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Exploring the Challenges and Coping Strategies of University Moral Education in the AI Era

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ABSTRACT

In the era of deep integration of artificial intelligence into education, generative AI tools have multi-dimensional impacts on the knowledge construction, thinking training and value transmission mechanism of traditional moral education. This study systematically analyzes the challenges brought by AI technology to moral education and the response strategies of educational institutions through focus group interviews with university moral education teachers. The study found that the core challenges caused by AI technology include students' over-reliance on AI-generated content, which leads to superficial knowledge understanding and increased academic integrity risks, the information uniformity recommended by algorithms restricts the contact with multiple values, and the opacity of AI decision-making process leads to vague definition of moral responsibility. These challenges have an impact on the cultivation of students' critical thinking, moral judgment ability and sense of responsibility. In response to the above problems, the response strategies of universities focus on system construction, teaching innovation and cross-departmental collaboration. By establishing AI use norms and developing intelligent detection systems to prevent academic misconduct, the teaching models such as "human-computer debate" and "process evidence chain assessment" are used to strengthen critical thinking training, and the construction of an educational ecology integrating technology and humanities promotes the cultivation of ethical responsibility awareness. The study emphasizes that technology applications need to serve the educational essence of "cultivating autonomous moral subjects", balance instrumental rationality and humanistic values, and avoid the lack of emotional ethics cultivation due to over-reliance on technology. This study provides empirical evidence and action paths for universities to reconstruct the moral education system in technological innovation, and helps to achieve the organic combination of artificial intelligence technology and the essence of education.

Keywords: artificial intelligence, moral education, university, digital ethics, response strategy

INTRODUCTION

In an era where artificial intelligence is deeply integrated into education, the widespread use of AI tools has promoted the development of moral education towards efficiency and personalization, but it has also caused multiple challenges (Chaudhry, 2021). Students' reliance on AI-generated content has led to shallow understanding of knowledge and increased academic integrity risks (Yang, 2020). Algorithmic recommendations limit the contact with multiple values, and the opacity of AI decision-

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making has led to vague definitions of moral responsibility, which has impacted the core goals of knowledge construction, thinking training, and responsibility cultivation (Li Qiushi, 2024).

Although existing research has revealed the dilemmas of AI tools in terms of academic integrity, thinking ability, and responsibility system, and proposed countermeasures such as institutional norms, teaching innovation, and cross-departmental collaboration, there are still key research gaps (Holmes, 2019 & Hu Feixiang, 2023 & Li Yin, 2023). As the core subject of university moral education, universities face role transformation dilemmas in the AI era, such as identifying technology dependence and guiding ethical reflection, which have not received sufficient attention (Sahakian, 2023). There is a lack of empirical data on the long-term impact of algorithmic bias on the values of students from different cultural backgrounds, and the mechanism for dividing ethical responsibilities between technology developers, educational institutions, and teachers in educational scenarios is still unclear (Vincent, 2020 & Simmle, 2021). Existing strategies focus on the adaptation of technical tools, and insufficient exploration of the balance path between "technological empowerment" and "the essence of humanistic education" (Tan, 2021 & Wang, 2021 & Neil, 2022). These research gaps make it difficult for educational practice to effectively respond to the deep impact of AI technology on the core goals of moral education, and it is urgent to build targeted solutions through empirical research (Selwyn, 2023&Wu Xuan, 2024).

In this context, this study is based on the practice of university moral education, and studies the specific impact of AI tools on the cultivation of college students' moral cognition, judgment and behavioral abilities and the response strategies of educational institutions (Gawronski & Beer, 2023). This study focuses on the core issues such as the alienation of knowledge acquisition, weakening of critical thinking, deviation in value transmission, and elimination of responsible subjects caused by AI technology. Through qualitative interviews, it reveals the interactive contradictions between technological logic and the essence of education, and explores effective paths for institutional innovation, teaching reform and cross-departmental collaboration. This study provides a theoretical basis and practical reference for educational institutions to adhere to the core goal of "cultivating autonomous moral subjects" in the AI era, promotes the construction of a new paradigm of moral education that deeply integrates technological advantages and humanistic essence, and responds to the key proposition of the transformation of university moral education in the AI era.

