

Innovative Exploration of the Implementation Plan for Ideological and Political Education in Higher Vocational College Courses under the Background of Generative AI: Taking "Data Processing" as an Example

Jinren Zhu

(School of Artificial Intelligence, ZheJiang Business Technology Institute, China
Email: 20210908@zbtj.edu.cn)

Abstract:

With the in-depth penetration of generative AI technology in vocational education, the teaching of programming courses in higher vocational colleges will face the dual challenges of technology dependence and gradual weakening of capabilities, as well as the disconnection between knowledge imparting and value guidance. Taking the "Data Processing" course as an example, this paper first systematically analyzes the two-way impact of generative AI on course teaching, points out the main problems existing in the current implementation of ideological and political education in professional courses, and then constructs a new teaching model of ideological and political education in courses featuring "AI empowerment, ideological and political integration, and practical drive" from four dimensions: course standard reconstruction, ideological and political content mining, teaching mode optimization, and evaluation mechanism innovation. Teaching practice shows that this model can not only effectively enhance teachers' ability to implement ideological and political education in courses, but also effectively achieve the coordinated development of skill cultivation and value guidance, providing a reference for the implementation of ideological and political education in programming courses in higher vocational colleges.

Keywords — Generative AI; Data processing ;Implementation of ideological and political education; Teaching mode

I. INTRODUCTION

This document is a template. An electronic copy can be downloaded from the conference website. For questions on paper guidelines, please contact the conference publications committee as indicated on the conference website. Information about final paper submission is available from the conference website. In January 2019, The State Council issued the "National Vocational Education Reform Implementation Plan", which clearly states: "Vocational education should implement the fundamental task of fostering virtue and nurturing talent, improve the education mechanism that combines moral and technical education and

integrates work and study, perfect the evaluation mechanism, and standardize the entire process of talent cultivation." As the core carrier for achieving "all-round education", the essence of ideological and political education in courses is to cultivate high-quality technical and skilled talents that meet the needs of social and economic development through the integration of "knowledge imparting, skills training and value shaping" in a three-dimensional way. Generative AI is a technology that relies on multimodal large models to generate text, images, videos, codes and other content. Generative AI can learn and simulate the inherent laws of things, and generate new content with logic and coherence based on users' input data.

According to statistics from the Cyberspace Administration of China, as of March 31, 2025, A total of 346 generative artificial intelligence services have been filed with the Cyberspace Administration of China, among which AI applications in the education sector account for 28.3%. It is evident that products related to generative AI technology, such as Doubao and DeepSeek, have been widely adopted in the field of education due to their outstanding capabilities in logical reasoning and content generation.

Take Zhejiang Industry & Commerce Vocational College as an example. The core course "Data Processing" of the Computer Network Technology major takes SQL Server database technology and operation and maintenance as the core content. Through the study of this course, students are required to master the knowledge and skills such as the design of SQL Server database, CRUD operation of SQL, data integrity and operation and maintenance management. The corresponding job positions include database development, database operation and maintenance, data analyst and other data processing-related positions. In the process of data processing, issues such as data privacy, data authenticity verification, and data security are involved, and these are precisely the problems we need to focus on in the era of big data. Therefore, this course naturally has the advantage of being a carrier for integrating ideological and political education into the curriculum.

In the teaching of the past two years, it has been found that many students overly rely on AI tools such as Wenxin Yiyan, Doubao, and DeepSeek. They like to use these tools to complete code writing and data processing tasks in their regular classroom exercises and after-school assignments. This strong reliance on AI tools has gradually weakened students' understanding of technical principles and the formation of professional qualities. Of course, the popularization of generative AI technology has also brought convenience to the teaching of courses. For instance, teachers can utilize AI tools to search for information, generate practical cases, and so on. Students can also use these tools to solve doubts and find solutions, which plays an auxiliary role in autonomous learning. Meanwhile, with the rapid

development of generative AI technology, traditional ideological and political education in courses has problems such as ambiguous ideological and political goals, disconnection from course knowledge content, single implementation methods, and formalized evaluation methods, which are difficult to meet the teaching needs in the context of generative AI. In view of this, this paper explores the deep integration methods of generative AI and ideological and political education in courses, aiming to address two core issues: how AI technology can assist rather than replace the cultivation of students' vocational skills and how ideological and political elements can be deeply integrated with course knowledge and skills.

