The Transformation Path and Innovation Strategy of Teaching Mode in Educational Enterprises Under Data Empowerment

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Keywords: Data Empowerment, Transformation of Educational Model, Innovation Strategy.

Abstract: Along with the continuous development progress and innovation of digital techniques, digital technology has entered people's lives. The Educational industry is undergoing profound changes. Digital technology in education can improve the level of individualized learning and data-driven educational process management to new heights. The research of this article aims to analyze the specific paths and innovative strategies for the transformation of new teaching models empowered by data in educational enterprises under the empowerment of big data in the new era, through individualized data analysis, AI intelligence director, digital classrooms, cross-campus cooperation educational models, etc. According to the case study of Dingtalk, TAL AI teaching assistants, and Cloud classroom, verifying the transformation and innovation path of the new teaching model empowered by data can efficiently improve the quality of teaching and the adaptability to individual students. Finally, proposing the importance of enhancing teachers' adaptability, popularizing low-cost implementation, and completing their cultivation system. The research results show that Data empowerment will be continuously improved and completed, to increase students' interest in constantly exploring learning fields, improve the quality of teachers' teaching, and be more committed to cultivating diversified talents.

1 INTRODUCTION

In today's era, Technology develops quickly, and the demand for diversified, high-quality, and interdisciplinary talented people is continuously increasing every day in society. Traditional teaching methods and teaching content are more focused on rote memorization, which cannot satisfy the different needs of different talents in today's society.

The digital educational system allows students to grow up in a technological environment, which can quickly synchronize society's progress and development in the current era.

Through this way could benefit their future lives, children could better adapt to society for their future. Innovative education companies are using technological advancements and data-driven approaches to deeply understand students' learning methods, performance, preferences, and so on. Simultaneously, that could also enable the educational industry to develop more effective teaching models, optimize educational resources, and ultimately improve the quality of education.

Therefore, exploring educational industry is the Transformation Path and Innovation Strategies of Teaching Models under the Enabling Role of Educational Enterprise Data. It not only has important academic significance but also is an urgent necessary practical need. Along with the technology and educational industry's rapid development, many scholars have contributed to the innovation of educational technology, the transformation strategy of teaching ways, and the innovation and reform of the education system.

The predecessors analyzed the teaching methods of Advanced Mathematics by analyzing the explicit and invisible problems existing in the modern teaching mode from the aspects of teaching ways, elements, and evaluation methods. This paper proposes the role path of ideological and political teaching of the "Advanced Mathematics" course under the empowerment of data. Proposing that the role path of ideological and political teaching of "Advanced Mathematics" course under the empowerment of data.

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Chang, Z.
The Transformation Path and Innovation Strategy of Teaching Mode in Educational Enterprises Under Data Empowerment.
DOI: 10.5220/0013850100004719

In *Proceedings of the 2nd International Conference on E-commerce and Modern Logistics (ICEML 2025)*, pages 587-592
ISBN: 978-989-758-775-7

The introduction of artificial intelligence as an important resource, through an intelligent platform to create some dynamic situational study cases. (such as infiltrating the sense of responsibility through epidemic data modeling) indicates that student participation increased 25% but emphasizes the need to be vigilant against the weakening of emotional interaction caused by technology dependence (Ma, 2025).

In the previous research, they evaluated other online teaching platform applications. Analysing of Edmodo, Zoom, and Google Meet online physical education platforms. The result showed that the real-time platform, Zoom, has a great advantage of skill display, but this application obviously faces the problem of low accuracy in evaluation, for example, it is difficult to capture the actions and details, also Zoom cannot be used without a network; Although Edmodo's asynchronous management feature can improve learning flexibility, there are still cases where the speed of teacher feedback to students is still not timely (Gao et al.,2025)

The study topic of this paper is the transformation strategy of these education enterprises under the empowerment of data. At the same time, the teaching level of teaching effect in the education industry is different, the arrival of technology can better offset this loophole in the education industry. This paper uses the method of literature research, to classify and compare with the advantages and disadvantages of traditional education enterprises and modern education enterprises, and some relevant theories of the teaching pattern.

Using case studies and literature, in- depth discussion about the feasibility of the educational enterprises and the advantageous innovation strategies of combining technology and education enterprises.

