The improvement of students' academic level and comprehensive quality under the perspective of CTCL (learning technology)

Haixi Guo, Shasha Liu

School of Information Science and Technology, Yunnan Normal University, Kunming, 650500, China

Abstract: With the development of society, the implementation of technology in education has received more and more attention. However, the implementation effect of technology in education is not ideal, mainly due to the lack of effective management and support for the implementation of technology. Based on the CTCL horizon, this paper discusses how to improve the implementation effect of technology in education to improve learners' academic level and improve their comprehensive quality. Firstly, this paper analyzes the research status of learning technology at home and abroad. Secondly, this paper introduces the implementation effect of technology in education, and analyzes the factors affecting the effect of technology implementation. Finally, this paper summarizes the importance of improving the implementation effect of technology in education, puts forward the method of improving technology implementation effect in education, including establishing effective management mechanism, provide effective technical support, improve teachers 'technology application ability, improve the students' technology use ability, and looks forward to the future development trend.

Keywords: learning technology (CTCL), learning style, academic level, comprehensive quality

1. Introduction

With the development of science and technology, the application and implementation of technology in education has received more and more attention. In the modern information technology environment, the learning technology that focuses on the development of learners has become the new pursuit of more and more educational technology researchers. Many emerging technologies have been widely used in education, such as online learning and intelligent teaching. However, the effect of technology implementation in education is not ideal, mainly due to the lack of effective management and support for technology implementation. Therefore, it is necessary to explore how to improve the effect of technology implementation in education, so as to improve the academic level of learners and improve their comprehensive quality[1]. The basic goal of the combination of technology and education is to cultivate and develop students' abilities in all aspects. The "technology" here includes both physical and chemical technology and intelligent technology. Educational technology research, as the core issue of technology-facilitated learning (Technology Enhanced Learning), has been widely concerned by the academic community, but its progress is not satisfactory. So, how to improve the efficiency of technology use in education? How to improve the implementation effect of technology in education and then use technology to improve learners' academic level and improve their comprehensive quality?

2. Research status

Many research results at home and abroad show that the effect of technology in promoting learning is not ideal.

Domestic scholars Dong Yuqi dong and his team put forward the learning technology (CTCL) paradigm: learning technology (CTCL) paradigm to explore in culture (Culture) vision, integration technology (Technology), learning content (Content) and learners (Learner), through technical support to improve the academic level of learners, and learners of critical thinking, collaboration ability, creativity and other comprehensive literacy [2]. The proposal of this paradigm brings new directions for technology-promoting learning. The highest pursuit of technology in promoting learning and research is the improvement of academic achievement, which includes not only academic performance and subject literacy with domain particularity, but also includes domain common comprehensive literacy (such as

critical thinking, collaboration ability, creativity, etc.). The Learning Technology (CTCL) paradigm understands the ultimate goal of "human development" as "realizing the overall self-development of learners and establishing the awareness of lifelong learning"[3].

Based on CTCL paradigm, the learning technology research team found that personalized learning supported by technology is a new trend to promote student development ; The core value of technology promoting learning research is to reveal the mechanism and mechanism of technology to improve learning effect to promote student development, solve the real educational problems, describe the future picture of teaching and learning in the technical support environment, point out the direction for education research and educational practice ; follow the paradigm, follow the cognitive starting point of learners, design the teaching based on the cognitive starting point; build the technical support system to carry out personalized learning[4]. Promoting cognitive development is a key mechanism that is feasible and can effectively realize personalized learning in basic education in China.

3. Analysis of the trends in technology and its use in education

3.1 Application of technology in teaching

The core problem of educational technology research is "how technology promotes learning", and "how technology promotes learning" is also the key to how to promote educational informatization. Human society has entered the society5.0 era, and more and more technical tools are used to improve learners' academic performance and comprehensive quality. Technology has become an important part of our life, and has also been widely used in education. Technology has been widely used in teaching: virtual laboratories, intelligent classrooms, online learning systems and so on are all examples of technology application in teaching. The virtual lab allows students to conduct experiments in simulated environments, which can save time and money[5]. Smart classrooms use interactive whiteboards and other interactive devices to make teaching even more interesting and engaging. The online learning system allows students to access course materials and resources at anytime and anywhere. In addition, technology can bring many benefits to teaching: First, it can improve teaching efficiency. With the help of technology, teachers can save time and energy in preparing courses and teaching materials. Secondly, it can improve students' interest in learning. With the help of interactive devices, students can be more actively involved in the learning process. Third, it can improve the learning effect. With the help of the online learning system, students can access course materials and resources anytime and anywhere, which can help them better understand knowledge.

3.2 Integration of education and technology

Education is an activity of cultivating people, and the process of human development is a process of constantly moving from low to high, from individual to group, from the development and utilization of material materials to the pursuit of spiritual and cultural promotion. This means that education, while serving human and social development, must also meet the needs of individual development and the overall social development, that is, to meet the needs of social development. That is to say, education should meet the physical and mental needs of everyone in different periods and at different stages, rather than just meeting the individual needs of students for knowledge and skills. At present, China puts forward new requirements for all kinds of education: improving students 'learning ability and promoting their all-round development; improving teachers' teaching level, teaching effect and teaching quality; and improving school management level and school-running quality[6].

