

# *The Changes and Challenges of Educational Technology Innovation on the Role of Teachers*

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**Abstract:** Educational technology innovation is profoundly changing the role of teachers, requiring them not only to impart knowledge, but also to be the builders of democratic and equal teacher-student relationships, guides in the teaching process, and motivators of student potential. This transformation is also accompanied by many challenges, such as technological adaptation, balanced distribution of resources, and student mental health. To address these challenges, teachers need to continuously improve their technical literacy and adapt to new teaching tools and platforms; The government and society need to increase investment to promote the balanced distribution of educational resources and ensure educational equity. Paying attention to the mental health of students and providing necessary emotional support is also an indispensable part in the context of educational technology innovation. Although educational technology innovation has brought many challenges, it has also injected new vitality and opportunities into the field of education. We should actively embrace change, constantly innovate teaching methods and means, and promote the sustainable development of education. Only in this way can we cultivate more talents with innovative spirit and practical ability, and contribute to the progress and development of society.

## **1. Introduction**

With the rapid development of technology, educational technology innovation is profoundly changing the field of education, with the most significant being the change in the role of teachers and the challenges they face[1]. Educational technology innovation not only changes teaching methods and means, but also transforms teachers from traditional knowledge transmitters to guides and partners on the learning path of students[2].

Innovation in educational technology has brought about changes in teaching methods. The rise of new teaching models such as online teaching and blended learning has enabled teachers to no longer be limited to traditional classroom teaching, but to utilize online platforms and digital tools to provide students with richer and more diverse learning resources and interactive methods. This transformation requires teachers to have corresponding digital literacy and information technology capabilities to adapt to the needs of new teaching models.

Educational technology innovation has also changed the role positioning of teachers. Teachers

are no longer just knowledge imparters, but have become guides, course developers, and resource integrators on the path of student learning. They need to design personalized learning paths and teaching plans based on individual differences and learning needs of students, while actively integrating various educational resources to provide students with a better learning experience. The transformation of this role requires teachers to possess higher professional competence and innovative spirit in order to better meet the learning needs of students[3].

Innovation in educational technology has also brought significant challenges to teachers. Teachers need to constantly learn and master new technologies to adapt to the development of educational technology innovation. Due to the uneven distribution of educational resources, teachers in some regions may face problems such as insufficient technological equipment and poor network environment, making it difficult to fully utilize technological means for teaching[4]. With the diversification of student learning methods, teachers also need to pay attention to their emotional needs and mental health, and provide them with more comprehensive support. Teachers need to actively respond and continuously improve their own qualities and abilities. The education department and various sectors of society should also pay more attention and support to teachers, provide them with better training and resources, and help them better cope with the challenges brought by educational technology innovation[5].

Innovation in educational technology inevitably brings about changes and challenges to the role of teachers[6]. Only by actively adapting to changes and continuously improving their own qualities and abilities can teachers better respond to challenges and seize opportunities, making greater contributions to cultivating more outstanding talents.

## **2. Background and development of educational technology innovation**

### **2.1. Background of Educational Technology Innovation**

In the long river of human history, innovation has always been an important driving force for social progress[7]. Innovation is not only the exploration of unknown fields, but also the recombination and sublimation of existing knowledge based on the wisdom of predecessors. It is the source of continuous development of human civilization. In the field of education, educational technology innovation has become a key factor in promoting education reform and improving education quality.

With the rapid development of technology, cutting-edge technologies such as information technology and artificial intelligence are increasingly being applied in the field of education, providing unlimited possibilities for educational innovation[8]. Educational technology innovation not only changes teaching methods and means, but also leads the updating and upgrading of educational concepts. It enables more efficient and fair distribution of educational resources, allowing every child to enjoy high-quality educational resources[9].

The emergence of educational technology innovation is a groundbreaking milestone in the history of education[10]. It breaks the constraints of traditional education and makes education more open, diverse, and inclusive. Under the promotion of educational technology innovation, education is no longer just about imparting knowledge, but focuses more on cultivating students' innovative ability, critical thinking, and practical ability. The transformation of this educational philosophy has truly made education an important way to cultivate the talents needed by future society. Educational technology innovation also faces many challenges and opportunities. With the continuous emergence of new technologies, teachers need to constantly update their knowledge and skills to meet the needs of educational technology innovation; Educational technology innovation also provides teachers with more teaching tools and means, making teaching more vivid, interesting, and efficient.