II. THE TWO-WAY INFLUENCE OF GENERATIVE AI ON THE TEACHING OF THE "DATA PROCESSING" COURSE

Generative AI, with its super-strong logical reasoning ability of large models, can conduct brain-like logical thinking reasoning based on the background information input by users, thereby generating text, code, data cases and other content. Its impact on all aspects of the "Data Processing" course teaching presents a dual feature of both opportunities and challenges.

2.1 The positive support of generative AI for course teaching

In the teaching of the "Data Processing" course, the databases provided along with the book are usually used for instruction. In most cases, they are simulation data from library management systems, student information management systems, etc. The biggest drawback of such databases is that they are divorced from reality and lack real application scenarios. Students have little interest in such data. Generative AI technology can generate customized cases based on users' demands. For instance, by inputting the export data processing requirements of a certain sensor enterprise in Ningbo for 2024 (including order tables, customer tables, logistics tables, and the order volumes of the TOP10 customers), AI can quickly generate the completed database table structure, test data, and also generate teaching task sheets with key points marked. In addition, AI can generate differentiated case exercises. For students with weak foundations, it

can provide CRUD basic exercises for SQL. For those with stronger abilities, it can generate extended tasks related to knowledge points such as stored procedures and triggers, achieving individualized teaching. This has also significantly reduced the case development costs for the instructors. From the perspective of students, for common problems that they cannot understand or solve on their own, such as incomplete understanding of knowledge points and SQL statement syntax errors during the learning process, they can promptly rely on AI for assisted learning. AI can help students solve problems through problem decomposition and step-by-step guidance.

2.2 The Negative Impact of Generative AI on Course Teaching

In teaching, it has been found that over 70% of students overly rely on AI tools. Whether it is in-class practical operations or in-class tests, they prefer to use AI tools to generate answers and then simply copy them without thinking. This strong reliance on AI tools leads students to develop inertia, and they fail to truly master the knowledge and skills of the courses without thinking or practicing them. When it comes to solving some complex problems, it is completely impossible to handle them independently, which goes against the training goal of higher vocational colleges that emphasizes practical operation and strong skills. In addition, the code generated by AI may have security vulnerabilities such as SQL injection risks. If students directly use unverified code, they are likely to develop the bad habit of neglecting code security, which is also out of step with the job requirements of enterprises for data security operation and maintenance.

III. ANALYSIS OF THE CURRENT SITUATION AND PROBLEMS OF IDEOLOGICAL AND POLITICAL EDUCATION IMPLEMENTATION IN THE "DATA PROCESSING" COURSE IN HIGHER VOCATIONAL COLLEGES

To accurately identify the breakthrough point for the reform of ideological and political education in courses, this paper systematically reviews the current implementation status of ideological and political education in courses through methods such as course teaching materials (course standards,

teaching plans, teaching designs, and examination papers), student questionnaires, and interviews with professional teachers. It is found that the core issues are concentrated in four dimensions: "objectives, content, methods, and evaluation".

3.1 The ideological and political goals are too broad and have not formed a synergy effect with the cultivation of professional qualities

Most teachers, when writing curriculum standards, usually set the ideological and political goals of the courses as cultivating patriotism, integrity awareness, etc., but fail to refine the ideological and political goals in combination with the technical attributes of the courses and job requirements. For instance, the position of database operation and maintenance management requires employees to possess professional qualities such as security awareness of data backup and a sense of responsibility for troubleshooting. However, in the curriculum standards, these professional qualities have not been transformed into practical ideological and political goals. Even some teachers may believe that technical courses like "Data Processing" cannot be effectively integrated with ideological and political education, resulting in a disconnection between the ideological and political goals of the courses and technical training, and failing to form a synergy effect of both moral and technical cultivation.