2 INNOVATIVE DIRECTION OF TEACHING MODE OF DATA EMPOWERMENT

2.1 Cross-School Cooperation

With the development of science and technology, there a new opportunity for cross-school cooperation, different schools can share their resources through one unity platform, breaking the geographical and resource restrictions between schools.

The system of establishing of school-enterprise cooperation practice teaching system under the big data and Internet industry (Li, 2022). Sharing those high-quality educational resources and also could promote communication between schools and learn from each other.

In terms of resources, different schools have different teaching courses and teaching modes, there can be an integrated through online platforms. Teachers recorded the teaching videos and posted them on online platforms for students to learn and browse, students could watch different subjects or courses with different characteristics. The platform can use data algorithms to classify, index, and label various types of courses, which is convenient for other schools to search and filter. And through the number of views, scoring or evaluation, and other functions to recommend and sort.

In terms of cooperation, students learn online through the online platform, and teachers teach together. Complete the course by taking credits and completing the mid-term assessment. In addition, students can input their own needs, and let the AI help recommend the right teacher, matching them with the most suitable learning method and teacher. At the same time, some courses can also be taught by teachers from different schools to present a richer classroom together.

In addition, the teaching platform can also use data empowerment to analyze students' learning status, test their class status and mastery of knowledge points, optimize the curriculum, and then adjust in future classes.

At the same time, based on the analysis of students' homework completion, test scores and course feedback in the cross-school curriculum, the strengths and weaknesses of the curriculum can be understood, so that the participating schools can jointly improve the curriculum content and teaching methods.

2.2 Personalized Learning Scheme

The level of students is different, and students need a teacher who is more suitable for oneself and make tailored student programs to help students study. Teaching integrated with data can provide a series of students' information. Different students should match different study cases, such as according to their interest and their different ability to match with different teacher and study methods.

In teacher matching, data can play an important role, the platform could collect students' interests and needs. At the same time, they could still collect teachers' teaching styles, teaching methods, student evaluations, etc. Combine these resources together

and matching the most suitable group of teachers and students. The strong online teaching power helps the education industry to achieve outstanding development (Qizi and Fakhridinovna, 2025).

In terms of the formulation of the study plan, by using the precise analysis of data, the platform could provide the students with the most fitful homework quantity and the appropriate practice test.

For example, assign math problems to student A, when student A makes a mistake in one problem, the plat form will show there answer the solving process, and rapidly Extracting a similar type of question from the question bank, to make sure students are well understand on these types of question.

2.3 Online Learning

Timely data has brought unprecedented opportunities for diverse learning of education. Online digital platforms can provide a large number of learning resources for students or teachers, breaking time limitations and geographical restrictions.

High-quality teachers applying remote teaching classes through network technology. Students could find their interest field, and according to the online platform, some matching teachers came to give me remote lessons.

These studying forms could profoundly excavated students' hobby, exploring mastery unknown area. For example, student is interested in economics, students can find some relevant teachers to study and contribute to a "Virtual Enterprise Financial Center" to test the students' learning levels (Shen, 2025).

For some remote areas and Regions with scarce resources, remote study could provide an opportunity for those students to study. By using the platform, the students in remote mountainous areas can also learn some things that are the same as those learned by children in cities.

So that could contract the difference in the educational gap. Also, Students who take courses remotely can also interact with their teachers. The teachers can ask questions or provide answers.

The platform can record the students' participation in class, the frequency of their questions, the general situation, etc. According to those data, students could fully realize students study situation.

Automation of libraries is also an important manifestation of data empowerment. In an automated library can taking classification and tagging. By technology, techniques can detect the positions of books and their borrowing status. Students can make reservations or conduct electronic reading on the platform.

The platform also could gather some data, making a Recommendation based on the student's learning history and reading data.

2.4 Digital Classroom Management

The experience of digital teaching activity has significantly improved the teaching effect, teaching experience, and the teaching quality of students' learning.

In the traditional class style, Students' attention is easily distracted, and teachers need some new teaching things to improve the students' listening and learning.

Multimedia presentations, viewing, and 3D audio simulations are a great solution to this problem.

