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A Study of Innovative Teaching Pathways in AIGC-Enabled Business Programmes--Take the Tax Law Course as an Example

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Abstract: AIGC brings new opportunities for the construction of applied undergraduate business courses. Its powerful content generation capability, intelligent interactivity and personalised customisation function provide new ideas for solving the challenges of course objectives, content design, teaching mode innovation, teaching scenarios and evaluation index system optimisation. Taking the Tax Law course as an example, we explore the " "Five in One" and two-in-one" AIGC-enabled innovative teaching path of the Tax Law course, aiming to build a complete closed loop of course implementation and inspire AIGC's innovative concepts in course construction.

1. Introductory

With the rapid development of artificial intelligence technology, especially the breakthrough in the field of natural language processing, generative artificial intelligence generated content (AIGC) technology has begun to show great potential in various industries. Generative AI refers to the technology that generates content such as text, images, sound, video, code, etc. based on algorithms, models, and rules [1]. In 2024, Wuyan, the Ministry of education, proposed at the 2024 world MOOC and online education conference that China's higher education is entering the era of artificial intelligence+smart education, and should adhere to the application as the king, and promote the reform and innovation of AI enabled education [2]. Placed in the context of the era of digital transformation of education, we are able to more profoundly understand the revolutionary impact of digital technology on the modernisation of education governance and the modernisation of education. Education, as one of the important cornerstones of human social development, is also ushering in an unprecedented opportunity for innovation.Rudolph et al. [3]explored the possible applications of Chat GPT in higher education, including the introduction of innovative assessment for teaching and learning, innovative teaching strategies, the provision of experimental and experiential learning, and the promotion of collaborative learning and teamwork, etc. The in-depth integration of AIGC technology with classroom teaching and learning is expected to bring about the transformation of teaching and learning styles and the development of a new way of teaching and learning.This integration will not only improve the efficiency and quality of teaching, but also better meet the personalised needs of students, with a view to promoting high quality and full employment

of university graduates.

As an applied talent training programme, most undergraduates can go to work directly after four years of professional knowledge and practice. At the same time, the business undergraduate teaching curriculum of tax law as an important professional course, not only involves the teaching of legal knowledge, but also bear the cultivation of students' concept of the rule of law, social responsibility and other educational tasks. Based on this, this paper takes the teaching of tax law course as an example, firstly analyses the main role of digital transformation of education in practical application, then constructs the " "Five in One" and two-integration" AIGC tax law course innovation teaching system, and finally gives in-depth thoughts on the teaching of business courses based on AIGC technology and points out the improvement suggestions in order to provide a theoretical basis for the educational reform of business-related majors. Finally, the teaching of business courses based on AIGC technology is considered in depth and suggestions for improvement are made, with a view to providing theoretical guidance for promoting the reform of business-related professional education. Therefore, exploring how AIGC empowers the innovative teaching path of business courses has become an important topic in the current education reform.

2. A Review of Research on Innovative Teaching and Learning in the AIGC Empowerment Programme

Research on the application of artificial intelligence in education has shown a diversified trend, from theoretical discussion to practical application, from ethical risk management to future trend prediction, researchers have explored the possibilities and challenges of the integration of artificial intelligence and education from different perspectives. At the theoretical level, researchers focus on the changes and innovations brought by AI to education, including the innovation of teaching modes, the enhancement of personalised learning experience, and the innovation of educational assessment methods, and put forward many forward-looking ideas. At the practical level, the application of AI technology in education of several disciplines has been widely explored, especially in the fields of medical education, engineering education and fashion design education. At the same time, ethical risk management has become an important topic, and researchers have proposed corresponding governance strategies to address possible risks in AI education. From the existing literature, there have been a small number of studies on the impact and influence of AI on business, such as Huang Luqui et al.'s strategic research on the cultivation of new business talents based on generative AI such as Chat GPT and Wenxin Yiyin [4], and Yu Boyang's analysis on the paradigm transformation of talent cultivation of high-level e-commerce majors fuelled by generative AI[5]. The emergence of emerging technologies such as artificial intelligence has provided rich support tools for innovative teaching of business courses, and has also brought about changes and innovations in the paradigm of scientific research. However, so far, there are relatively few studies by scholars on the innovative teaching of specific business courses such as tax law AIGC empowerment course in applied undergraduate colleges and universities. This topic will be discussed in depth around this theme.

