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The Influence of Digital Teaching Process on College Students' Learning Performance

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Abstract: With the popularization and application of computer network in all kinds of education, digital learning has gradually become an important learning mode for college students in all kinds of schools in China. Based on this, this study attempts to investigate the influence of digital teaching process on college students' learning performance. The survey results show that the realization of digital teaching environment has changed the traditional relationship between teachers and college students. Compared with traditional teaching, the use of digital resources in teaching can stimulate college students' interest and improve their concentration time. Through the guidance of teachers, college students' two kinds of attention can be coordinated and alternated, so as to improve their attention to knowledge. College students who adopt digital teaching rate the tutors, and the results show that learners are very satisfied with the tutors' guidance. The realization of digital teaching environment enlarges the scope of college students' knowledge acquisition, and college students can easily acquire all kinds of knowledge they need through the network, and store, process and share it.

Keywords: Digital Teaching; College Students; Learning Performance.

1. Introduction

Innovation begins with finding problems. The premise of research learning, inquiry learning and cooperative learning is that college students can find problems or solve problems raised by teachers. The search and utilization of network resources is the most widely used and efficient problem-solving method [1]. Digital academic resources refer to all kinds of academic resources existing in the network, as well as knowledge acquisition technologies or websites that provide help for the acquisition of these resources, such as academic search and knowledge navigation, and of course, include various levels of document guarantee service systems that provide integrated services. With the popularization and application of computer network in all kinds of education, digital learning has gradually become an important learning mode for college students in all kinds of schools in China.

The characteristics of college students' cognitive development stage restrict teaching, and teaching must adapt to the level of college students' cognitive development. At the same time, college students' cognitive development should also be regarded as a teaching goal, which can promote the improvement of college students' cognitive level through the implementation of teaching, so as to realize the spiral development of college students' cognitive development level in the implementation of teaching [2-3]. Based on this, this study attempts to analyze the influence of digital teaching process on college students' learning performance through investigation and research.

2. Teaching in Digital Environment

In the digital teaching environment, how to deeply integrate information technology with classroom teaching has become an urgent problem to be solved. Education and teaching based on network digital technology is the core of digital campus, which mainly includes: establishing multimedia network education system, which is not only to digitize textbook knowledge, but also to reorganize and reform the curriculum system scientifically. A new curriculum teaching system developed through knowledge innovation project is an effective supplement and extension to classroom education [4]. Establish interactive online education resources, research and develop the knowledge base of major disciplines or subject groups, build various online teaching courses and material libraries, build virtual or simulated experiments according to the characteristics of courses, design a series of teaching software, and build a massive data warehouse of teaching resources. Teaching management will realize digitalization and informationization, and comprehensively manage college students' learning situation, teachers' teaching situation, teaching resources, teaching equipment and educational information through the network.

The realization of digital teaching environment has changed the traditional relationship between teachers and college students. Teachers take the initiative to teach, and college students passively accept the change to a teacher-led learning model with college students as the main body. In the past, teachers held an absolute leadership position, and they taught college students what to learn. College students have no extra channels to acquire knowledge after class, which leads to their limited thinking ability [5-6].

The digital educational environment requires necessary multimedia computers and networks, and the educational content should be completely digitized to provide learners with a complete knowledge system. On this basis, real talents should also create what they have learned and form a more beneficial power output for society, and so on. Therefore, changing the traditional teaching mode is an inevitable choice.

3. Digital Teaching Design

3.1. Autonomous Learning Mode

Constructivism believes that knowledge is not acquired by teachers, but by learners in certain situations, with the help of others and the necessary learning materials, through the way of meaning construction [7]. Therefore, the effective

development of autonomous learning, collaborative learning, inquiry learning and other learning modes in the digital environment is conducive to giving full play to the subjectivity, initiative and creativity of college students, and cultivating their thinking ability, learning ability, creativity and awareness and methods of lifelong learning.

