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GAI Application Method for Course Content and Curriculum System Reconstruction in New Media Marketing Course

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Abstract. New media marketing occupies an important position in enterprise marketing strategies, and has significant effects in enhancing brand awareness, increasing user stickiness, and improving marketing accuracy. New media marketing is a technological means, and the current transmission of this marketing technology in courses is limited by teaching methods. Therefore, this article explores the method of integrating generative artificial intelligence into the curriculum system to address the current situation of low teaching efficiency and rigid and outdated teaching content in new media marketing courses in universities. Firstly, by designing and distributing survey questionnaires to accurately locate the demand for new media marketing courses, and conducting scientific analysis of the survey questionnaires, generative artificial intelligence is used in the teaching form to intelligently assist the process of online and offline blended learning and self-directed learning. In the course evaluation, bibliometric methods and coding system construction are used to suggest a technical solution that combines learning and optimized content generation, enhancing the recognition of the big language model on classroom teaching scenarios and providing positive feedback for the classroom. Finally, through comparison, the effectiveness of the method proposed in this article is verified, providing new directions for the reform of new media marketing courses.

Keywords: GAI, online and offline courses, marketing dataset, Markov decision

1 Introduction

New media marketing refers to a way to use new media platforms for marketing, which is an innovation in traditional marketing models with the help of the Internet. In recent years, with the development of modern information technology and the improvement of Internet penetration, China's e-commerce industry has shown a rapid development trend. According to the "Development of E-commerce in China in the First Half of 2024" released in 2024, the online retail sales in China reached 7.1 trillion yuan in the first half of 2024, a year-on-year increase of 9.8%. Among them, the online retail sales of physical goods reached 5.96 trillion yuan, an increase of 8.8%, accounting for 25.3% of the total retail sales of consumer goods in society, an increase of 2 percentage points from the first quarter. In the first half of the year, B2C online retail sales increased by 13.6%, accounting for 84.3% of online retail sales. The key monitored online catering platforms and online travel platforms saw sales growth of 21.7% and 59.9%, respectively. The retail sales in the e-commerce industry are constantly increasing, and the market size is also expanding, thus promoting the development and innovation of China's e-commerce industry [1].

The continuous innovation of the electronic service industry has led to the emergence of new formats and models, and new media marketing has therefore become an emerging marketing model. Correspondingly, the rise of this marketing model also urgently requires a large number of new media marketing talents to provide development momentum for the industry, continuously improve new media marketing strategies, innovate new media

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marketing methods, and increase new media marketing content [2].

Vocational colleges shoulder the responsibility of cultivating skilled talents. “New Media Marketing” is generally a professional course for marketing majors in economics and management, with strong practical marketing skills. The new media marketing course is dedicated to cultivating students’ abilities in marketing planning and new media marketing, and plays an important role in promoting students’ future employment and meeting market development needs [3].

The emergence of generative artificial intelligence has changed traditional marketing methods and teaching models. In November 2022, OpenAI has launched the generative artificial intelligence chatbot ChatGPT, which is a pre trained language model based on the Transformation architecture that can understand written prompts and automatically generate coherent and logical text. The core idea lies in the ability to use complex algorithms, models, and rules to learn and generate new and original content from massive amounts of data. This technology covers various types of content generation such as text, images, sound, videos, and games, demonstrating the ability to go beyond traditional data processing and analysis. The information transmission of course content in vocational colleges is based on media such as text, images, sound, and video. Therefore, in the context of the era of generative artificial intelligence, the education mode of vocational colleges has undergone tremendous changes, which forces the relevant courses of vocational colleges to adapt to the trend of the times, actively respond to the challenges of the new era, and provide a good career development path for the students they cultivate [4].

Therefore, this article focuses on the content reconstruction and curriculum system construction of new media marketing courses in vocational colleges, and combines artificial intelligence methods to study the improvement of course teaching forms and evaluation systems. The work done is as follows:

1) Firstly, a survey questionnaire was designed, which incorporated the issues of generative artificial intelligence that are of concern to the system reconstruction, as well as the curriculum format that students are concerned about. Then, data analysis was conducted on the test paper, mainly analyzing the validity of the data and removing some useless data;

2) According to the statistical results of the survey questionnaire, autonomy, fragmentation, and leapfrogging are the characteristics of students’ learning in the current process of completing new media marketing courses. Therefore, a learning mode for new media marketing courses for vocational school students is designed, namely blended learning mode and collaborative learning mode, to improve the teaching method. At the same time, generative artificial intelligence is used to match the content of the two learning modes;

3) Building a proprietary dataset for classroom teaching in new media marketing courses with the development evaluation system as the driving force, and then using technological iteration to update and solve the accuracy problem of intelligent evaluation of classroom teaching, assisting in the development of virtual teaching and research assistants to optimize classroom teaching organization and implementation strategies, and jointly constructing a course evaluation system.

2 Related Work

There are relatively few research achievements in the field of new media marketing. This article conducts research on the relevant achievements of existing scholars and, through comparative analysis, determines the research direction and content of this article. There are novel ways in the field of new media marketing that provide a direction for the integration of artificial intelligence.