RESEARCH OBJECTIVE

This study aims to explore the main challenges brought by AI tools in the practice of moral education for college students, analyze the effective strategies that universities can take to deal with these challenges, and further think about how to reasonably use AI technology to improve the quality and effect of moral education on the basis of ensuring educational ethics and value guidance. This study focuses on two main aspects. One is what specific challenges AI tools may cause in the process of moral education for college students, including ethical issues in the use of technology, deviations in value transmission, and changes in the relationship between teachers and students. The second is how universities should respond to these challenges, that is, how to apply AI tools scientifically and prudently in moral education, give play to their positive role, and reduce or avoid their negative effects. This article attempts to provide theoretical support and strategic suggestions for the practice of moral education in universities in the AI era, promote the standardized use and ethical development of artificial intelligence technology in the field of education, and cultivate students with independent moral judgment ability and technical ethics awareness.

CONCEPTUAL DEFINITION

AI Tools

AI tools are digital systems and software platforms developed based on artificial intelligence algorithms and machine learning technologies. Their main function is to simulate, enhance or assist human

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intelligent activities (Baker, 2019). These technologies include not only technical applications such as natural language processing, image recognition and data analysis, but also functional modules such as generating text, providing personalized feedback, conducting scenario simulations and assisting decision-making (Kim, 2021). The core function of AI is to assist or replace cognitive tasks in specific fields by simulating human intelligence (Baker, 2019; & TechTarget, 2023) Specifically, this study focuses on intelligent platforms used in the field of education to support moral education and digital ethics training, such as intelligent writing assistance systems, virtual situation simulation tools and online ethical decision-making platforms.

Moral Education

In this study, "moral education" is defined as a comprehensive education system aimed at cultivating individual moral cognition, moral judgment and moral behavior capabilities (Zhang Jiangkun, 2023). This system not only includes the teaching of traditional ethical theories, moral norms and values, but also should incorporate emerging content such as digital ethics, information security and network behavior codes to help students think critically and make independent moral decisions when facing complex and changing digital environments and moral dilemmas (Riedl, 2019). In addition, moral education is not only reflected in the teaching of classroom theories, but also runs through situational simulations, case discussions and practical activities, aiming to encourage students to internalize moral norms and form moral identity and responsibility that conform to the mainstream values of society and the requirements of the digital age (Griffiths & Forcier, 2016). In the AI era, moral education further extends to the field of technological ethics, requiring learners to understand emerging ethical issues such as algorithm fairness, data privacy, and technological responsibility, and balance technological instrumental rationality with human value care (Solomon, 2021 & Sison, 2022).

University

The "university" in this study refers to a professional organization that undertakes the function of higher education, and is committed to cultivating talents with high-level cognitive abilities, social responsibility and global vision through systematic academic and educational programs (Brennan & Shah, 2010). As the core field of knowledge creation and value transmission, the core functions of universities include academic research, professional education and social services. Its educational practice covers the construction of knowledge system, critical thinking training and ethical value cultivation, aiming to provide society with talents with both professional literacy and moral judgment ability (Altbach, 2019).

Digital Ethics

"Digital ethics" refers to a set of theoretical systems and practical norms formed in the context of digital technology and information society for ethical issues and moral challenges derived from fields such as network behavior, data processing, and artificial intelligence applications (Ouyang, 2021). It not only covers the basic ethical principles of justice, responsibility, privacy protection and intellectual property rights in traditional ethics, but also pays special attention to information security, algorithm fairness, online identity and data sharing in the digital environment (Riedl, 2019). Digital ethics aims to provide value guidance and behavioral standards for individuals, organizations and society in the face of emerging problems brought about by digital technology, so as to achieve the coordination and unification of technological development and ethical norms and promote the health and sustainable development of the digital society (Okoye, 2020).

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LITERATURE REVIEW

Challenges Brought by AI Ttools to Students' Moral Education

Knowledge acquisition and academic integrity risks. In the AI era, the Internet and various digital platforms provide unprecedented channels for knowledge acquisition. Students can easily access massive information around the world, which undoubtedly facilitates academic research and learning. However, this convenience has also greatly reduced the threshold for information screening and identification, causing some students to easily use ready-made online materials, AI-generated texts, and even unverified data as part of their research when writing papers or conducting academic discussions, thereby triggering plagiarism and academic misconduct (Schiff, 2021). This phenomenon may be due to unconscious negligence or intentional in pursuit of efficient and quantitative results, which seriously weakens academic originality and integrity principles. In addition, due to the "black box" effect of AI tools in content generation and information integration, students often find it difficult to judge the true source and authority of the information they obtain, which may cause confusion when citing, blurring the boundaries between the original author and their own contributions (Danks, 2020). This has not only triggered ethical disputes about academic attribution and intellectual property rights, but also posed greater challenges to the academic evaluation system (Kumar, 2021). To cope with this dilemma, educational institutions need to strengthen the education of digital ethics and academic integrity, and improve students' information identification ability, correct citation awareness and critical thinking through systematic curriculum setting and practical teaching, so as to effectively prevent and correct academic misconduct while enjoying the convenience of digitalization (Berendt, 2020).

