master the knowledge. In the practice of teaching, we can make full use of the school's laboratory, practice base, and other offline resources, so that students can improve their ability in practical operations. For students with strong learning ability, we can provide some advanced academic research reports, relevant materials of

discipline competitions, and other expanded learning resources to meet their learning needs. For students with learning difficulties, we can provide some basic knowledge explanation videos, tutoring materials, etc., to help them fill the knowledge gaps and improve their academic performance.

4. Conclusion

Through the above analysis, it can be seen that although online teaching has high flexibility, it is often insufficient in learning engagement, concentration, and participation, and the effect of knowledge mastery is easily affected by the lack of interaction. With good classroom atmosphere, real-time supervision, and frequent interaction of teachers, offline teaching has outstanding performance in learning commitment, concentration, and knowledge mastery, but it is not flexible in time arrangement. Constructing a mixed teaching mode, improving students' autonomous learning ability, and optimizing the allocation of teaching resources can narrow the gap between them to a certain extent and improve the overall learning effect.

Disclosure statement

The author declares no conflict of interest.

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