Educational technology innovation is one of the important backgrounds of today's era. It has promoted education reform and innovation, providing strong support for cultivating the talents needed by future society. We should actively embrace educational technology innovation, fully utilize the opportunities it brings, and strive to promote the prosperous development of the education industry.

## **2.2. The development of educational technology innovation**

With the progress of the times and technological innovation, the development of educational technology innovation has increasingly become the key to promoting education modernization and improving education quality. The innovative education aimed at cultivating the ability to acquire, apply and create new knowledge is becoming the leading spirit of modern education reform, leading profound changes in the field of education.

Innovation education, as the soul of quality education, aims to break the constraints of traditional education and stimulate students' innovative spirit and creativity. In traditional teaching models, teachers often adopt an indoctrination style of teaching, with students passively receiving knowledge and lacking space for independent thinking and innovation. With the advancement of educational technology innovation, this situation is being changed.

The development of educational technology innovation provides strong support for the transformation of teacher roles. Teachers need to transform from traditional knowledge transmitters to guides and partners on the path of student learning, encouraging students to actively explore, discover, and innovate. Teachers also need to constantly learn and master new technologies in order to better utilize technological means for teaching and improve teaching effectiveness.

Building a new type of teacher-student relationship is also an important part of educational technology innovation and development. The new teacher-student relationship should be based on equality, respect, and understanding. Teachers should pay attention to the individual differences and emotional needs of students, respect their subject status, and stimulate their learning enthusiasm and creativity. In this teacher-student relationship, students can express their ideas and viewpoints more freely, engage in in-depth communication and discussion with teachers, and thus better unleash their innovative potential.

The development of educational technology innovation provides broad space and infinite possibilities for the promotion of innovative education. We should actively embrace technological innovation, fully utilize the opportunities it brings, and promote the prosperous development of education. At the same time, continuous exploration and practice are also needed to make greater contributions to cultivating more innovative and practical talents.

## **3. Innovation in educational technology and its impact on the role of teachers**

With the rapid development of educational technology innovation, the role of teachers is undergoing unprecedented changes. This change is not only reflected in teaching methods and means, but also more profoundly in the transformation of teacher-student relationships, the repositioning of teaching roles, and the improvement of teachers' self-cultivation.

In terms of the transformation of teacher-student relationships, educational technology innovation has driven teachers to become promoters of building democratic, equal, and friendly teacher-student relationships. The traditional teacher-student relationship often centers around the teacher, with students in a passive receiving position. However, with the advancement of educational technology innovation, this one-way and unequal teacher-student relationship is being broken. Teachers are beginning to pay more attention to interaction and communication with students, listening to their thoughts and needs, and respecting their individual differences. They

strive to create a democratic and equal learning atmosphere, encourage students to actively participate in classroom discussions and activities, and establish a friendly and intimate relationship with students. The establishment of this new type of teacher-student relationship helps to stimulate students' interest and initiative in learning, and improve teaching effectiveness.

In terms of teaching roles, educational technology innovation requires teachers to strive to be guides and motivators of education. Traditional teaching methods often focus on imparting and memorizing knowledge, while neglecting the cultivation of students' innovative thinking and practical abilities. Driven by technological innovation, teaching methods are gradually shifting towards student-centered and skill development focused teaching models. Teachers no longer simply impart knowledge, but pay more attention to guiding students to discover and solve problems, stimulating their innovative spirit and exploratory desire. They design challenging and inspiring teaching tasks and activities to enable students to learn and grow through practice, cultivating their critical thinking and innovation abilities.