Combining the Pictures, videos, texts, etc. And showing this studying material on the classes could efficiently enhance students' interest in learning mathematics and curiosity. For example, there are many function formulas which need students to memory. Teachers could find some related function teaching videos or brainwashing function recitation songs on the Internet to help students learn, those studying contents are very interesting and could efficiently improve students' interest in learning mathematics and curiosity.

The audio 3D simulation environment creates a good learning atmosphere and allows students to fully immerse themselves in their studies. In contextual situations, it can help students to have a better understanding of knowledge. For example, in studying English listening and speaking, students can understand how people speak in different scenarios through 3D simulated language scenes. Students can talk to people in these scenarios and practice their language and speaking skills. Finally, the system will according to their saying make a score and evaluate to provide some advice for changes. In this way, students will understand the application of English more, intuitively, and at the same time, they will be able to learn some colloquial expressions.

2.5 Intelligent Assessment

In the digital transformation of education, Intelligent assessment is also a key part. AI has many functions such as correcting students' homework and prediction of knowledge point mastery, which greatly reduces grading errors and improves the speed of feedback and also provides more targeted teaching and learning support for teachers and students.

iFLYTEK's "Smart Classroom" system is a successful application case of intelligent assessment in the field of education. iFLYTEK's Smart Classroom system combining with many progressive intelligence techniques, providing a comprehensive Intelligent evaluation solutions for teaching. In the aspect of AI grading assignments, the Smart Classroom system can automatically correct assignments in a variety of subjects, whatever the subject's question or the object's question, the technology could give an accurate rating and detailed feedback. For instance, the correction of Chinese composition doesn't just score the metrics of the article but also provides a specific modification suggestion, such as enriching content, optimizing sentence structure, etc., which can help students increase their writing ability.

Smart Classroom system through analysis the resources from their study process and many aspects, AI could predict students' mastery of knowledge points. Teachers could directly view every student's mastery of each knowledge point, and the overall learning progress and weak points of the class, teachers could create individual study schedules for students based on that data, For students with weak basic knowledge, the teacher could leave some basic knowledge and us AI to help students organize and summarize those wrong question and then help students consolidate their knowledge.

3 CASE ANALYSIS

3.1 TAL AI Teaching Assistant

Under the transformation path and innovation trend of integrating technology into the teaching mode of education enterprises, TAL takes advanced education concepts to lead the development of the education industry, making the AI assistant into the teaching process, and providing accurate and efficient study support.

TAL AI assistant has Powerful language processing and technical algorithms. They have a powerful ability to analyze students' homework. After students submit their homework, AI teaching assistants first use optical character recognition technology, transform the handwriting into digital information, and then identify whether the answer is right or wrong. When they determine the answer, they will still drill down into every detail of the problem-solving step. AI teaching assistants are able to break down every step of the inference process written by the student and understand the logic behind it. Through analysis of a large number of similar question types and solution data it can detect students' wrong tendencies in a certain type of questions, summarize students' mistakes, and judge the causes of errors. In addition, proposing specific solutions to the question, and providing the relevant knowledge materials for students to review, such as detailed explanations of geometric theorems involved, application examples, etc., to help students comprehensively and have a better understanding of geometric proof methods.

3.2 “Getting” App

"Getting" APP has already got the precisely data analysis, and continuously optimization of the course recommendation algorithm. The platform leverages its powerful algorithms and features to prioritize content that users are interested in. Its course could cover many dimensions, such as famous business professor analysis it strategic of various industries from the theoretical level. By learning some close factors, and establishing a systematic strategic knowledge framework for learners, there are still some successful businessmen to share about their business strategy and experience, make follow-up, or potentially change their interest in recommendations. For example, after finishing studying the whole basic classes, the system could suggest more complex studying content and the knowledge framework or some connecting classes.

4 THE DISADVANTAGES OF TRADITIONAL TEACHING MODE AND THE ADVANTAGES OF DATA EMPOWERMENT TEACHING MODE

In their teaching methods, the traditional pattern, whether it is elementary school, junior high school, or university, the form of the classes most are teachers standing in front of the class and talking about their knowledge point and students listening to their teacher. In this case, the teacher cannot focus on everyone. And the participation of student engagement rate is very low. Students are very prone to distraction and lack concentration during class. However, in data-enabled education, AI could focus on every student and use the education platform can provide AI guidance to help teachers teach.