Hua Zong, the research object is the online marketing methods of feed. In response to online marketing methods, he advocates the establishment of a new online marketing system. From the perspective of online marketing of feed products, he explores the advantages and information promotion strategies of online marketing of feed products under the background of new media. With the help of the massive user base and market influence in new media, he improves the visibility of feed brands and achieves promotion of feed products [5].

Yongguang Zou, the research object is the online marketing of tourism products. The method is based on big data of online public opinion, and comprehensively uses research methods such as sentiment analysis, LDA theme model, and fuzzy set qualitative comparative analysis. On the basis of establishing comprehensive evaluation indicators to measure the sustained attention loss of tourism resources, this paper explores the factors and paths that affect the sustained attention loss of tourism resources. To provide theoretical reference for understanding the internal logic of sustainable development of tourism resources in the era of new media, and to provide practical guidance for effectively matching public service supply, improving resource quality, and promotion [6].

Weihong Chen of Guizhou University, taking the new media platform "live broadcast+short video+shopping mall" as an example, explained the theoretical mechanism and policy effects of online marketing to promote the development of rural industry in the era of "Internet plus" from both theoretical and case perspectives, and proposed that the government should optimize the digital business environment of agricultural industry by focusing on the construction of rural human resources capacity, increasing the construction of digital infrastructure, creating regional characteristic brands, exploring innovative modes of organization and management, tamping the digital platform of agricultural industry, and improving the government's socialized service ability, so as to promote the rapid transformation of agriculture from traditional marketing to agricultural industry digitalization, and improve digital productivity to boost the development of new agricultural modernization [7].

Chuang Zhang reviewed and analyzed 209 Chinese and English literature, and used the "antecedents strategy outcomes" review framework of social media usage to analyze the current research status of social media marketing strategies in B2B contexts. Based on the shortcomings of existing research, future studies should further explore the synergistic effect of enterprise marketing goals and related subject motivations, the motivations of C-end social media users, with a focus on social sales strategies, thought leadership marketing strategies, influencer marketing strategies, and social media combination strategies, as well as the impact of personal social media use by boundary personnel on the enterprise level and the "dark side" of social media marketing strategies, in order to promote the theoretical construction and deepening of social media marketing strategy research in B2B contexts [8].

In the direction of combining generative artificial intelligence with curriculum, Zhigang Ou believes that relying on SOR theory and integrating AIGC technologies such as speech synthesis, text translation, and image generation, he has constructed an artificial intelligence multimodal teaching resource generation framework consisting of three modules: demand analysis, intelligent generation, and quality control. He has also carried out practical applications of artificial intelligence multimodal teaching resource generation and evaluated it from multiple perspectives. The final results show that the multimodal teaching resources generated by AIGC technology have good audio and image quality; Teachers have an optimistic attitude towards the application of multimodal teaching resources in teaching and believe that most of these resources have reached a usable state [9].

Yu Song first reviewed the current research status of classroom teaching evaluation and optimization, and proposed a new path for promoting the evaluation and optimization of classroom teaching empowered by generative artificial intelligence. He also explored the technical issues of using generative artificial intelligence to assist in solving classroom content [10].

Junfu Yan from Shanghai University of Applied Sciences analyzed the opportunities and challenges of social work curriculum reform under the background of new liberal arts, explored the ideas and paths of building a smart community curriculum group based on digital capabilities, and used the "Social Service Management" course as an example to explore the method of using generative artificial intelligence to assist PBL teaching through human-machine collaboration in social work courses. He verified the outstanding advantages of generative artificial intelligence in conceptual inspiration, teaching resource linking, automated evaluation, and other aspects. Finally, the limitations of generative artificial intelligence in teaching assistance were reflected upon, and it was advocated to further explore the path of teaching reform and integration of industry and education through the use of new technologies, injecting vitality into the construction of China's independent knowledge system for social work [11].

The above research results demonstrate the current status and improvement directions of new media marketing courses, and also explore the application methods of generative artificial intelligence in existing university courses. The research purpose of this article is to apply generative artificial intelligence to new media marketing courses, improve the course content and form with the help of artificial intelligence technology, enhance the teaching quality of new media marketing courses, and enrich the forms of new media marketing courses. Therefore, this article mainly explores the combination of generative artificial intelligence and new media marketing courses. The article is divided into six chapters. Chapter two mainly introduces some research status and achievements of the combination of new media marketing and generative artificial intelligence with courses. Chapter three uses the method of distributing and collecting analysis survey questionnaires, Analyzed the feedback from students after integrating generative artificial intelligence into new media marketing courses, and pointed out the research direction of this article. Chapter 4 discussed the improvement plan of generative artificial intelligence in course teaching form and evaluation. Chapter 5 conducted a comparative experiment, and the control group was a class that did not use generative artificial intelligence. After comparison, ideal control results were obtained. Chapter 6 is the conclusion part, summarizing the research results and shortcomings of this article.