3. "Five in one and two integration" AIGC empowered "Tax Law" course innovative teaching path analysis

AIGC brings new opportunities for the construction of applied undergraduate business courses. Its powerful content generation capability, intelligent interactivity and personalised customisation provide new ideas to solve the challenges in course objectives, content design, teaching mode innovation, teaching scenarios and optimisation of evaluation index system. Taking the tax law course as an example, this project explores the " "Five in One" and two-in-one" AIGC-enabled

innovative teaching path for the tax law course, aiming to build a complete closed loop of course implementation, as shown in Figure 1.

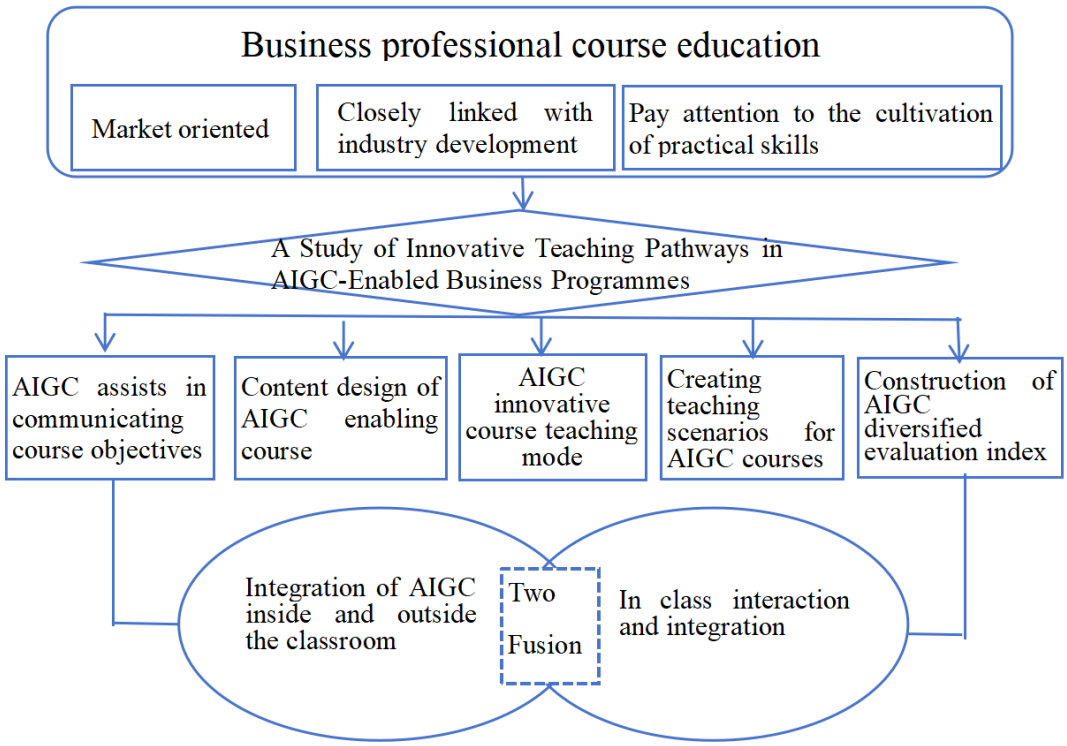

Fig.1 General framework for the study of innovative teaching pathways in the AIGC empowered tax law programme

3.1 AIGC empowerment: the "Five in One" integration pathway

3.1.1 The AIGC assists in communicating the objectives of the programme

The teaching objectives of the tax law course are mainly as follows: firstly, through the study of this course, it enables students to understand the basic theory of tax law, master the main contents of China's current tax system, train students to have the ability to do tax-related business in the work of financial accounting, and also provide preparatory knowledge for the subsequent courses, such as "Experiment on Electronic Tax Return System" and "Tax Accounting". Secondly, the assistant accountant and intermediate accountant qualification examination, tax accountant and certified public accountant examination all involve the content of tax law. The study of this course can lay the foundation for students to participate in the above qualification exams, so that students can successfully obtain the relevant professional qualification certificates. Finally, through the combination of teaching content with hot news and real cases, positive and negative cases are integrated into education to convey correct values to students, so as to cultivate students into high-quality applied talents who not only master basic accounting knowledge and basic skills, but also have socialist core values, can abide by national laws and regulations, and have good moral cultivation, innovation consciousness and team spirit.