Autonomous learning refers to a learning mode in which learners determine their own learning goals, choose their own learning methods, monitor their learning process and evaluate their learning results [8-9]. Autonomous learning requires learners to determine their own learning goals, and teachers can also help them to determine their own learning goals. Learners can choose their own learning content and learning tools for autonomous learning. After autonomous learning, learners can discuss with others to understand the problems existing in their learning process and the learning effect, and summarize the learning situation. Finally, they can learn from what they have learned through practice, testing and practice.

Autonomous learning can give full play to learners' subjective initiative. Learners can choose interesting content and appropriate tools according to their own needs, and freely arrange the learning progress, which is conducive to the development of learners' personality and specialty, the construction of learners' knowledge, the improvement of learning efficiency and the cultivation of innovative ability.

3.2. Smart Classroom Teaching Mode

Smart classroom breaks through the time-space boundary between teaching and learning, establishes an information-based learning environment that can be controlled by online and offline, schools and families, meets the individualized discussion, experience and learning of college students, and realizes "everyone can learn, learn everywhere and learn at all times". Smart classroom is divided into two parts according to space: on-campus and online. On-campus is the actual classroom, while online is the virtual classroom. According to time, it is divided into three periods: before class, during class and after class. The process of intelligent classroom teaching mode under the network digital environment is shown in Figure 1:

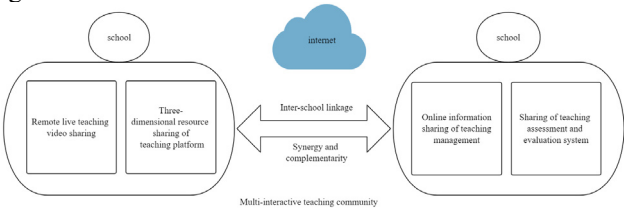


Figure 1. Smart classroom teaching mode and process under the network digital environment

Before class, teachers prepare lessons collectively and then prepare lessons for the second time, so as to determine teaching by learning. According to the learning content, teachers plan courses, make micro-lessons and design autonomous learning task lists, and then push these learning resources to college students in advance by using the cloud platform. Teachers can master the learning situation of college students through real-time feedback on the online education platform, and understand the difficult problems and online communication encountered by college students in the learning process, so as to readjust the key points, difficulties and doubts in the next day's classroom teaching and better let college students internalize and construct their knowledge.

Create a good learning situation in class, stimulate college students' interest in learning and form learning motivation; Prompt the clue of the connection between old and new knowledge, and help college students to contact and think; You can participate in organizing discussions and exchanges, and guide the learning process to develop in a direction conducive to meaning construction. And ask questions in time to lead the discussion deeper. For the dynamic resources generated immediately in the teaching process, teachers should be able to keenly capture and make rational use of them.

After-class content is rich, which is composed of "famous teacher lecture hall", "elite forum" and "learning community", which opens up online learning space and extends from school to family and from actual classroom to virtual classroom. The online test provided by the digital teaching platform can timely and accurately feedback the learning situation of college students. On the basis of scientific analysis of the feedback information, teachers can make appropriate adjustments to teaching. The information and questions obtained by college students in the process of learning may become excellent resources for knowledge construction, and the mastery of them in teaching depends on the ability of teachers.

4. The Influence of Digital Teaching Process on College Students' Learning Performance

4.1. Improve the Attention of College Students

Attention is the ability to direct and concentrate psychological activities on certain objects. Attention has the function of selecting objects, maintaining and controlling psychological activities in a certain direction and goal. In the experiment of the influence of digital learning on college students' attention, we use the methods of questionnaire survey, interview with college students and teacher observation to investigate the changes of college students' attention during the learning process. After investigation, 60 valid questionnaires were collected, and the statistics of each option are shown in Table 1.

Table 1. Survey data results

question option	A	B	C	D
1	46.9	34.4	14.8	3.9
2	49.2	37.9	9.9	3.0
3	52.2	38.8	6.4	2.6
4	20.2	61.3	9.5	9.0

Compared with traditional teaching, the use of digital resources in teaching can stimulate college students' interest and improve their concentration time. Through the guidance of teachers, college students' two kinds of attention can be coordinated and alternated, so as to improve their attention to knowledge.