3 Analysis of the Current Situation of New Media Marketing Courses

The reconstruction of course content and the construction of course system are guided by practical needs. Therefore, in the design of course structure, it is necessary to conduct accurate analysis of the current situation and needs of the course. In this section, a survey questionnaire is distributed to investigate the course needs, and then data statistics are used to analyze the feedback data [12]. The design of the survey questionnaire is shown in Table 1.

Table 1. Survey questionnaire design for integrating generative artificial intelligence content into new media marketing courses

Problem design	Answer setting
What grade are you currently in?	Freshman Sophomore Junior
How closely is your major related to marketing?	Directly related (such as marketing, advertising, etc.) Indirectly related (such as media, business management, etc.) Not directly related
What knowledge or skills do you hope to learn through the new media marketing course? (Multiple Choice)	New media platform operation strategy Content Creation and Marketing Strategy Data analysis and audience insights Social media advertising and placement strategies KOL/Internet celebrity cooperation and brand promotion Short video and live streaming marketing skills Search Engine Optimization (SEO) and Marketing Integration of e-commerce and social media
Which practical aspects do you think are the most important in the new media marketing course? (Multiple Choice)	Real project operation or case analysis Simulation exercises and role-playing Tool software application and data analysis Group discussion and project report Industry expert lectures and experience sharing Using generative AI tools for content creation or data analysis Internship opportunities and industry alignment
Which type of teaching resources or materials do you prefer?	Latest industry reports and case studies Practical Skills Handbook and Guide Online video tutorials and live classes Interactive learning software and platform Recommended classic theoretical books and articles Tutorial and Case Study on the Use of Generative AI Tools
What is your attitude towards the application of generative artificial intelligence (such as ChatGPT) in new media marketing?	I am very much looking forward to it and believe it will greatly improve marketing efficiency I have some interest, but I hold a reserved attitude towards its effectiveness Not too concerned, more focused on traditional marketing skills Worried about the ethical or legal issues it may bring

What do you think is the most likely application scenario for generative artificial intelligence in new media marketing? (Multiple Choice)	Content creation and editing (such as articles, advertising copy) Data analysis and audience insights Social media management and automated replies Marketing Strategy Planning and Optimization User Experience and Personalized Recommendations
What do you think are the most important trends in the field of new media marketing in the future? (Multiple Choice)	The Application of Artificial Intelligence and Big Data Continuous innovation in short videos and live streaming Algorithm changes on social media platforms Consumer Behavior and Psychological Insights The marketing potential of metaverse and virtual social networking
How do you hope to promote your personal development or career planning through new media marketing courses?	Enhance professional skills and strengthen employment competitiveness Lay a solid foundation for future entrepreneurship Expand networking resources and stay informed about industry trends Deeply study specific fields and become experts Mastering generative AI tools to improve work efficiency
Do you think the current forms of learning are monotonous and boring?	yes no
Have you used artificial intelligence to attempt generating questions and answers regarding course content	yes no
Have you ever used artificial intelligence to search for relevant course resources?	yes no
What types of artificial intelligence do you know or use?	Bean buns ERNIE Bot ChatGPT IFlytek Spark Bard AI
How do you feel about the experience of artificial intelligence in obtaining course resources and answering course questions?	Difference Commonly Good Very nice
What do you think are the shortcomings of the application of generative artificial intelligence in new media marketing?	Can’t understand my question Give an irrelevant answer Standardized answer
Is it convenient to use artificial intelligence to generate content in the course?	yes no
After introducing generative artificial intelligence, which part of the course do you recommend introducing it in?	Course Preview Course Information Search Course resource assistance Course evaluation
Can generative artificial intelligence help you complete course tasks more easily?	I can I can’t
Do you recommend continuing to use generative artificial intelligence in the course	Recommend Not recommended

3.2 Data Analysis of Survey Questionnaire Feedback Results

The survey questionnaire was distributed to students majoring in economics and management. A total of 200 questionnaires were distributed, 196 were collected, and 187 questionnaires can be used. There are 136 girls and 51 boys.

Firstly, KMO and Bartlett's sphericity tests were used to conduct correlation analysis on the collected survey questionnaires, and suitable samples for principal component analysis were selected to avoid loss of feedback data information that may not contribute to dimensionality reduction [13].

If $\left(A_i, B_i\right)\left\{i \in [1, n]\right\}$ is any two samples in the feedback information, the formula for calculating the linear correlation coefficient of the samples is:

$$\lambda = \frac{\sum_{i=1}^{n}\left(A_i - \overline{A}\right)\left(B_i - \overline{B}\right)}{\sqrt{\sum_{i=1}^{n}\left(A_i - \overline{A}\right)^2}\sqrt{\sum_{i=1}^{n}\left(B_i - \overline{B}\right)^2}} \tag{1}$$

$$\overline{B} = \frac{1}{n}\sum_{i=1}^{n} B_i \tag{2}$$

$$\overline{A} = \frac{1}{n}\sum_{i=1}^{n} A_i \tag{3}$$

After linear correlation calculation, the sample is subjected to Bartlett's sphericity test, and the calculation formula for the detection statistic is expressed as:

$$\phi = \det\left(O\right) = \left|O\right| \tag{4}$$

In the formula, ϕ is a statistical measure obtained from the correlation coefficient matrix obtained from the sample data. By querying the chi square distribution table based on the observed values of degrees of freedom and statistical measures, the corresponding adjoint probability values can be obtained [14]. Then, the correlation between variables can be determined by the relationship between probability p and significance level φ. The overall credibility of the survey questionnaire is expressed as:

$$w_{Alpha} = \frac{t}{t-1}\left(1 - \frac{\sum_{i-1}^{t}\sigma_i^2}{\sigma_{total}^2}\right) \tag{5}$$