In a traditional classroom, it is difficult for students to feel the objectives of the course communicated by the teacher. On the contrary, in the course scenario environment based on AIGC technology, teachers use virtual reality, augmented reality, and mixed reality to build a multimodal environment. Such environments can turn the subject into a part of the object, allowing the subject

to fully integrate the self into the object environment. At the same time, the subject can also find its own role in the digital environment, and better realise the switch between "my mind", "other mind" and "objective environment elements", so as to completely overcome the shortcomings of the separation of body and mind, and move from the "body and mind" to the "objective environment elements". The shortcomings of the separation of body and mind can be completely overcome by experiencing and observing the previously independent "my mind" from the "other mind". Thus, students can put themselves in the shoes of the teacher and feel the objectives of the course more subconsciously.

3.1.2 AIGC Empowerment Programme Content Design

Traditional course content design makes it difficult for students to feel, requires students to have a certain degree of imagination, and relies on teachers' personal experience, which lacks scientificity. AIGC can make use of Natural Language Processing (NLP) and deep learning technology to accurately identify and extract the knowledge elements of the tax law course, and organically integrate them with the teaching and learning, so as to create a more attractive course teaching content that is better suited to the cognitive characteristics of the students. AIGC Enabling tax law course content design is reflected in the following aspects: first, generating analysis cases, AIGC can automatically generate cases related to tax law to help students better understand the application scenarios and practical operation of tax law. For example, by analysing real tax cases, AIGC can generate similar scenarios for students to simulate analysis and discussion. These cases can include different types of tax issues, such as value-added tax (VAT), corporate income tax (CIT),personal income tax (PIT), etc., to help students master the calculation methods and legal provisions of various taxes. Secondly, the course content resources are dynamically updated. AIGC technology can capture the latest tax policy and regulation changes in real time and automatically update the course content to ensure that students learn the latest tax law knowledge. For example, when the country introduces new tax policies, AIGC can quickly generate relevant teaching materials and cases to help students understand and adapt to these changes in a timely manner. Third, personalized learning path, AIGC can also recommend personalized course content for students based on their learning behavior data using recommendation algorithms. Teachers can collect data such as students' learning hours, question answering, browsing records, and interactive behaviours, classify students using clustering algorithms, collaborative filtering algorithms, etc., and combine them with students' learning styles, knowledge mastery, interests and values, and construct multi-dimensional information. We use clustering algorithms and collaborative filtering algorithms to classify students, and combine learning styles, knowledge mastery, interests, values, and other multi-dimensional information to build a multi-dimensional student portrait. Then, using content recommendation, matrix decomposition and other recommendation algorithms, we recommend the course cases, current news, expert opinions, extended reading, etc. that best meet students' needs. Fourthly, interactive learning experience, AIGC can generate interactive learning materials, such as simulated tax filing system, virtual tax consulting, etc., so that students can operate and practice in the simulated environment. This type of interactive learning not only improves students' engagement, but also helps them better master the practical application skills of tax law.

3.1.3 AIGC Innovative Curriculum Teaching Model

The traditional teaching method is based on lectures by teachers, which lacks practicability and interactivity and is difficult to stimulate students' interest in learning, and AIGC can help teachers create highly realistic virtual teaching contexts, develop intelligent dialogue systems, and design game-based learning programmes to provide students with an immersive, interactive and interesting

learning experience. In terms of virtual context teaching, teachers can use VR/AR technology and 3D modelling technology to build virtual tax scenarios, so that students can simulate the experience of commodity display, online negotiation, logistics and transportation, payment and settlement, and tax payment. For example, a virtual simulation platform can be developed using game engines such as Unity and Unreal Engine (Unreal Engine), and socialist core values can be integrated into the platform. Students can immerse themselves in the virtual situation to experience all the links from transaction to tax payment, learn professional knowledge and skills, and at the same time broaden their horizons, innovate, internalise professionalism and spread positive social energy.