3.2 The ideological and political content is fragmented and the integration with course knowledge is stiff

The content of ideological and political education in courses usually falls into two extreme situations: one is no ideological and political education at all, and the other is hard ideological and political education. The lack of ideological and political education is manifested in the fact that in classroom teaching, only knowledge and skills such as database design and SQL statements are taught, completely ignoring the value guidance function of the course. Hard ideological and political education is manifested as forcibly inserting some ideological and political content that is not related to the course content. For instance, when explaining the SELECT statement in SQL statements, the story of a certain scientist's dedication to the country through science and technology was suddenly interspersed. In

classroom tests or assessments, the appearance of some short-answer questions on ideological and political education makes the ideological and political elements seem stiff and hard for students to accept.

3.3 It mainly focuses on narration and lacks immersive ideological and political experiences in practical scenarios

The traditional implementation of ideological and political education in courses mainly relies on teachers' lectures. However, the "Data Processing" course is a technical course that emphasizes practical operation. In actual teaching, there is a lack of immersive experiences of ideological and political education through practical operation for students. For instance, when teaching about "backing up and restoring databases", teachers usually explain and demonstrate the methods of backing up and restoring databases, but fail to guide students to reflect on the responsibility risks of data loss due to untimely backups. Similarly, while generative AI was used to generate teaching technology cases, AI was not utilized to simulate scenarios such as data leakage and database injection vulnerabilities, allowing students to understand professional ethics in the process of solving real problems.

3.4 The evaluation mechanism is formalized, and ideological and political assessment lacks process and pertinence

The current assessment of ideological and political education mainly focuses on course test questions, in the form of objective questions or short-answer questions that are not highly integrated with the course. This evaluation mechanism is overly simplistic and formalistic, lacking an evaluation of students' professional behavior performance. Moreover, it does not run through the entire learning cycle of the course and lacks process-oriented assessment, which leads students to focus only on skills while neglecting qualities in their course learning.

IV. INNOVATIVE PATHS FOR THE IDEOLOGICAL AND POLITICAL TEACHING MODE OF THE "DATA PROCESSING" COURSE UNDER THE BACKGROUND OF GENERATIVE AI

In response to the above-mentioned problems existing in the implementation of ideological and political education in courses, and in combination with generative AI technology and the training goal of higher vocational colleges to cultivate high-quality applied skilled talents, this paper constructs a new teaching model of ideological and political education in courses that is empowered by AI, integrated with ideological and political education, and driven by practice from four dimensions: curriculum standard reconstruction, ideological and political content mining, teaching mode optimization, and evaluation mechanism innovation.

4.1 Reconstruct the curriculum standards and establish a dual-objective system of "skills + ideological and political education"

Revise the course standards for "Data Processing", deeply integrating ideological and political goals with skill goals, job qualities, skills competitions, and professional qualification certificates, to form a three-level ideological and political goal system consisting of overall goals, module goals, and class hour goals. The overall objective of the course is to cultivate high-quality technical and skilled talents with technical literacy, ethical literacy and professional literacy. Students should not only master the core skills of SQL Server database technology and operation and maintenance, but also have the awareness of data privacy protection and adhering to data authenticity. At the same time, they also need to cultivate the craftsmanship spirit of being meticulous, responsible and collaborative. The course is divided into five major modules based on knowledge and skills, and the ideological and political goals of each module are concretized as shown in Table 1 below:

TABLE I
CURRICULUM MODULE OBJECTIVE SYSTEM

Course module	Technical objective	Ideological and political goals
Database design	Master the drawing of E-R diagrams and the design of relationship tables	Cultivate systematic thinking and a rigorous attitude
SQL basic operations,	Master the basic operations of CRUD, stored procedures, triggers, views, etc	Cultivate logical thinking and a sense of norms

data integrity	Master domain integrity, entity integrity and referential integrity	Cultivate a spirit of seeking truth from facts and taking responsibility
database operation and maintenance and security	Master database backup and recovery, performance optimization, data encryption, etc	Cultivate the spirit of craftsmanship and safety awareness
comprehensive project practice	Complete the real data processing project for enterprises	Cultivate teamwork

In the teaching plan, clearly define the ideological and political integration points for each class period. For instance, when discussing the content of database backup and recovery, the technical objective of the class period is to master the operation of complete and differential database backup, and the ideological and political objective is to develop a good professional habit of regular backup. Use AI tools to design and generate case scenarios where data loss occurs due to database backup failure. Let students perceive the ideological and political goals through practical operations in class.