Weakened critical thinking and moral judgment ability. In a digital learning environment, AI tools provide a convenient way to acquire knowledge, but at the same time they may also weaken students' independent analysis and critical thinking training. Traditional critical thinking requires students to identify and reflect deeply on information sources from multiple angles to form their own unique insights. However, when students rely too much on answers or content automatically generated by AI tools, they often lack the motivation to cross-verify information and independently reason, which may lead to "cognitive inertia" and hinder the cultivation of critical thinking (Beck, 2020). This phenomenon not only reduces students' ability to deeply process complex information, but also lacks sufficient reflection and judgment when facing moral dilemmas, and is prone to accept simplistic and one-sided moral interpretations, resulting in an overall decline in their moral judgment ability (Felix, 2020). In addition, the application of AI technology in moral education may cause students to develop a psychological dependence on ethical issues, that is, to rely on the "standard answers" provided by technology to deal with complex moral dilemmas, rather than exploring multiple moral perspectives and value judgments through independent thinking (Everett, 2023). This dependence not only limits students' multi-level understanding of ethical issues, but also may make it difficult for them to make independent and responsible judgments when faced with changeable and controversial moral situations in reality (Kumar, 2021). In other words, over-reliance on AI tools may cause students to lose the necessary critical analysis and self-reflection abilities in the process of moral decision-making, thereby affecting their self-shaping as citizens in the digital age in terms of ethical behavior and social responsibility (Zhang Jiangkun, 2023).

Algorithmic bias, insufficient supervision and unclear ethical responsibility. In the context of the widespread application of AI technology, algorithmic bias, insufficient supervision and unclear ethical responsibility have become one of the important issues that restrict the effectiveness of moral education (Jinhee, 2022 & Lee, 2023 & Young, 2023). Algorithmic bias mainly comes from the imbalance of AI system training data and the inherent bias in historical data. This bias is often unconsciously amplified by machine learning models, which in turn affects the output of AI tools in moral education (Jinhee, 2022). Insufficient supervision is reflected in the fact that laws, regulations and industry standards have failed to keep up with the rapid development of AI technology, resulting in a lack of effective supervision and restraint mechanisms for the application of AI in moral education (Lee, 2023). Most of the existing regulatory frameworks are still based on traditional information dissemination and

technology usage models, and cannot fully respond to new ethical issues caused by AI technology in the process of generating, processing and recommending information (Lee, 2023). Insufficient supervision makes it difficult to detect and correct risks such as misconduct, algorithmic errors and data manipulation in a timely manner, thus providing a breeding ground for academic misconduct and moral deviance (Dave, 2023). This situation not only undermines academic integrity, but also makes it difficult for students to obtain clear guidance and protection when using these tools (Sahakian, 2023). The problem of ambiguity in the attribution of ethical responsibilities is mainly reflected in the difficulty of clearly dividing the responsible parties when AI tools produce controversial or inappropriate outputs (Young, 2023). Due to the "black box" characteristics of AI systems, there is ambiguity in the division of responsibilities between teachers, technology developers, and education administrators. Once algorithmic bias or improper information dissemination occurs, it is often difficult to determine whether it is caused by technical defects of developers, improper guidance of educators on the use of tools, or inadequate institutional supervision (Morelli, 2020). This ambiguity not only hinders the fundamental solution of the problem, but also to some extent weakens the public's trust in digital ethics education and the application of AI tools (Cîrstea, 2022).

University Response Strategies

Design teaching objectives for moral education around students' learning needs. In order to give full play to the application value of artificial intelligence technology in moral education, universities should carefully design moral education work objectives around students' learning needs (Wu Xuan, 2024). First, teaching institutions can use AI data analysis to gain an in-depth understanding of students' backgrounds, interests, behavior patterns, and current moral concepts. Teaching institutions can introduce artificial intelligence technology and data mining and analysis tools in learning management systems to collect information on students' online learning behaviors, forum discussion participation, and moral education work feedback (Simmle, 2021). Based on the results of data analysis, identify students' learning needs and provide data support for the design of moral education work objectives. Teachers can combine social development trends, integrate students' personalized needs and the requirements of the times, and design moral education work objectives that are both in line with students' interests and have contemporary significance (Tan, 2021). Moral education work objectives should cover traditional moral and ethical knowledge, as well as emerging fields such as network ethics and environmental ethics (Wu Xuan, 2024). Second, to ensure the accuracy and effectiveness of teaching objectives, universities can use AI technology to dynamically optimize teaching objectives (Vincent, 2020). Teachers can use artificial intelligence algorithms to analyze students' acceptance of teaching content and changes in interest, adjust teaching objectives in a timely manner, and ensure that teaching activities are always in line with students' actual needs. Third, teachers should use artificial intelligence technology to strengthen interaction with students. Teachers can actively guide students to participate in the process of moral education goal setting through intelligent question-and-answer systems and personalized recommendations, collect students' opinions and suggestions, and let students participate in the design of moral education work goals to improve the accuracy of moral education work goals (Wang, 2021).