Learning technology refers to the technology that can improve the learning effect and promote learners to learn in real situations, that is, the technology that uses relevant strategies to achieve teaching objectives and promote learning, and promote the combination of technology and teaching to improve learners' cognitive ability. Learning technology has become the trend of the development of modern education. The integration of education and technology refers to the combination of education and technology, and it is to use technology to improve the quality of education. It is a new teaching mode that combines the advantages of traditional teaching and modern science and technology, and it is a new teaching method that uses modern technology to improve the efficiency of teaching and learning. The integration of education and technology is an important trend in the development of modern education. In the future, it is necessary to continue to promote the integration of education and science and technology, so as to further improve the quality of modern education. CTCL research paradigm has a great enlightening role in the process of education and teaching, and is of reference significance for the

new requirements of the country for education. It can effectively improve the efficiency of school management, optimize the allocation of teaching resources, improve teachers 'teaching ability and education level, as well as students' academic level and students' comprehensive quality. In teaching practice, we should try to integrate the culture, technology, learning content and learners mentioned by Professor Dong Yuqi organically, and improve the learning method to improve the academic level of learners through technical support.

The improvement of the traditional classroom under the background of educational informatization. At present, new technologies such as "Internet Plus", artificial intelligence, big data and cloud computing are constantly emerging, bringing revolutionary changes to education. The traditional educational concept is undergoing profound changes, and the educational concept of "serving students 'learning" has gradually been deeply rooted in people's hearts. Under the background of educational informatization, students' learning is gradually changing from teachers and teaching materials to learners, from knowledge accumulation to knowledge application, and ability transformation from knowledge acquisition. In this context, the traditional classroom teaching must be transformed accordingly: the interaction between teachers and students; the teaching design reflects the subject position of students; the teaching process reflects three dimensions of knowledge and skills, process and method, emotion, and attitude and values; the learning evaluation emphasizes the "recent development zone" based on learners, that is, from "what to learn" to "how to learn". In the traditional classroom, the teacher is the leader of the classroom activities[7]. Today, with the rapid development of information technology, the interaction between teachers and students in the traditional classroom will change. Modern information technology has become to promote educational innovation.

4. Research method

4.1 Literature research method

Involving an in-depth study of a particular case to explore its intrinsic mechanisms, structure, and dynamics. It is a deep investigation designed to reveal the particularity of the case and the relationship between the events and phenomena occurring in the case. The case study method can be used to study a particular case or a set of cases to compare and analyze the differences and similarities between them. The individual cases in the cited literature are appropriately analyzed in this paper[8].

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5. Research conclusion

How to improve the efficiency of the use of technology in education? How to improve the implementation effect of technology in education and then use technology to improve learners' academic level and improve their comprehensive quality? There are the following conclusions:

The efficiency of technology use in education is not satisfactory. To improve the efficiency of the use of technology in education, we need to start from the design of technology, teachers 'training and students' participation, so as to improve the efficiency of education, improve teaching quality and improve students' learning motivation.

5.1 Technical design

The design of technology is the key to improving the efficiency of its use in education. The technology should be designed to be easy to use, easy to operate, understand, maintain, update, and have good usability and reliability. In addition, the design of technology should also take into account the characteristics of education and meet the needs of education.

5.2 Teacher training

The use of technology requires the participation of teachers, and teacher training is an important factor to improve the efficiency of the use of technology in education. Teachers should be trained in technology about how to use it, and how to apply it to their teaching. In addition, teachers should also learn how to use technology to improve the quality of teaching, stimulate students 'interest in learning, and improve students' learning efficiency[8].

5.3 Student participation

Students are the main body of the use of technology in education, and the participation of students is an important factor to improve the efficiency of the use of technology in education. Schools should encourage students to participate in the use of technology, allow students to learn how to use technology, and use technology to improve learning efficiency. In addition, schools should also carry out technical activities to let students learn how to use technology to solve problems and cultivate students' innovative ability.

On how to improve the effect of technology in education and then use technology to improve learners academic level and improve their comprehensive quality problems, have the following solutions: the effect of technology in education depends on teachers and students 'technical application ability and teaching methods, therefore, schools should establish a perfect technical training system, improve the students' ability of technology application, improve teaching methods, so as to improve the implementation of technology in education. In addition, schools can also use technology to improve learners' academic level and comprehensive quality, so as to improve the learning effect of learners. The research object of educational technology is not educational technology, let alone technology itself, but education; educational technology focuses on solving practical problems in education through systematization and optimization; educational technology should pay more attention to learners and guide learners themselves to apply technology (including intelligent technology) to improve learning and promote the development of.

6. Existing problem

The implementation effect of technology in education is affected by many factors, which may lead to the unsatisfactory implementation effect of technology in promoting learning. First of all, the management mechanism of technology implementation is not perfect. The lack of effective management and supervision of technology implementation will lead to the failure of technology implementation. Secondly, technical support for technical implementation is insufficient. Lack of technical support can lead to failure of technical implementation. Thirdly, teachers' ability to use technology is not strong enough. The lack of teachers' technology application ability will lead to the failure of technology implementation. Finally, students' ability to use technology is not strong enough. The lack of students' ability to use technology will lead to the failure of technology implementation[9].

7. Prospect

In order to improve the implementation effect of technology in education, improve their academic performance and improve their comprehensive quality, the following methods should be adopted:

First of all, an effective technology implementation and management mechanism should be established. Establish a management mechanism to ensure the smooth implementation of the technology. Secondly, effective technical support should be provided for technology implementation. Provide technical support to ensure the successful implementation of the technology. Third, we should improve teachers' ability to use technology. Teachers should be trained to improve their ability to use the technology. Finally, it is necessary to improve the students' ability to use the technology. Students should be trained to improve their ability to use the technology[10].

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