4.2 Deeply explore ideological and political content and build a three-dimensional ideological and political element library of "courses +AI+ positions"

Centering on the dual goals of "skills + ideological and political education", ideological and political elements are respectively explored from the dimensions of courses, AI, and positions to achieve the unity of knowledge, skills, and value shaping. The specific construction logic and content are as follows:

(1) Closely adhering to the course objectives, extract ideological and political elements,

explore the ideological and political connotations contained in the course knowledge and skills system. Focus on the following aspects: By combining the case of the real-time monitoring system of the Internet of Things, let students understand the interrelationships among the various modules of the system, cultivate a holistic thinking and a rigorous work style, avoid overall failure due to local omissions, and cultivate students' systematic thinking and rigorous attitude. Through

cases of vulnerabilities such as SQL injection, the threat of logical flaws to system security is demonstrated, enabling students to understand the importance of standardized code writing and data processing operations, fostering compliance awareness, and cultivating students' logical thinking and standardization consciousness. By using negative cases such as financial data fraud, it emphasizes the professional bottom line of data authenticity and practical work, and cultivates students' spirit and awareness of seeking truth from facts and taking responsibility.

In the course project, roles such as development, testing, and operation and maintenance are divided, and students are required to complete tasks collaboratively, fostering a team spirit of communication, collaboration, and mutual trust.

(2) Utilize AI technology to assist in the implementation of ideological and political education

By leveraging AI technology to generate intelligent teaching cases, and with the help of AI tools to collect and organize a large number of actual cases related to databases, natural language processing technology is utilized to classify and label the cases, facilitating teachers to quickly search for and display relevant cases in the classroom, and helping students better understand the connection between ideological and political elements and course knowledge. In addition, teachers can also use AI technology to build virtual database application scenarios, allowing students to carry out database design, operation and maintenance, and other operations in a simulated enterprise environment. At the same time, they can set some tasks with ideological and political elements, such as how to adhere to professional ethics and protect data security when data is facing security threats, to enhance students' practical experience and ideological and political insights. In terms of personalized recommendations, teachers can, based on students' performance and feedback during the course learning process, use AI algorithms to recommend ideological and political extension resources suitable for each student's learning progress and interests.

(3) Improve ideological and political elements in combination with job requirements

By using AI to capture industry recruitment data and job competency models, the professional quality requirements for positions can be clarified, such as the confidentiality awareness of data analysts and the service awareness of customer service positions, to cultivate students' sense of job responsibility and professional reverence. Jointly organize technical competitions, on-the-job training and other activities with enterprises, allowing students to understand professional missions in real workplace scenarios, such as the social value of engineers and the inclusive responsibility of financial practitioners, while cultivating a sense of dedication and belonging to the industry. In addition, by tracking industry policies, technological trends and changes in job demands through AI, such as updates in AI ethics regulations and professional norms for emerging positions, ideological and political elements are dynamically updated to ensure the timeliness and pertinence of education.

The three-dimensional ideological and political element library of "courses +AI+ positions" consolidates the ideological and political foundation through the course dimension, innovates educational forms through the AI dimension, and strengthens career matching through the position dimension. It deeply integrates knowledge imparting, skill cultivation and value shaping, ultimately achieving the dual goals of "skills + ideological and political education", and helping students grow into compound talents with both professional ability and professional quality.

4.3 Optimize the teaching mode and create a three-in-one implementation process of "AI+ project-driven + ideological and political experience".

Based on the advantages of generative AI technology and the practical nature of the "Data Processing" course, a full-cycle, immersive teaching implementation process from "before class - during class - after class" is constructed to achieve a deep integration of AI tools, project tasks and ideological and political experiences.