3.1.4 Creation of teaching scenarios for AIGC courses

The basic framework for teaching scene construction includes physical layer, software layer, rule layer, application layer and analysis layer [6]. In terms of AIGC technology-enabled scenario construction for tax law courses, firstly, in the physical layer, teachers have to build a scenario support framework with the help of school smart classrooms. With the help of AIGC technologies, such as text processing software Jasper AI and Chat GPT, etc., audio processing software Deep Music and Wave Net, etc., image processing software Edit GAN and Deep fake, etc., video processing software video GPT and Make-A-Video, etc., and cross-modal processing devices Mid Journey and Stable Diffusion, etc. Teachers process the curriculum resources produced by AIGC through virtual reality technology and equipment, so as to generate digital, dynamic and interactive curriculum educational resources, which are accessed into the classroom software system through computer or mobile phone terminals. Secondly, at the application layer, by following sequence-based language guidance, teachers carry out comprehensive content exploration of the course, thus building a crowdsourced space for collective exploration. Finally, in the analysis layer, through the recovery and analysis of data by the relevant software, teachers objectively analyse the psychological changes, data time domain characteristics, time frequency characteristics, physiological data of students after accepting the elements of the curriculum, so as to realise a complete ecological chain system of the scenario. In terms of elements and dimensions, it has effectively increased, in terms of equipment, it is panoramic and digital, in terms of interaction, it is multi-sensory and multi-modal, and in terms of course teaching experience, it is fully immersed.

3.1.5 Constructing teaching evaluations for AIGC's diversified programmes

Traditional curriculum teaching evaluation mainly focuses on students' knowledge mastery and lacks attention to students' values, moral sentiments and behavioural norms, etc. AIGC can help teachers construct a multi-dimensional curriculum evaluation index system to achieve intelligent evaluation of process evaluation and affective attitudes, and to promote students' overall development in the curriculum. Teachers can use generative AIGC to assist in constructing a comprehensive evaluation index system covering multiple dimensions such as knowledge, ability and attitude. In the tax law course, the evaluation index system can include the following dimensions: the degree of mastery of knowledge related to tax laws and regulations; the ability to use knowledge of tax laws and regulations to analyse and solve practical problems; and the awareness and attitude towards tax laws and regulations, such as the awareness of compliance with the law, the awareness of honesty and integrity, and the awareness of social responsibility. Teachers can use methods such as hierarchical analysis (AHP) to determine the weights of different indicators and combine them with students' performance in different course sessions, such as classroom participation, online learning, completion of assignments, and examination results, to make a comprehensive evaluation of students' course effectiveness.

3.2 Four-dimensional extension of the spatial and temporal boundaries of teaching and learning in the "two-integration" tax law programme

In addition to the integration of the " "Five in One"" teaching system, the AIGC tax law course innovation also needs to make full use of AIGC technology to achieve the integration of course teaching and learning, and to extend the spatial and temporal boundaries of teaching and learning four-dimensionally, in order to achieve all-round teaching and learning objectives of the course. The integration of teaching and learning in tax law courses is shown in Figure 1.

3.2.1 Integration of teachers' "resource provision", "school-enterprise co-operation" and students' self-learning inside and outside the AIGC classroom

"School-enterprise" cooperation is an important part of the teaching innovation of AIGC-enabled tax law courses. A variety of AIGC technologies are used in the classroom to allow students to get the in-depth three-dimensional fusion of computer vision, voice recognition and sensory interaction technology at the perception level, but the most authentic course perception should be sublimated in the practice scenario, so as to realise the four-dimensional extension of the time and space boundaries of the courses. The teacher team of the course deepens the "school-enterprise" collaborative education mechanism, establishes the "Guangzhou Huangpu District Taxation Law Education Demonstration Base" for students to experience real taxation activities; organises the taxation short video competition with Jabixin Finance and Taxation Company every year and presents the video competition in the "Shared Accountant" website. We also organise tax short video competitions with Jabixin Taxation Company every year and disseminate them on platforms such as "Shared Accountant", and organise tax law propaganda activities in the countryside to increase students' participation and social responsibility. Meanwhile, AIGC tax law course learning was established on Super Star platform to enrich online course resources, including the establishment of modules such as Study Guide - History of Taxes - Video Learning - Quiz of this Section - Quiz of this Chapter - Exercise Questions - Expanded Reading - Topic Discussion - Examination Materials - Taxation Practices for each chapter to form a diversified resource library of AIGC tax law course. The content is rich, interesting and fascinating, which stimulates students' interest in learning before class; at the same time, it analyses the effect of students' professional self-study according to the students' online course learning situation, adjusts the teaching scheme in time, and realizes the effective integration of AIGC courses inside and outside the classroom, so as to achieve learning before teaching, and teaching based on learning.