Reconstruct moral education teaching resources with the help of AI algorithms. Teaching resources are the foundation of moral education work. Universities can use artificial intelligence algorithms to build high-quality teaching resources and promote the improvement of the quality system of moral education work (Xu Feng, 2021). First, universities need to integrate existing moral education teaching resources, including teaching materials in various forms such as texts, videos, cases, and simulation scenarios, and use artificial intelligence algorithms to conduct in-depth analysis and classification of teaching resources to identify the value and applicable scenarios of different teaching resources (Moser, 2022). AI algorithms can help teachers screen out high-quality teaching resources and classify resources in a personalized way according to moral education goals and student needs, such as moral concepts, life practices, social ethics, etc., to facilitate the push of subsequent teaching resources (Saltman, 2022). Second, teachers can use artificial intelligence technology to build a

dynamically updated resource library. By collecting the latest information in the field of moral education and student learning behavior, AI can update the resource library in real time, add new teaching content, and eliminate outdated resources. This process can ensure the timeliness and cutting-edge nature of moral education resources (Chen Yutian, 2021). Third, teachers can use AI technology to develop a moral education resource push system that can push the most suitable moral education resources to students and teachers based on students' learning history, interests and learning effects (Gao Feng, 2021). This personalized recommendation can improve the utilization rate of learning resources (Wu Xuan, 2024).

Improve teachers' teaching ability to use AI. Universities should build a comprehensive teacher training system that includes AI application skills from basic information technology operations to advanced operations, such as using artificial intelligence tools for teaching design, online course development, and digital resource utilization. Regularly organize training and seminars to ensure that teachers can skillfully use the latest information-based teaching tools (Green, 2021). Second, encourage teachers to practice information-based teaching. Universities can set up special funds to support teachers in carrying out teaching reform projects supported by information technology and encourage teachers to adopt new teaching models, such as flipped classrooms and blended learning (Mitchell, 2021). Through practice, teachers can deeply understand the application value of information technology in teaching, thereby improving their own information-based teaching design and implementation capabilities (Manso, 2022). Third, universities should establish an evaluation mechanism for teachers' information-based teaching capabilities. Educational institutions can formulate clear standards for information-based teaching capabilities and understand teachers' progress and needs in information-based teaching through regular evaluations (Selwyn, 2022). Universities should commend teachers who have outstanding performance in information-based teaching practices to stimulate teachers' enthusiasm and innovative spirit (Moser, 2022).

GAP

At the challenge analysis level, existing research has not yet explored the moral education dilemma caused by AI technology in depth (Komljenovic, 2022). Most studies focus on the explicit impact of knowledge acquisition and thinking ability at the student level, but pay insufficient attention to the role transformation and ability dilemma of teachers in the practice of moral education in the AI era (Tucker, 2022). For example, the specific difficulties faced by teachers in identifying AI-generated content and guiding students to use technology critically have not been fully explored (Shew, 2020). At the same time, for the long-term impact of algorithmic bias in moral education, existing research mostly stays at the description of phenomena, lacks empirical data on the specific impact of algorithmic bias on the shaping of students' values under different cultural backgrounds, and it is difficult to accurately assess its deep harm (Felix, 2020). In addition, regarding the issue of ethical responsibility attribution caused by the "black box" nature of AI decision-making, although existing research points out that the responsible subject is vague, the research on the specific mechanism of responsibility division between educational institutions, teachers, and technology developers and the construction of a legal and ethical framework is still weak, and no operational solution has yet been formed (Greenewald, 2021).