4.3.1 AI-empowered previewing before class precisely lays the groundwork for ideological and political goals

Based on students' theoretical knowledge and skill mastery, teachers use AI tools such as Doubao and DeepSeek to design differentiated pre-class preview content. They extract ideological and political points from the preview materials with AI technology and send them to students through the Chaoxing platform, guiding students to enter the classroom with ideological and political thinking.

4.3.2 Project-driven practical operation in class, immersive integration of ideological and political experience

Taking real enterprise data processing projects as the carrier and combining AI tools to build a classroom closed loop of "problem scenarios - practical solutions - ideological and political reflections". By using AI tools to create real project scenarios, taking the processing of the 2024 Double 11 order data of a certain e-commerce platform in Ningbo as an example, teachers utilized AI tools to generate a complete project package according to the set requirements, including database structures such as order tables and user tables, massive test data, as well as hidden issues like "data duplication" and "permission vulnerabilities". Simulate the job division in enterprises and divide students into "Database Development Group", "Operation and Maintenance Group", and "Data Analysis Group" to recreate real collaborative scenarios. During the project implementation, ideological and political related tasks were set up. For instance, when the "Operation and Maintenance Team" was performing a database backup operation, the AI suddenly triggered a simulated fault that "backup failure led to the loss of some order data", requiring students to investigate the cause and restore the data. After completion, the teacher guides the students to discuss "the impact of data loss on enterprises and users", strengthening the awareness of "responsibility and commitment" and "risk prevention". When the "development team" was writing query statements, the AI prompted "There is a risk of SQL injection vulnerability". Students need to optimize their code and reflect on "the relationship between standardized coding and data

security", deepening their "professional ethics" literacy.

.3 After-class AI expansion practice to deepen the transfer of ideological and political literacy

In the after-school ideological and political expansion practice, AI can deepen the transfer of students' ideological and political literacy through precise and platform-based means. The core path is reflected in two major dimensions. Firstly, personalized task push based on classroom performance: AI identifies weak points in ideological and political literacy by analyzing students' classroom performance. For instance, for students with insufficient "teamwork" skills, it pushes the task of "completing the design of a community population data statistical database through group cooperation", requiring them to record the problems and solutions during the collaboration process. For students with a lack of understanding of "data ethics", assign the task of "analyzing the compliance of user data usage agreements on social platforms" and write an analysis report to achieve a precise match between ideological and political practice tasks and individual quality deficiencies. Secondly, AI-assisted ideological and political reflection and sharing platform construction: AI builds an online platform to guide students to upload their practical achievements, and standardizes the reflection content through the "Ideological and Political Reflection Form". At the same time, relying on keyword extraction and text analysis techniques, representative reflection cases are selected for presentation in subsequent classes to promote the exchange and transfer of ideological and political cognition among students. Through the closed-loop design of "precise task-driven - structured reflection - typical case radiation", the ideological and political cognition in the classroom is effectively transformed into practical ability after class, promoting the in-depth transfer and internalization of students' ideological and political literacy.

4.4 Innovate the evaluation mechanism and establish a dual-subject ideological and political evaluation system

Breaking through the evaluation limitations of traditional single tests and integrating generative AI technology, a dual-subject evaluation system for

ideological and political education in courses, namely "teacher evaluation + AI-assisted evaluation" and "process evaluation + summative evaluation", is constructed to achieve precise and dynamic assessment of students' ideological and political literacy.