Table 1: The Impact of Educational Technology Innovation on Teacher Role Change

In terms of change	Traditional mode	The impact of educational technology innovation	New Teacher Role
Teacher-student relationship Teaching role	Teacher centered, one-way teaching	Democracy, equality, and friendly teacher-student relationship	A promoter of building democratic and equal teacher-student relationships
	Passive acceptance by students	Interactive communication, listening to student needs	Respect the individual differences of students and create an equal learning atmosphere
Self cultivation In terms of change	Knowledge imparting, emphasizing memory	Putting students at the center and focusing on ability development	The guide and motivator of education
	Neglecting innovative thinking and practical abilities	Guide students to identify and solve problems	Cultivate students' innovative spirit and exploratory desire
Teacher-student relationship	A simple knowledge transmitter	Rapid development of technology and rapid updating of knowledge	Learners of knowledge, continuous learning
	Mastering basic teaching methods	Understand the latest educational concepts and technological developments	Enhance professional competence and innovation ability

In terms of self-cultivation, educational technology innovation has prompted teachers to transform from mere knowledge transmitters to knowledge receivers. With the rapid development of technology and the continuous updating of knowledge, teachers need to constantly learn new knowledge and skills to adapt to the needs of educational technology innovation. They not only need to master basic teaching methods and means, but also need to understand the latest educational concepts and technological development trends. By participating in training, reading relevant books and articles, and participating in academic exchanges, teachers continuously improve their

professional competence and innovation ability to better respond to the challenges and opportunities brought by educational technology innovation.

The changes in the role of teachers caused by educational technology innovation are profound and comprehensive. Teachers need to constantly adapt and adjust in terms of teacher-student relationships, teaching roles, and self-cultivation, in order to better play their role and value, and contribute to cultivating more outstanding talents. Table 1 clearly shows the aspects of educational technology innovation in changing the role of teachers.

#### **4. Addressing the challenges brought by educational technology innovation**

With the rapid progress of technology, educational technology innovation has become an indispensable force in the field of education. Just as any change comes with challenges, educational technology innovation also brings many challenges to teachers and the education system. To effectively address these challenges, we need to think and strive from multiple perspectives.

Faced with the challenges of technological adaptation and skill enhancement brought about by educational technology innovation, teachers need to maintain an open and learning attitude. Educational technology innovation has brought many new teaching tools and platforms, such as online learning platforms, intelligent teaching software, etc. These tools not only help teachers impart knowledge more efficiently, but also provide students with a richer learning experience. To fully utilize these tools, teachers need to possess certain technical literacy and operational abilities. Teachers need to actively learn new technologies, participate in relevant training, and improve their skills.

The uneven distribution of educational resources is another challenge brought about by educational technology innovation. Due to regional and economic differences, there are significant disparities in the allocation of educational resources among schools in different regions. Some schools may have advanced teaching equipment and abundant educational resources, while others may be relatively scarce. This uneven distribution can lead to difficulties in promoting and applying educational technology innovation in different regions. To address this challenge, we need to strengthen the sharing and balanced distribution of educational resources. The government and all sectors of society should increase investment in the field of education, promote the flow and sharing of high-quality educational resources, and ensure that every child can enjoy the dividends brought by educational technology innovation.

The attention to students' mental health and emotional needs is also one of the important challenges brought about by educational technology innovation. Although new teaching modes such as online learning and virtual classrooms bring convenience, they may also lead to students feeling lonely and anxious during learning. Teachers need to pay attention to the emotional needs of students and provide them with necessary psychological support and care. Teachers also need to innovate teaching methods and means to stimulate students' interest and enthusiasm in learning, and help them establish correct learning attitudes and values.

In order to address the challenges brought by educational technology innovation, we also need to build an education system that supports the growth and development of teachers. This system should provide necessary training and support for teachers to help them adapt to the needs of educational technology innovation. We also need to establish a good educational ecosystem, encourage communication and cooperation among teachers, and jointly promote the progress of education.

Dealing with the challenges brought by educational technology innovation requires us to think and make efforts from multiple perspectives. Only by continuously improving the skill level of teachers, strengthening the sharing and balanced distribution of educational resources, paying

attention to the psychological and emotional needs of students, and building an education system that supports the growth and development of teachers, can we better respond to these challenges and promote the prosperous development of the education industry. Table 2 clearly shows how to address the challenges brought by educational technology innovation.