At the level of response strategies, the countermeasures proposed in the study mostly focus on technology application and teaching resource integration, and the balance mechanism between "technology empowerment" and "the essence of humanistic education" is insufficient (Felix, 2023). For example, strategies such as reconstructing moral education resources with the help of AI algorithms and building intelligent platforms emphasize personalization and efficiency, but lack in-depth discussion on how to avoid the lack of emotional ethics cultivation caused by excessive intervention of technology, such as the impact of reduced face-to-face interaction between teachers and students on the formation of moral identity (Birhane, 2022). In addition, existing research on the cultivation of teachers' AI teaching ability is mostly focused on the technical operation level, while research on the ethical judgment ability and technology and humanities integration teaching concept that teachers should have in the AI era is relatively scarce (Guo Li, 2022). At the same time, the strategic design of cross-

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departmental collaboration and resource integration has not fully considered the particularities of different educational institutions, and there is a gap in the research on differentiated implementation paths, which has limited the universality and implementation of some countermeasures (Gilliard, 2024).

From the perspective of research methods and perspectives, existing literature focuses on theoretical analysis and countermeasures. There is a lack of empirical research based on real educational scenarios, such as longitudinal data on the impact of long-term tracking of the use of AI tools on students' moral judgment ability and comparative research on the implementation effects of different response strategies (Mitchell, 2023). In addition, interdisciplinary research lacks depth and fails to fully integrate multidisciplinary theories such as ethics, education, and computer science, resulting in the analysis of ethical risks of AI technology and educational response strategies not being closely integrated, making it difficult to form a systematic solution (Zhao Zhiyun, 2024).

METHODOLOGY

Research Design and Location

This study adopts the case study method for qualitative research design and collects data through semi-structured focus group interviews. H University in Henan Province, China was selected as the research location. The university has implemented the "Artificial Intelligence Ethics Education Integration Plan" since 2021, which has typical case value. The research period is from November to March 2024, during which two focus group discussions will be completed, and the duration of each round is controlled within 90 minutes.

Sampling technology, Sample Size and Participant Selection Criteria

This study uses purposeful sampling to select 8 full-time teachers of moral education as focus group members. The 8 participants have rich experience in moral education teaching and AI tool use. After the sample is determined, the research plan will be submitted to the university where the participants are located. After approval, the "Informed Consent Form" will be issued to the participants, detailing the purpose of the interview, data usage, anonymity measures, and voluntary withdrawal rights. The sample selection criteria are as follows:

1. Teaching ethics or related professional courses for ⩾3 years
2. Using at least one AI tool to assist teaching in the past 2 years
3. Teaching scenarios covering theoretical courses (such as ethical principles) or practical courses (such as social moral practice)
4. High-frequency users of AI (⩾3 times per week) with rich experience

Table 1. Basic Information of Participants

NO.	Gender	Age	Title	TeachingExperience	Main Course	AI Use Experience
P1	Male	42	Associate Professor	15 years	Ethics	2 years
P2	Female	38	Lecturer	10 years	Technology Ethics	1.5 years
P3	Female	29	Teaching Assistant	3 years	College Student Moral Cultivation	0.5 years
P4	Male	50	Professor	25 years	History of Chinese Ethical Thought	3 years
P5	Female	35	Lecturer	8 years	Professional Ethics Education	2 years
P6	Male	31	Lecturer	5 years	Network Ethics Education	3 years
P7	Female	45	Associate	18 years	Educational Ethics	1 year

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			Professor			
P8	Female	27	Teaching Assistant	2 years	Social Moral Practice Guidance	0.3 years

6.3 Data Collection

During the preparation stage of the interview, in view of the actual situation of teachers teaching across campuses, the Zoom platform was selected to conduct online interviews, equipped with professional recording equipment, and NVivo software was used for data management. The network environment and recording function were fully tested in advance to ensure stable and accurate data collection. The interview outline was formulated based on the previous literature research results on the ethics of AI education and the dilemma of moral education, and open questions were set around the research questions, and questions such as "Can you explain it in detail?" and "What are the possible reasons behind this phenomenon?" were reserved to promote in-depth dialogue.

Entering the implementation stage, this study adopted a semi-structured focus group interview method to collect data by combining a preset theme framework with dynamic questioning. The eight teachers were divided into two groups, each with four people. The interview time for each group was 90 minutes, and the two groups were separated by two weeks to avoid mutual interference between the views of the groups. The interview process is divided into three links. In the opening link, the researcher first introduced himself, reiterated the principle of confidentiality, guided the participants to sign the electronic informed consent form, and created a relaxed communication atmosphere through ice-breaking questions. In the topic discussion session, questions were asked in the order of the outline, free discussion was encouraged, and in-depth questions were asked for divergent opinions. Participants were required to elaborate on specific teaching cases. At the end of the session, participants were thanked, the data feedback mechanism was informed, and the possibility of subsequent supplementary interviews was confirmed. In addition, as the host, the researcher simultaneously recorded non-verbal information such as tone changes and emotional reactions, while focusing on dialogue guidance and marking key points in real time to prepare for subsequent analysis.