After analysis, the data obtained is shown in Table 2.

Table 2. Statistical data list after data analysis

Name	Data
w_{Alpha}	0.92
KMO value	0.922
Approximate chi square	1392.03
Freedom	179
Significance	0.0

After calculation, the value based on the standard term is 0.92, and the overall reliability is very ideal. In addition, the KMO value is 0.922, which is greater than 0.9 and has good validity. Through statistical analysis, students' feedback on learning forms and post class evaluation feedback systems is shown in Fig. 1.

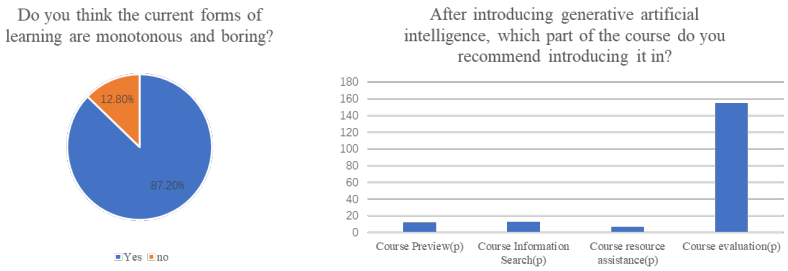

Fig. 1. Display of statistical results

Therefore, the current problems in the teaching of the "New Media Marketing" course in vocational colleges are summarized as follows:

1) The teaching content focuses on theory, but the teaching resources are relatively insufficient. As a comprehensive practical discipline, new media marketing has strong complexity and requires students to master practical skills and abilities. The content involved is extremely extensive, including marketing, psychology, communication, sociology, etc. However, the current teaching content often focuses on theory, which makes it difficult for students to access a wider and deeper range of practical experience in new media marketing during the learning process, and to truly master the practical skills of new media marketing. New media marketing also has relatively high requirements for teaching resources. Currently, some schools have relatively insufficient teaching resources, lacking corresponding textbooks, case libraries, and practical platforms. This makes it difficult for students to obtain sufficient learning resources and support during the learning process, as well as to carry out practical operations.

2) The teaching perspective is somewhat narrow, and the professional teaching staff is weak. The teaching of new media marketing courses is often limited to the thinking mode of traditional media marketing. New media marketing courses are highly specialized and practical professional courses, and some university teachers lack practical experience. In the teaching process, they often only focus on traditional new media marketing fields, such as social media marketing, search engine optimization, etc., and ignore emerging markets and technologies, such as short video marketing, live streaming sales, metaverse marketing, artificial intelligence marketing, etc. The lack of in-depth exploration of the characteristics of new media marketing makes it difficult for students to fully understand the development trends and application scenarios of new media marketing. Due to the fact that new media marketing is an emerging discipline, the professional level of higher education cannot match the current development of new technologies. They only have basic marketing knowledge and traditional marketing concepts, but are unable to adapt to the rapid changes and developments in the field of new media marketing. There is a lack of teachers with rich practical experience and in-depth theoretical knowledge, which limits the overall teaching quality. Many teachers lack relevant experience and professional knowledge, making it difficult to achieve simple and easy to understand teaching in the teaching process, resulting in poor teaching effectiveness.

3) The lack of practical teaching elements and the tendency towards a single assessment method make it difficult for students to truly master the practical skills of new media marketing. The new media marketing course requires students to possess certain practical abilities, but the current teaching process lacks practical teaching elements, making it difficult for students to truly master the practical skills of new media marketing. The new media marketing course requires a combination of practical and theoretical teaching, but balancing the relationship between the two is a challenge. Teachers need to focus on the design and implementation of practical teaching while ensuring the systematicity and completeness of theoretical knowledge, in order to help students better master the practical skills of new media marketing. Especially at present, some schools' assessment methods focus too much on the examination of theoretical knowledge, while neglecting the assessment of students' practical abilities. This may lead students to focus too much on learning theoretical knowledge and overlook the importance of practical operations [15].

In terms of course format and evaluation, students have a high demand for generative artificial intelligence. Therefore, based on the above survey results, this article reconstructs the course content and structure in terms of learning format and course evaluation system.