Table 2: How to address the challenges brought by educational technology innovation

In terms of challenges	Specific situation	Response strategies
Technical adaptation and skill enhancement Uneven distribution of educational resources	New teaching tools and platforms emerge	Teachers learn new technologies and participate in training
	Teachers need to possess technical literacy and operational skills	Improve skill levels and make full use of tools
Student mental health and emotional needs Support for Teacher Growth and Development	Regional and economic disparities lead to resource disparities	Strengthen resource sharing and achieve balanced distribution
	Some schools lack resources and face difficulties in promotion	Government and society increase investment to promote mobility and sharing
In terms of challenges Technical adaptation and skill enhancement	The new teaching mode may lead to loneliness and anxiety	Teachers pay attention to students' emotional needs and provide psychological support
	Stimulate learning interest and enthusiasm, establish correct attitudes	Innovative teaching methods and means
Uneven distribution of educational resources	Educational technology innovation poses new requirements for teachers	Building an education system that supports teacher growth
	Teachers need to adapt and respond to new needs	Provide training and support, encourage communication and cooperation

## 5. Conclusions

The deepening development of educational technology innovation has brought profound and comprehensive changes to the role of teachers, while also bringing many challenges. In the transformation of teacher-student relationships, teachers need to become active promoters of democratic, equal, and friendly teacher-student relationships, breaking away from traditional authoritative images, and establishing more intimate and interactive relationships with students. In terms of teaching roles, teachers need to transform from mere knowledge transmitters to guides and motivators of education, focusing on cultivating students' innovative thinking and practical abilities. In terms of self-cultivation, teachers need to constantly learn new knowledge and skills to adapt to the pace of technological innovation, transforming from a simple transmitter of knowledge to a continuous learner of knowledge.

Faced with the challenges brought by educational technology innovation, we need to take proactive and effective measures to address them. Teachers need to maintain an open and learning attitude, actively improve their technical literacy and operational abilities, in order to fully utilize new teaching tools and platforms. The government and all sectors of society should increase investment to promote the balanced distribution of educational resources and ensure that every child



can enjoy the educational dividends brought by technology. We should also pay attention to the psychological health and emotional needs of students, and provide them with necessary psychological support and care.

Educational technology innovation is an irreversible trend that brings infinite possibilities and many challenges to the field of education. We must embrace this change with an open mindset, continuously improve our own abilities, innovate teaching methods, better respond to challenges, promote the prosperous development of education, and cultivate more talents with innovative spirit and practical ability.

## References

- [1] Huang X, Zou D, Cheng G, et al. Trends, research issues and applications of artificial intelligence in language education [J]. *Educational Technology & Society*, 2023, 26(1): 112-131.
- [2] Guo J, Khatibi A, Tham J. The Role Of Innovation And Entrepreneurship Education In Promoting The Growth Of Students In Higher Vocational Colleges[J]. *Educational Administration: Theory and Practice*, 2024, 30(3): 660-663.
- [3] Schmidt T, Strasser T. Artificial intelligence in foreign language learning and teaching: a CALL for intelligent practice [J]. *Anglistik: International Journal of English Studies*, 2022, 33(1): 165-184.
- [4] Alemany M M E, Lluch A V, López J F V, et al. E-learning in “innovation, creativity and entrepreneurship”: Exploring the new opportunities and challenges of technologies[J]. *Journal of Small Business Strategy*, 2021, 31(1): 39-50.
- [5] Shankar U, Bandopadhyaya T K, Mehta C. Climate change and technology transfer: Tying the knot through human rights [J]. *Journal of Intellectual Property Rights*, 2018, 23(1):27-34.
- [6] Kovacs H. Change, challenge, transformation: A qualitative inquiry into transformative teacher learning[J]. *Center for Educational Policy Studies Journal*, 2018, 8(3): 99-118.
- [7] Napan K, Green J K, Thomas J A, et al. Collaborative transformations: Cooperative inquiry as a catalyst for change [J]. *Journal of Transformative Education*, 2018, 16(3): 246-267.
- [8] Xue C. Research on the Future Teacher Quality Cultivation Innovation under the Background of "Internet + Education"[J]. *World Scientific Research Journal*, 2019, 5(12):210-214.
- [9] Vinther A, Ramnarine E. Solving the Global Continual Improvement and Innovation Challenge: How an Effective Pharmaceutical Quality System Can Transform Post-Approval Change Management[J]. *PDA Journal of Pharmaceutical Science and Technology*, 2019, 73(5):517-521.
- [10] Tukimin R, Mohd N, Yusoff R N, et al. Source of Ideas of Teacher-Generated Innovation in Teaching Arabic Language in Primary Schools[J]. *International Journal of Academic Research in Progressive Education and Development*, 2021, 9(2):2226-6348.