After the interview, verbatim transcription was completed within 24 hours, retaining colloquial expressions and emotional symbols, and marking the interview time and participant code. The transcribed text was then de-identified, all identifiable personal information was deleted, and the original data set was formed, thus completing all data collection work.

Table 2. Focus Group Semi-Structured Interview Protocol

Interview Session	Specific Issues	Duration	Questioning Direction
Ice-breaking	1.Please use 2-3 sentences to introduce your teaching background, courses you teach, and typical teaching scenarios. 2.How has the frequency of students using AI tools (such as ChatGPT, learning apps) changed in the past year? Give examples of usage.	10 minutes	1.Specific course types and student groups. 2. Details of scenarios where AI is frequently used.
Core issue 1: Challenges posed by AI to moral education	1.Knowledge acquisition and academic integrity: What typical features of AI-assisted generation are found when correcting homework? The deep impact of AI-generated text on students' moral cognitive development? New forms and controversial events of academic integrity issues in the A era? 2.Critical thinking and moral judgment: What are the differences in classroom performance between students who use AI and those who do not? How does AI's "instant answers" affect students' ability to make independent decisions?	40 minutes	1. Specific cases and data support. 2.The underlying reasons behind the phenomenon. 3.Comparative analysis of different viewpoints.

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	3.Value transmission and emotional ethics: 1. Does AI's participation in content production lead to deviations in students' understanding of values? Challenges and failure cases of AI-assisted teaching in emotional interaction between teachers and students? 4. Responsibility definition and practical dilemma: How to divide responsibilities when students misuse AI suggestions? What are the impacts? What ethical risks are there in school AI education products?		
Core Question 2: Response Strategies of Educational Institutions	1.System and policy: What are the existing AI-related moral education policies and implementation difficulties of the school? What mechanisms need to be established to balance technology and the essence of education? 2.Innovation in teaching practice: What methods have been tried to integrate AI into the classroom and what are the feedback from students? What are the effective methods and difficulties in preventing the negative impact of AI? 3.Cross-departmental collaboration and resource integration: The current status of cross-departmental collaboration and the support needed? What are the core modules of the student "AI ethics literacy" training program?	30 minutes	1.Specific implementation cases and results. 2. Actual difficulties encountered and solutions. 3.Future collaboration direction and planning.
Summary and Supplement	1.What challenges or breakthrough solutions have not been paid attention to? 2.Use three keywords to describe your expectations and reasons for "moral education in the AI era"?	10 minutes	1.Innovative ideas and suggestions. 2.Deep thinking behind the keywords.
Interview Notes	1.Semi-structured design, which allows for flexible adjustment of the order of questions and guidance of details through follow-up questions. 2.Encourage explanations based on teaching cases. 3.Record the entire process and anonymize the data for academic analysis.		

Data Analysis

Data preprocessing. First, data preprocessing. Transcription and de-identification. Within 24 hours after the interview, the two groups of 180 minutes of recordings were transcribed verbatim into text, retaining language features such as modal particles, pauses, and repetitions to ensure the integrity of the original data. At the same time, the transcribed text was de-identified, and sensitive information such as the participant's name and school was replaced with P1-P8 codes, and all identifiable details were deleted to form an anonymous original data set. Second, data import and preliminary sorting. The anonymized text data was imported into NVivo software, and the "AI Moral Education Research" project library was established, and classified and stored according to the interview group and participant number. Through the text query function of the software, the transcribed text was checked for grammar and logic, and errors caused by speech recognition were corrected to ensure data quality.

Coding analysis. First, open coding was performed. Three members of the research team independently performed open coding on the first two interview texts, extracting meaningful information fragments sentence by sentence, such as "students use AI to generate papers with logical breaks" and "AI instant answers cause students to give up independent thinking", etc., to form preliminary concept labels. In this process, a total of 127 initial concepts were generated, such as "academic misconduct", "mental inertia", and "value bias". Subsequently, the team merged repeated and similar concepts through multiple discussions and summarized the 127 initial concepts into 32 categories, such as classifying concepts such as "AI ghostwriting papers" and "data falsification" into the category of "academic integrity risk".