4 Using GAI to Improve New Media Marketing Curriculum

According to the statistical results of the survey questionnaire, learning forms and post class feedback are the main directions for curriculum improvement. At the same time, combined with the learning characteristics of the current new media marketing curriculum, namely students' autonomy, fragmentation, and jumping in the process, this article improves the curriculum form by changing from the traditional offline classroom teaching form to two integrated online learning forms: blended learning mode and collaborative learning mode. At the same time, generative artificial intelligence is used to match the content of the two learning methods.

4.1 Improvement Method for Blended Learning Mode of Online and Offline

The hybrid mode combines online learning with traditional offline teaching, providing a more flexible and comprehensive learning environment. The core lies in achieving seamless integration and complementarity between online and offline learning. The framework of the learning mode is shown in Fig. 2.

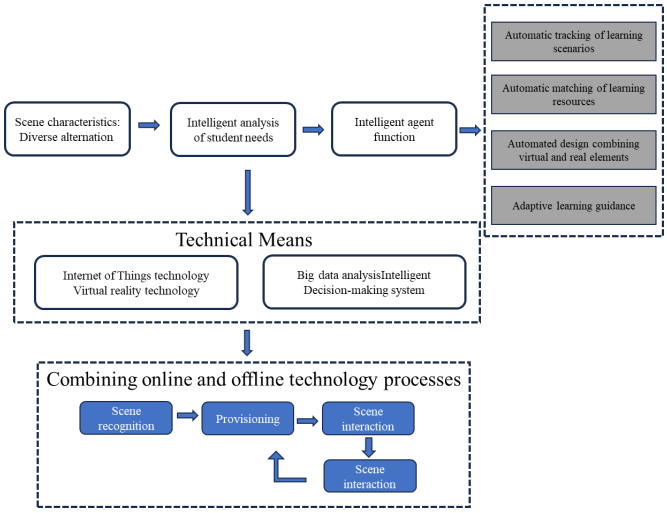

Fig. 2. Technical roadmap in hybrid mode

During the learning process, the main challenge faced by intelligent agents is cross domain learning tracking and resource allocation. The uniqueness of cross domain learning tracking lies in the need to integrate multi-source heterogeneous data from online and offline sources to construct a complete learning trajectory. Resource allocation exhibits specificity in a virtual real integrated environment. Intelligent agents need to provide learners with the most suitable learning resources and activities in a dynamically changing learning environment. This involves dynamic decision-making based on the learning environment and learner status, whether conducting specific learning activities online or offline, as well as how to select and allocate corresponding learning resources. Generative AI plays a crucial role in this regard, as it can dynamically generate or adjust learning content based on learning contexts, achieving personalized learning experiences. The design of learning activities in a mixed environment is a key step in the support process. Intelligent agents need to flexibly arrange online and offline activities based on learning objectives and contextual characteristics, and ensure their organic connection. This design not only considers the effectiveness of knowledge transfer, but also fully utilizes the advantages of online and offline environments to create immersive and interactive learning experiences. In terms of technical support, the application of AR/VR technology and the Internet of Things provides new possibilities for hybrid learning environments. These technologies can create immersive learning experiences, effectively compensate for the limitations of online learning, and achieve seamless data collection both online and offline, laying the foundation for comprehensive learning behavior analysis.

4.2 Collaborative Mode Reform Method

In collaborative learning, multi person collaboration and cross temporal team collaboration are two prominent features. Learners are no longer limited to traditional face-to-face communication, but can collaborate across time and space constraints. This model provides learners with more flexible and diverse learning opportunities, while also placing higher demands on intelligent agents. Dynamic team building is a crucial aspect of collaborative learning. Intelligent agents need to form the optimal team composition based on the learner's knowledge background, learning style, and collaborative ability. This process not only requires a deep understanding of individual characteristics, but also considers the overall synergy of the team. Generative AI can simulate collaboration scenarios of different team combinations in this process, predict possible collaboration outcomes, optimize team composition, and lay the foundation for effective team collaboration. The process schematic of the collaboration mode is shown in Fig. 3.

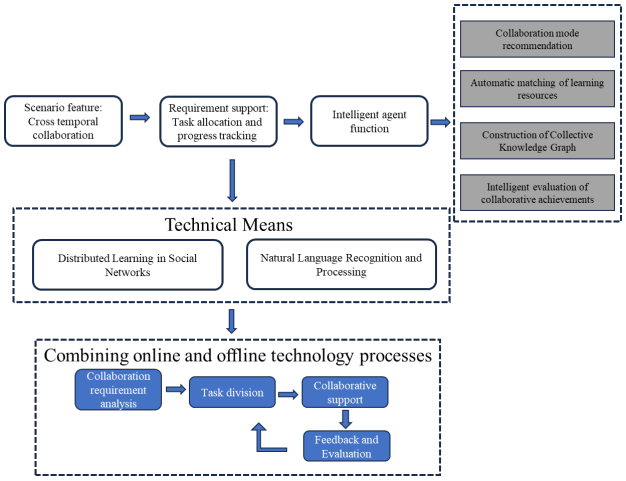

Fig. 3. Schematic diagram of technical support principle for collaborative process

In order to achieve the above learning methods, this paper proposes an intelligent agent model based on reinforcement learning, whose core is to formalize the learning process as a Markov decision process [16]. The model framework is shown in Fig. 4.