In addition, through teachers' observation and interviews with college students, we find that digital learning does play a role in promoting and improving the attention of college students because of the use of multimedia teaching resources such as video and audio.

4.2. Improve Teaching Satisfaction

In order to verify the author's conjecture more accurately,

the author analyzes whether the learners' experience and effect in the whole learning process are related to the learning style from the results of the digital teaching satisfaction questionnaire filled out by learners after the experiment. Figure 2 is the questionnaire results of digital teaching satisfaction.

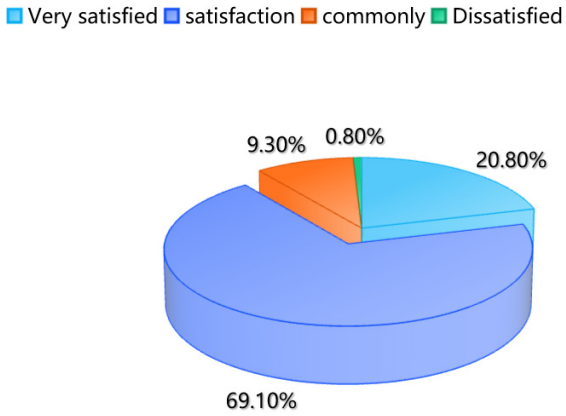


Figure 2. Questionnaire results

College students who adopt digital teaching rate the tutors, and the results show that learners are very satisfied with the tutors' guidance. From the learning satisfaction, we can see that the teaching method of digital teaching is conducive to the communication of college students of various majors. In the production process, college students can get in touch with knowledge outside their own knowledge fields, which is conducive to mutual help and learning among college students. The mutual communication between peers is conducive to college students' exposure to different professional knowledge and its application in teaching.

4.3. Improve the Learning Effect

From the descriptive analysis in Table 2, it can be seen that the average performance of digital learning of college students is 3.865, indicating that half of college students think that digital teaching is better than traditional offline learning. From the perspective of technical environment, 85% and 83.2% of college students think that network performance and technical support will promote effective learning, which fully shows the basic role and important influence of technical environment in distance learning.

Table 2. Descriptive analysis

project	mean value
Digital learning performance	3.865
network performance	0.85
technical support	0.832
learning experience	0.757
College students actively participate	0.854
College students' autonomous learning	0.785
Technical proficiency of teachers	0.813
Teachers' teaching methods	0.7
Teacher evaluation method	0.741
Teachers maintain order.	0.818
Supporting teaching resources	0.827

The realization of digital teaching environment enlarges the scope of college students' knowledge acquisition, and college students can easily acquire all kinds of knowledge they need through the network, and store, process and share it [10]. College students' acquisition of knowledge is no longer single, and they no longer need to listen to teachers and professors' step by step. On the contrary, they can choose learning time and learning content according to their own time situation, and their learning methods become very flexible. In addition, learners can record their own learning conditions through the network, such as learning time, progress, wrong questions, etc., so that learners can constantly understand their own situation and their shortcomings in the process of learning and correct them in time.

5. Conclusion

The realization of digital teaching environment has changed the traditional relationship between teachers and college students. Compared with traditional teaching, the use of digital resources in teaching can stimulate college students' interest and improve their concentration time. Through the guidance of teachers, college students' two kinds of attention can be coordinated and alternated, so as to improve their attention to knowledge. College students who adopt digital teaching rate the tutors, and the results show that learners are very satisfied with the tutors' guidance. The realization of digital teaching environment enlarges the scope of college students' knowledge acquisition, and college students can easily acquire all kinds of knowledge they need through the network, and store, process and share it. College students' acquisition of knowledge is no longer single, and they no longer need to listen to teachers and professors' step by step. On the contrary, they can choose learning time and learning content according to their own time situation, and their learning methods become very flexible.

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