At the same time, the data is used to detect the attention concentration of students, and the statistics

provide better teaching time and teaching mode. Each student is provided with their own study time planning, class attention, etc.

In the evaluation of education, most teachers just rely on students' scores and ignore their studying processes, practical skills, and critical thinking or the efforts made by the students.

The scoring criteria in the present era are relatively simple, and most of them rely on rote learning, students cannot make a deep understanding about the theory of "studying is for themselves, it is not for score." Combined with education empowered by technology and data, it can calculate students' whole learning time, practice and innovative thinking, at last AI could give the final evaluation from a variety of aspects (Spaska et al., 2025).

In terms of content extension, in modern society with advanced technology, the update of knowledge is also accelerating day by day. Traditional textbooks cannot fully adapt to the development of society and the progress of The Times (Qizi and Fakhridinovna, 2025). that will make students disjoint with the whole society, and that will also make a knowledge "gap". Most of the school's teachers in schools have not studied or worked in professional positions, so the teacher could only spread the knowledge spreading, they could not teach students the skills that might be used in their future careers (Yin,2020).

For instance, in computer technology courses, textbooks might still be introducing outdated software versions and technologies. That is a gap between the knowledge students acquire and the actual demands of the industry, it will make students difficult to quickly adapt to the requirements of their job positions. The teaching model empowered by data can teach students some relatively practical techniques or knowledge.

5 SUGGESTIONS

Teaching enterprises and energizing data technologies coalesce have made teaching quality, resource distribution and these such aspects a success and progress. But the educational industry's innovation and development are also facing many challenges. The current traditional study class have a low fusion degree with the online platform in order to Further promote the educational industry to a higher quality of development, fully play to the positive role of data in teaching and put forward the following pertinent and actionable suggestions from the three key dimensions of improving the teacher training system, integrating educational resources and establishing a scientific evaluation system (Setyadi et al.,2025).

5.1 Improve the Teacher Training System

Carrying out systematic data training courses and letting the teacher have the ability to interpret some simple data statistic version. For example, by providing some specialized technical courses and conducting training for individual students. This way could also cultivate teachers' Adaptability and the ability to evaluate teaching effectiveness through data utilization and can effectively adjust one's teaching strategies and methods using data charts.

Implement specific training for the educational technology equipment, such as some the use of online platforms, which can help teachers to be familiar with those teaching platforms, and they could better use these platforms which is under the data empowerment, to carry out the live teaching,

Assignment distribution, discussion organization, etc. At the same time, in the learning process, teachers could learn some innovative educational concepts, Breaking away from the traditional teaching methods.

The new creative teaching ideals, encouraging students to engage in classes positively and actively, cultivating their innovative thinking and practical abilities.

5.2 Establish Evaluation System

The revolution of assessment methods of Digital grades represents everything is necessary, A diversified assessment system can provide the best solution of the disadvantage on the traditional assessment. In addition to the studying score, the evaluation system should also include students' Regular performance evaluations, including but not limited to, attendance rate, classroom performance, practical ability and innovation ability, etc.

Comprehensively and fully assess students' performance, and provide a Evaluation and assessment to students. With the help of data and intelligence to make the assessment system more intelligent, for example, take advantage of the intelligence modify system, Automatic correction of students' homework and test papers, which is more efficient and higher accurate than artificial, technology still analyzes students' completion status and answer performance of students' homework, accurately understand the students' knowledge gaps and other issues.

6 CONCLUSION

This essay is a deep exploration about the innovative development of the education model empowered by data. Digital techniques are becoming the core production of the reformation, and the reforming of the education industry will also be imperative. According to the extensive analysis In-depth Exploration of the Teaching Model Empowered by Big Data in the New Era.

Starting from multiple dimensions such as personalized data analysis, AI intelligent guidance, digital classroom construction, and cross-school cooperative education models, learning about the innovative paths and transformation directions of the new teaching mode. The research result shows that the data-enabled teaching model is in the process of continuous optimization and improvement.

Accepting the technology strategy can motivate student's studying interest, improve teachers' teaching level, inject strong impetus into the cultivation of pluralism talented students, push the educational industry to high-stage development, and create a brand-new situation for the innovative development of education.

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