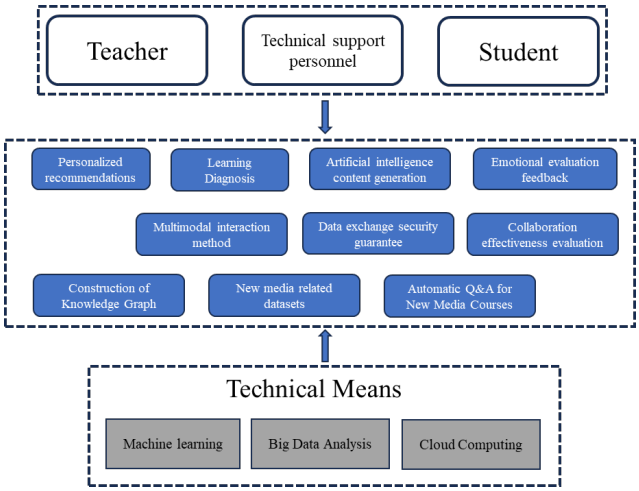

Fig. 4. Model intelligent agent decision-making framework

The pseudocode for the model section is as follows [17]:

```
Define a neural network architecture for Q(s, a; θ)
Input layer: size |S| (state dimensionality) + |A| (one-hot encoded action)
Hidden layers: (optional, define as needed for nonlinearity)
Output layer: size |A| (Q-values for each action)
for episode = 1 to N do
    initialize sequence s_1 = {s_1^1, s_1^2, ..., s_1^|S|}
    initialize action a_1 randomly
    for t = 1 to T (episode length) do
  Execute action a_t in emulator and observe reward r_t and next state s_{t+1}
        r_t, s_{t+1} = step(s_t, a_t)
        Store transition (s_t, a_t, r_t, s_{t+1}) in replay memory D
        D.append((s_t, a_t, r_t, s_{t+1}))
        Sample random minibatch of transitions (s_j, a_j, r_j, s_{j+1}) from D
        for b = 1 to B do
            (s_j, a_j, r_j, s_{j+1}) = sample(D)
            Compute target Q-value
            if episode_terminated(s_{j+1}) then
                y_j = r_j
            else
                  Use max_{a'} Q(s_{j+1}, a'; θ^-) to approximate optimal future
value
                θ^- are the target network parameters, copied periodical
end
```

A: The set of learning actions, which may include learning specific knowledge points, reviewing, doing exercises, etc, Move. Each action may affect the mastery of multiple knowledge points.

T: State transition function;

This function captures the uncertainty of learning. For example, the same learning action may have different effects on different learners.

R: Reward function;

E: is learning efficiency, and P is participation.

G: Dynamic Knowledge Graph,

V: is a set of knowledge points, E is a set of knowledge relationships

The innovation of this model lies in integrating the dynamic knowledge graph G into the state transition function T, allowing the learning process to consider the structured nature of knowledge.

Based on this model, our core algorithm goal is to find the optimal strategy, to achieve this goal, we adopt an improved Q-learning algorithm,

Among them, the state transition s not only depends on the current state s and action a, but also is influenced by the knowledge graph G.

4.3 The Application of GAI in Course Evaluation

Curriculum evaluation plays an important role in the curriculum system, and its primary task is to check or assess whether educational objectives have been achieved. Through evaluation, it is possible to clarify whether the course has achieved the expected teaching effect, thereby evaluating the quality of the course. Course evaluation can help the teaching subject discover the gaps and problems between the course and the predetermined goals, and then diagnose the course, achieving a closed-loop control and improvement of the course, identifying the shortcomings and areas that need improvement in the course. At the same time, evaluation can monitor the teaching process, adjust teaching strategies and methods in a timely manner, and ensure the smooth progress of teaching activities. Therefore, this section mainly discusses the improvement methods of generative artificial intelligence in the course evaluation process. With the development of an evaluation system as the driving force, a proprietary dataset for classroom teaching is constructed, which serves as the foundation and basis for carrying out intelligent evaluation and optimization work of new classroom teaching, At the same time, using generative

artificial intelligence technology to iteratively update and solve the accuracy problem of intelligent evaluation in classroom teaching, and using it as the main body of new intelligent evaluation in classroom teaching. In addition, generative artificial intelligence optimizes classroom teaching organization and implementation strategies based on virtual teaching and research assistants in course evaluation, which is an important means of optimizing new intelligent classroom teaching.

This study aims to enhance the effectiveness and accuracy of the content generated by the big language model by improving its understanding of classroom teaching scenarios.