4.4.1 Clarify multi-dimensional evaluation indicators

Centering on the dual goals of "skills + ideological and political education" in the course, an ideological and political education evaluation system consisting of 4 first-level indicators and 12 second-level indicators is constructed, as follows: (1) Professional ethics quality, focusing on the ethical bottom line of data practice, including 3 second-level indicators: "Data security awareness" evaluates the detection of code vulnerabilities, compliance with data operation norms and confidentiality; The "Principle of data Authenticity" examines the verification of data accuracy and the attitude of refusing tampering and forgery. "Industry ethics compliance" determines the considerations of user privacy protection and compliance review in database design and data analysis. (2) Professional conduct quality, focusing on professional practice habits and self-development, includes three secondary indicators: "Rigorous and meticulous attitude" evaluates the design of the database and the writing of code; "Sense of responsibility and commitment" examines the initiative to take responsibility and solve problems when data is lost or systems fail. The exploration behavior of "autonomous learning ability" judgment technology or the use of AI tools, literature and other resources under ideological and political confusion. (3) Team collaboration quality, focusing on the team's project collaboration ability, includes three secondary indicators: "Communication and collaboration Ability" evaluates the communication of requirements, experience sharing and division of labor and cooperation in the group project; "Conflict resolution ability" examines the proposal of constructive solutions when there are differences of opinion. "Contribution" is evaluated from the dimensions of role assumption, workload and achievement contribution. (4) Ideological and political cognition transfer focuses on the

transformation of qualities into professional scenarios, including three secondary indicators: "Job Quality Matching Degree" evaluates the degree of alignment between practical performance and the ideological and political requirements of positions such as database development and operation and maintenance; "Dealing with Ethical Dilemmas" examines the solution approaches that integrate course knowledge under the context of data ethics conflicts. The recognition and practice of concepts such as "craftsmanship spirit" and "data security" in the "Value Recognition" judgment reflection report.

4.4.2 Implementation of dual-subject collaborative evaluation

Relying on AI technology, the ideological and political performance of students throughout their entire learning cycle is dynamically tracked and evaluated. The specific steps are: (1) Student behavior data collection records in real time the behavioral data of students during pre-class previewing, in-class practical operation, and post-class practice, such as whether they read ideological and political cases before class, whether they actively check for safety loopholes during class, the proportion of ideological and political keywords in post-class reflection reports, and the compliance of task completion, etc. (2) Conduct automated indicator scoring. Based on the preset weights of evaluation indicators, quantitatively score the collected behavioral data. For instance, if a student proactively identifies one SQL injection vulnerability, the AI will automatically add 2 points to the corresponding "data security awareness" indicator. If there is a field redundancy error that has not been corrected, 1 point will be deducted for the corresponding "rigorous and meticulous attitude" indicator. (3) Generate an individual "ideological and political literacy growth curve" to visually display the dynamic changes of students' various indicators.

After the course, teachers subjectively score students based on the quality of their completion of real enterprise data processing projects and ideological and political reflection reports, etc., on indicators such as "ideological and political cognitive transfer" and "teamwork quality" that are difficult to quantify through AI. At the same time,

they refer to the "ideological and political quality growth curve" generated by AI to avoid one-sidedness in the evaluation. In addition, teachers regularly review the student behavior data recorded by AI and provide supplementary evaluations for scenarios that AI misjudges or fails to cover.

4.4.3 Feedback and Application of Evaluation Results

Personalized Feedback report AI combines the evaluation results of the dual subjects to generate a "Political and Ideological Quality Evaluation Report" for each student, which includes the scores of each indicator, strengths and weaknesses, and improvement suggestions (such as "Strong awareness of data security, but team communication needs to be strengthened. It is recommended to participate in more group collaboration projects") And push targeted ideological and political learning resources (such as relevant enterprise job ethics norms documents, team collaboration case videos).

Teaching Improvement and resource Optimization Teachers summarize the evaluation data of the entire class, analyze the weak links in ideological and political teaching (such as the overall low score of "data ethics literacy"), and adjust the teaching content based on AI feedback (such as increasing the class hours of data ethics case teaching) or optimize the teaching resources generated by AI (such as supplementing more virtual practice scenarios related to data ethics) Form a teaching closed loop of "evaluation - feedback - improvement".

V. ANALYSIS OF TEACHING PRACTICE EFFECTS

This practice takes two classes of the Computer Network Technology major of the 2023 grade as the objects, conducts 16-week teaching of the "Data Processing" course, systematically analyzes the practical effectiveness of the innovative teaching mode, and verifies the effect of the innovative teaching mode.