Based on open coding, main axis coding was carried out, and the node clustering function of NVivo was used to analyze the logical relationship between the 32 categories and find the core categories. Through continuous comparison and classification, four core categories were identified:

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"alienation of knowledge acquisition", "weakened thinking ability", "value transmission bias", and "reconstruction of responsibility system". For example, categories such as "students rely on AI to obtain ready-made answers" and "AI-generated content leads to superficial knowledge understanding" all belong to the core category of "alienation of knowledge acquisition", clearly presenting the subordinate relationship and internal connection of each category under the core topic. Focusing on the four core categories, further sort out their relationship with the research questions for selective coding. Through repeated verification of interview data, it was found that "AI technology characteristics" and "insufficient response of educational institutions" are the two key factors leading to moral education challenges, while "institutional innovation", "teaching reform" and "cross-departmental collaboration" are potential response paths.

FINDINGS AND DISCUSSIONS

Focus group interviews revealed that AI tools bring four significant challenges to moral education. The first is the alienation of knowledge acquisition and the crisis of academic integrity. Participants generally reflected that students over-rely on AI to acquire moral knowledge. P3 pointed out that when students use ChatGPT to analyze Chinese ethical thoughts, they only copy the framework generated by the algorithm and fail to understand its deep logic. This "take-it-as-it-is" approach leads to superficial knowledge understanding. More serious is the problem of academic integrity. Seven participants mentioned the phenomenon of fraud in AI-written papers. The format of the assignments is standardized but the arguments lack logic. There are mismatches in the cited literature, which are difficult to identify by the existing anti-plagiarism system. The second is the weakening of critical thinking and moral judgment ability. In classroom teaching, teachers observed that the "answer-pre-setting" feature of AI weakened students' thinking ability. P6 For example, when analyzing the ethical issues of gene editing, students who rely on AI only repeat the risk-benefit comparison provided by the tool and lack the ability to think independently and question. In complex moral situations, students directly apply the solutions given by AI, ignore the value differences in different cultural backgrounds, and expose their insufficient decision-making ability.

Third, the deviation and limitation of value transmission. AI's algorithm recommendation mechanism leads to problems in the transmission of values. P8 pointed out that a moral education APP pushes content based on students' browsing history, and more than 70% of them are cases supporting "technological neutrality", and the discussion of technological ethical risks is marginalized. This one-dimensional information push causes students to either fall into cognitive relativism or form absolute moral judgments. Fourth, the definition of responsibility is vague and the subject consciousness is eliminated. The opacity of AI decision-making makes it difficult to define moral responsibility. Teachers reported that when students use AI-generated solutions and encounter ethical problems, there is often a phenomenon of shirking responsibility. For example, when students use AI to design corporate social responsibility solutions, they ignore labor rights. Afterwards, students blame the tool defects, teachers believe that the review is insufficient, and the school emphasizes the policy gap. This ambiguity weakens students' sense of responsibility, causing them to form a "technical exemption" mentality, and over-reliance on AI leads to a decline in independent decision-making ability.

The study found that AI's challenges to moral education are mainly reflected in three aspects. At the knowledge acquisition level, AI simplifies the production of moral knowledge into a combination of data and algorithms. Students rely on AI-generated moral analysis content. Although they can list concepts, they lack a deep understanding of knowledge and emotional identification, resulting in a disconnect between moral cognition and behavioral practice. In terms of thinking training, AI's "answer-first" mechanism simplifies complex moral reasoning into finding the "optimal solution", which weakens students' critical thinking and gradually loses their ability to weigh contradictions. When students are accustomed to using AI to deal with ethical dilemmas, moral judgments are alienated into technical calculations, which deviates from the goal of moral education to cultivate prudent decision makers and may lead to the problem of accurate moral judgments but emotional indifference. In terms of the responsibility system, the opacity of AI decision-making causes students to transfer the

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responsibility of moral choices to algorithms. In the long run, it may give rise to "technology-dependent morality", causing students to lose their decision-making ability when technology is absent and abandon their subject consciousness when technology is covered, which runs counter to the goal of moral education to cultivate autonomous and responsible subjects. In response to these challenges, the interviewees proposed a three-dimensional response strategy of system, teaching, and collaboration. Measures such as AI detection systems and negative lists at the institutional level can reduce obvious academic misconduct. In terms of teaching innovation, using AI-generated content as debate material and requiring students to record the use process can train students' thinking and moral sensitivity. In cross-departmental collaboration, the information technology department and the humanities management department need to be deeply integrated to exert synergy and reduce the cultural bias of AI from the source.