Firstly, the bibliometric method is used to systematically review the research on classroom teaching coding systems in the Wanfang database and CNKI database from 2019 to 2024, and extract highly applicable codes. The bibliometric method is a modern scientific research method used to study the distribution structure and quantity relationship of literature, and then explore the structure, characteristics, and laws of corresponding fields, which can greatly improve the universality of the evaluation system. In this study, a total of 15 high-frequency codes were extracted. Subsequently, Delphi method was used to rely on subjective experience of experts to judge the importance of coding, and classified according to the basic layer, thinking development layer, and innovative application layer. Through two rounds of back-to-back method, 11 codes with operability and appropriateness were selected, forming a new classroom teaching coding system as shown in Table 3.

Table 3. Statistical data list after data analysis

Code name	Coded meanings
Compare	Compare the similarities and differences of marketing targets, and improve the marketing level of target products by combining existing marketing cases.
Reasoning transfer	By summarizing experience, observing and comparing, predicting regular events in the new media marketing process, and intelligently planning marketing plans.
Expand	In the existing evaluation system, proactive expansion analysis is conducted based on course content and student needs, resulting in a more diverse dialogue corpus.
Deepen	Based on dialogue keywords, conduct a more in-depth exploration of course content
Summarize	Summarize and analyze the keywords in the new media marketing course to help students reach a deeper level of understanding.
Practical application	By inputting keywords, methods and strategies related to new media marketing can be automatically generated, and case assistance can be provided through automatic search for relevant cases.
Create	On the basis of existing cases and teaching content, help students generate new ideas and strategies around the themes of new media and marketing, and provide technical routes for putting them into practice.

The overall technical framework for course evaluation is shown in Fig. 5. The classroom teaching discourse that needs to be evaluated is input into the model, and a candidate set of semantic similarity TopN [18] is retrieved from the case knowledge base as examples. These examples will be used as prompts to input into the large language model, and then output the associated codes and reasons. The above combination methods have advantages in handling complex situations and understanding deep text meanings. They can effectively identify key features such as knowledge construction, thinking inspiration, and ability cultivation contained in the classroom teaching process based on the evaluation system, increase the interpretability of evaluation results, and make classroom teaching evaluation more in line with the development goals of education and teaching in the new era.

After the above process, this article improved the teaching format of the course by incorporating generative artificial intelligence methods in the course form and evaluation stage, enhancing the interest and vividness of students' learning of new media marketing courses, and providing new ideas for course promotion.

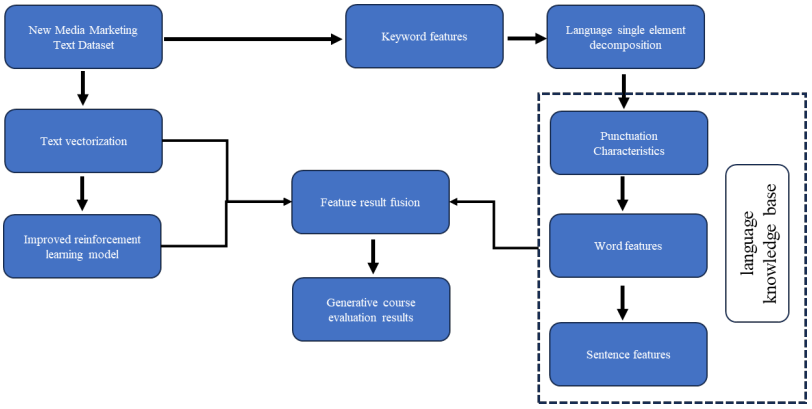

Fig. 5. The technical route of generative course evaluation

5 Comparison Before and After Improvement

Finally, this article analyzes the effectiveness of the improved new media marketing course through course project assessment. The experimental students are divided into an experimental group and a control group, and the learning levels of the two groups are basically similar. Through independent sample testing, it can also be found that there is no significant difference in learning performance among different class levels before the experiment. Subsequently, the experimental class A, which used a mixed online and offline teaching mode for teaching, showed a significant increase of 4.3 points in average score after the experiment, while the B class, which used self-directed learning, showed an increase of 2.7 points in average score. The comparison results are shown in Fig. 6.

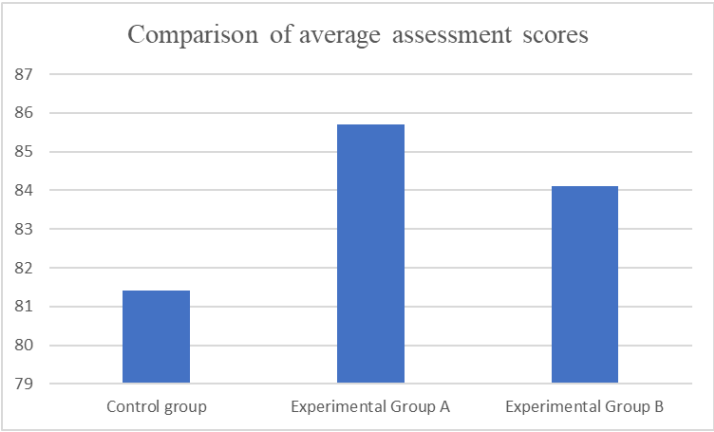

Fig. 6. Comparison of average grades

In order to verify the effectiveness of the curriculum evaluation system proposed in this article, a study was conducted on 8 teachers from a teaching and research department in the field of economics and management at our school. Among them, 4 teachers served as the experimental group and used generative artificial intelligence technology to conduct teaching evaluation and optimization, while the other 4 teachers served as the control group and used traditional observation and evaluation methods to evaluate and optimize classroom teaching. There was no significant difference in comprehensive literacy and teaching ability between the experimental group and the control group of teachers, both of whom were young teachers with relatively weak professional levels. The experiment selected a teaching cycle that lasted for three months. Our research team integrates the