3.2.2 Integration of students' in-class interaction based on AIGC "in-class presentations" and teachers' "in-class critiques"

AIGC tax law course in-class presentation is the optimal link for students to develop the ability of self-study course based on AIGC and test the results of their work. According to the order of reporting decided by lot beforehand, two groups are arranged to present and report the results based on AIGC in each credit hour seminar class. The main content of the report was demonstrated by Synthesia synthetic media generation platform. After the report, firstly, students' questions were asked between the groups, secondly, the AIGC-assisted teachers commented on the report, and finally, the members of the reporting group had to respond to the questions raised by the teachers and the students on the spot, and after the class, they needed to modify the case information according to the rationalisation suggestions made, and submit the modified case study report to the teachers in time to complete the second integration of the in-class interaction between the teachers and the students.

4. Specific Countermeasures for AIGC Enabling Innovative Teaching and Learning in Business Courses

4.1 Based on the construction of AIGC business curriculum system

On the premise of clarifying the innovative teaching objectives for AIGC-enabled business courses, the reform will implement content design based on the "Five in One" principle. This involves revising the talent training plan, curriculum outline, and teaching plan, as well as updating and publishing the tax law textbook to further integrate AIGC with coursework. The teaching mode for AIGC innovation courses will incorporate a variety of technologically innovative AIGC-based teaching methods. Additionally, AIGC will assist in organizing and updating the business course resource platform and in establishing a systematic course scenario database. Finally, the curriculum evaluation index will be improved. Based on the "Two Integrations", it is necessary to establish AIGC's "Tax Law" course learning resources on the Super Star platform, and deepen the "school-enterprise" co-operation inside and outside the classroom; at the same time, it is suggested that the systematic AIGC "in-class demonstration" and "teacher's" "in-class demonstration" will be used to improve the teaching mode of AIGC innovative courses. At the same time, it is suggested that the systematic AIGC students' "in-class presentation" and teachers' "in-class comments" should be integrated into the in-class interaction mode.

4.2 Strengthening the teaching staff

This paper examines the impact of AIGC technology on the role of business curriculum teachers and explores how educators adapt to this transformation. It further investigates how teachers leverage AIGC technology to enhance their pedagogical expertise and teaching effectiveness, ultimately transitioning into guides and collaborative partners within students' learning processes. Teachers can be organised to participate in systematic learning, teaching observation and teaching competitions based on AIGC business courses to enhance their all-round abilities in innovative teaching of AIGC-enabled business courses. At the same time, teachers are encouraged to actively participate in academic seminars and exchanges in the field of AIGC business courses, so as to broaden the vision of AIGC business courses and enhance the depth and breadth of teaching in AIGC business courses.

4.3 Construction of the AIGC teaching and learning platform

This initiative integrates AIGC, cloud computing, and big data technologies with a comprehensive suite of hardware and software systems—including interactive smart tablets, all-in-one desktop computers, synchronized displays, classroom interaction systems, mobile teaching solutions, real-time assessment tools, and intelligent learning platforms—to establish an AI-enhanced educational ecosystem. This environment facilitates interactive teaching, mobile pedagogy, real-time engagement, instant evaluation, and centralized resource sharing between educators and learners, ultimately supporting professional inquiry-based instruction, collaborative teaching methodologies, mobile learning workflows, and blended learning approaches.

5. Conclusion

This study establishes a Five-in-One integration with dual convergence framework for AIGC-enabled innovative pedagogy in business education, demonstrated through tax law instruction. Findings reveal that AIGC technology fundamentally transforms teaching by

reconstructing five core dimensions—objective delivery through immersive environments, dynamically updated content design, methodology innovation via virtual simulations, multi-sensory scenario development, and multidimensional evaluation mechanisms—effectively resolving traditional limitations in goal perception, material relevance, and practical contextualization. The dual convergence model extends spatiotemporal boundaries through industry-academia collaborations such as tax education bases and video competitions, while AIGC-driven classroom interactions enable real-time student presentations and AI-assisted faculty feedback. An integrated ecosystem combining cloud computing, intelligent terminals, and cross-modal processing systems supports interactive teaching, mobile learning, and instant assessment, as operationalized through the Chaoxing platform's structured resource modules. Crucially, educators evolve from knowledge transmitters to learning facilitators and instructional co-creators. This holistic approach validates AIGC's transformative potential in applied business education, offering replicable technology-pedagogy-ecosystem pathways while highlighting needs for ethical governance research and cross-disciplinary implementation.

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