This study reveals a core proposition of moral education in the AI era, that is, how to balance the convenience of technology and human uniqueness. In terms of knowledge learning, universities should make it clear that AI is only a provider of knowledge raw materials, and guide students to rebuild inquiry-based learning through teacher-student dialogue, text intensive reading and practical reflection, and truly construct moral cognition. In terms of thinking cultivation, we must be wary of the constraints of algorithms on students' thinking. Teachers should set moral dilemmas without standard answers, so that students can make independent moral decisions without the help of AI and protect students' critical thinking ability. In terms of responsibility education, it is necessary to break the students' "technology exemption" mentality, and let students experience the weight of responsibility and strengthen their sense of responsibility by allowing them to participate in campus ethical issues discussions, community services and other real-life moral practices. In short, the challenge of AI to moral education is the current manifestation of the long-term conflict between technology and humanity. Universities should not only focus on technical issues, such as anti-plagiarism and data detection, but should return to the essence of education and think about how to cultivate people with independent thinking ability and moral responsibility in an era of increasingly powerful algorithms. When students can still question whether the "optimal solution" given by AI conforms to basic moral norms, the value of moral education can be truly realized.

CONCLUSION

Through qualitative interviews with university moral education teachers, this study systematically summarizes the impact of artificial intelligence technology on university moral education and coping strategies. The study found that the widespread use of AI tools has improved the efficiency of knowledge acquisition while also causing multiple challenges. Students' excessive reliance on AI-generated content has led to a superficial understanding of moral knowledge, and academic integrity has faced severe tests due to the problem of AI writing. The singleness of information recommended by algorithms limits the contact with multiple values and weakens students' independent judgment ability in complex moral situations. The opacity of AI decision-making leads to the ambiguity of the subject of responsibility, giving rise to students' "technical exemption" psychology, leading to the degradation of independent decision-making ability.

In response to the above problems, the university's coping strategies present three-dimensional characteristics of system, teaching, and collaboration. At the institutional level, by establishing AI use specifications and developing intelligent detection systems, the boundaries of technology application are delineated and academic misconduct is effectively identified; at the teaching level, innovative models such as "human-computer debate" and "process evidence chain assessment" are used to guide students to critically analyze AI-generated content and strengthen their moral reasoning and value weighing abilities. At the collaborative level, we should promote cross-departmental cooperation to build an educational ecology that integrates technology and humanities, develop a curriculum system covering algorithmic ethics and virtual moral practice, and enhance teachers' ability to identify technology-dependent signals and guide ethical reflection.

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The study suggests that technology applications must serve the educational essence of "cultivating autonomous moral subjects" to avoid the lack of emotional ethics cultivation due to excessive intervention of instrumental rationality. Although existing strategies have shown results in curbing the negative impact of technology and improving teaching effectiveness, we still need to pay attention to the long-term impact of algorithmic bias in different cultural backgrounds in the future, expand cross-regional empirical research samples, and provide more comprehensive theoretical support and practical references for building a moral education system that combines technological adaptability with humanistic warmth.

RESEARCH IMPLICATION

Based on the practice of moral education in colleges and universities, this study reveals the core challenges of academic misconduct and weakening of critical thinking caused by AI technology, as well as the three-dimensional coping strategies of system, teaching, and collaboration, which provides a clear extension direction for subsequent research. On the theoretical level, in the future, we can focus on the dynamic balance mechanism of "technical tool rationality" and "educational humanistic essence", combine the philosophy of technology and moral education theory, and deeply explain how AI affects the emotional internalization process of students' moral cognition, and how educational institutions reconstruct the theoretical framework of "responsible subject cultivation" under the mediation of technology. On the practical level, it is recommended to standardize the teaching innovation models such as "human-computer debate" and "process evidence chain assessment" proposed in the study to form a replicable curriculum design guide.

On the methodological level, subsequent research can make up for the single case limitation of this study, and verify the commonalities and differences of AI moral education challenges in different educational ecosystems through multi-school comparison and cross-cultural sample analysis. Introduce a longitudinal tracking design to observe the changing trajectory of students' moral judgment ability and sense of responsibility in the process of continuous use of AI tools for a long time, and provide dynamic data support for strategy optimization. In addition, we developed an AI usage monitoring tool based on behavioral data, combined with qualitative interviews to verify its application effect, and promoted the transformation of theoretical research into educational technology innovation. Overall, the research is expected to help the education field adhere to the essential goal of "cultivating autonomous moral subjects" in technological iteration, and provide continuous research motivation for building a moral education model that deeply integrates technology empowerment and humanistic nourishment.

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