analysis techniques described earlier to implement an interactive platform for teachers and students, and opens a platform account for each experimental group teacher to upload audio and video lesson examples on their own. The teacher completed a 40 minute lesson on their own, and the comparison of teaching effectiveness is shown in Fig. 7.

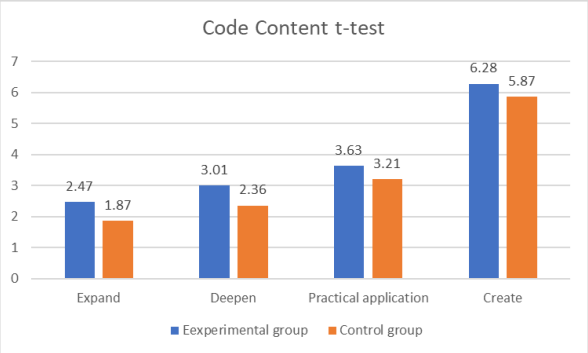

Fig. 7. The t-test effect of generative artificial intelligence on improving course evaluation

There is a significant difference in the effectiveness of classroom teaching between teachers who use generative artificial intelligence technology to implement the path and those who use traditional observation and evaluation methods. Specifically, the proportion of basic knowledge theory in the experimental group classroom was significantly lower than that in the control group, while the proportion of emotional expression, expansion, deepening, practical application, and innovative creation in the experimental group classroom was significantly higher than that in the control group. This indicates that the new classroom teaching and traditional observation and evaluation classes empowered by generative artificial intelligence proposed in this study both focus on thinking inspiration and can promote teaching optimization to a certain extent. However, overall, the former is still superior to the latter in evaluation and optimization. Its advantages mainly lie in improving students' high-dimensional cognition, complex information processing ability, and innovative application ability. The reason is that generative artificial intelligence can provide personalized teaching support and strategy feedback, allowing teachers to obtain targeted teaching evaluation and optimization suggestions in a timely manner, enhancing the effectiveness of classroom questioning and dialogue, and helping teachers break through the limitations of traditional thinking, try more innovative teaching methods and solutions, and stimulate students' creative thinking. Based on understanding complex concepts, Improve the ability to solve practical problems through practice.

6 Suggestions for the Reform of New Media Marketing Curriculum

Developing high-quality and efficient classroom teaching is an important channel for improving education quality and talent cultivation level. How to provide accurate classroom teaching evaluation feedback and personalized optimization strategies for teachers has become a key link in the high-quality development of teaching. This study integrates generative artificial intelligence into classroom teaching forms, develops an evaluation system as a driving force to construct a annotated dataset for classroom teaching, and proposes a promotion path for the integration and development of generative artificial intelligence and classroom teaching by iteratively updating technology to solve the accuracy problem of intelligent evaluation in classroom teaching. Future research can further focus on the application of big language modeling technology in precise classroom evaluation and personalized teaching development, providing reference ideas for promoting teachers' professional development and improving the quality and efficiency of teaching and research work. After this experimental research, the application of blended online and offline teaching in the course of "New Media Marketing" for vocational management majors has achieved certain research results. However, due to the subjective reasons of scholars and the influence of objective conditions, there are some shortcomings in the implementation process of this study that need further improvement. At the same time, due to limited research level and time, there is a lack of experience in teaching design, which has a certain impact on the practical application of building a hybrid online and offline

"New Media Marketing" course and a self-learning "New Media Marketing" course. The blended online and offline teaching mode and self-directed learning teaching mode constructed in this study were only applied to 187 students in the course of "New Media Marketing" in the economics and management major of our school, and have not been applied in marketing courses in other schools and majors. Therefore, this study has certain limitations and the theoretical and practical research needs to be improved.

Furthermore, this study cannot fully achieve a people-oriented approach. The teaching process of this study can only analyze students' learning behavior data when analyzing them. However, in terms of students' emotional needs, it is still based on the subjective observation and judgment of teachers. However, when facing a large number of students in the class, teachers cannot pay attention to the emotional state of each student in detail. The emotional fluctuations of students during the learning process can also affect their learning outcomes, so more advanced technology is needed to support the recording and intervention of students' emotions in the teaching process. In the experimental process of this study, only the learning trajectory of students was recorded as data, lacking attention to the emotional changes of students, and cannot achieve the true meaning of "student-centered". In future research, it is expected to develop information technology that supports student emotion recognition, in order to fill the gap in emotional data in the teaching process and create a truly student-centered and student-centered smart classroom.

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