5.1 Teachers' ability to implement ideological and political education in courses has achieved a dual improvement in quality and efficiency

The innovative teaching model, empowered by AI tools and constructed with a dual-subject evaluation system, promotes the transformation of

teachers' ability to implement ideological and political education in courses from "experience-driven" to "data-driven". It is specifically manifested in two aspects: First, the accuracy of ideological and political education design in courses has significantly improved. With the help of AI tools, instructors can quickly generate integrated teaching cases of "technology + ideological and political education", such as developing project packages based on the actual needs of enterprises that include data security scenarios, and precisely aligning ideological and political education goals with specific job requirements such as "cultivating the sense of responsibility and commitment for database operation and maintenance positions", making ideological and political education goals closely align with job demands. Effectively address the issue of broad ideological and political goals and their disconnection from the major in traditional teaching. Second, the effectiveness of ideological and political guidance and evaluation has been significantly enhanced. Through classroom observations and analysis of teachers' reflection logs, relying on real-time feedback of student behavior data from AI, opportunities for ideological and political education can be accurately captured. For instance, when there are vulnerabilities in students' code, data security awareness can be immediately infiltrated, and the frequency of ideological and political guidance has significantly increased compared to the traditional model. Meanwhile, the application of the dual-subject evaluation system enables teachers to reduce the time spent on evaluating students' ideological and political qualities. Moreover, it can mine students' ideological and political performance in after-class autonomous learning through AI behavioral data, effectively ensuring the comprehensiveness and accuracy of the evaluation results.

5.2 Students' technical skills and ideological and political qualities achieve coordinated development

After the course, the average score of the students in the three core task tests of database design, SQL operation and fault detection was 85.6 points. Among them, the pass rate of the "fault detection" task reached 88.9%. They can

independently solve practical technical problems, which is in line with the training goal of "emphasizing practical operation and strengthening skills" in higher vocational colleges. The average score of ideological and political literacy is 82.3 points. The scores of "data security awareness" and "teamwork ability" are 89.1 points and 84.7 points respectively. The frequency of keywords such as "job literacy" and "data ethics" in the ideological and political reflection report has significantly increased, which can combine ideological and political cognition with future career demands. Meanwhile, students' learning attitudes and professional identities have significantly improved. 87.8% of the students can understand the connection between ideological and political education in courses and their positions, and 79.1% of the students are willing to actively pay attention to the industry trends related to data security and ethics.

VI. CONCLUSIONS

Against the backdrop of the deep penetration of generative AI technology into vocational education, ideological and political education in higher vocational colleges is confronted with the dual challenges of "imbalance between technological dependence and quality cultivation" and "disconnection between knowledge imparting and value guidance". This article takes the "Data Processing" course as an example. By reconstructing the "skills + Ideological and Political Education" meta-course standards, building a three-dimensional ideological and political education element library of "course +AI+ position", optimizing the "AI+ project-driven + ideological and political experience" three-in-one teaching model, and innovating the dual-subject ideological and political education evaluation system, a new teaching model of ideological and political education in courses featuring "AI empowerment, ideological and political integration, and practice drive" has been formed. Teaching practice shows that this model can not only effectively enhance teachers' ability to implement ideological and political education in courses, solve problems such as ambiguous ideological and political goals, rigid content, and formalized evaluation in traditional

teaching, but also guide students to get rid of their excessive reliance on AI, achieve the coordinated development of technical skills and ideological and political literacy, and gain high recognition from enterprises. In the future, the application of this model in other programming courses can be further expanded. At the same time, the technical application of generative AI in the mining of ideological and political elements and the analysis of evaluation data can be deepened. The integration path of "AI+ ideological and political education in courses" can be continuously improved, providing more powerful support for higher vocational colleges to implement the fundamental task of fostering virtue and nurturing talent and cultivate high-quality technical and skilled talents with both moral integrity and professional skills. The version of this template is V2. Most of the formatting instructions in this document have been compiled by Causal Productions from the IEEE LaTeX style files. Causal Productions offers both A4 templates and US Letter templates for LaTeX and Microsoft Word. The LaTeX templates depend on the official IEEEtran.cls and IEEEtran.bst files, whereas the Microsoft Word templates are self-contained. Causal Productions has used its best efforts to ensure that the templates have the same appearance.

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