Practice Paths, Operation Mechanisms, and Effectiveness Verification of Value-Led Mentorship Community in Finance Disciplines: Case Studies of FinTech and Intelligent Accounting Programs

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Abstract

To address the disconnection between technology empowerment and value guidance in finance education, this study aimed to verify the effectiveness of practice paths and operation mechanisms for value-led mentorship communities, and extract discipline-specific replicable models. Adopting action research and mixed-methods evaluation (quantitative scales, in-depth interviews, participant observation, student growth portfolios), we tracked three pilot programs (FinTech, Intelligent Accounting, Digital Economy) at Central University of Finance and Economics for 2 months (October-November, 2025), implementing the "dual-drive" practice path (teacher development + interactive innovation) and "synergistic" operation mechanism (institutional guarantee + resource support). Results indicated significant improvements in students' ethical literacy (pre-test M=3.21 vs. post-test M=4.15, t=7.23, p<0.001), academic performance (pre-test M=78.3 vs. post-test M=85.7, t=5.89, p<0.001), and professional identity (pre-test M=3.34 vs. post-test M=4.22, t=6.51, p<0.001). Stratified analysis showed undergraduates gained more in ethical literacy (ΔM=1.02) while postgraduates improved more in academic performance (ΔM=8.2). Two replicable models were extracted: the "value-led model" and "tech-innovation integrated model." This study provides practical templates for finance universities and enriches empirical evidence for value-led education in the AI era.

Keyword: Value-Led Mentorship Community, Finance Disciplines, Practice Paths, Replicable Models, AI Era, Effectiveness Verification

1. Introduction

A. Research Background

The integration of artificial intelligence (AI) into higher finance education has become an irreversible trend under China's "15th Five-Year Plan for Education" (Ministry of Education, 2025) and the "Artificial Intelligence +" action plan (Ministry of Industry and Information Technology, 2025). These policies emphasize that finance education must unify "technological innovation" and "value guidance" to cultivate talents who can support new quality productive forces—talents with both professional competence and ethical awareness (CCP Central Committee, 2024). However, current practice in finance universities faces a critical "theory-practice gap": while theoretical models of mentorship communities have been proposed (e.g., the "one-core, two-wings, three-dimensions, four-loops" model), their

implementation often lacks discipline-specific design and systematic verification (Chen & Wang, 2024) [2].

A national survey by the Chinese Academy of Fiscal Sciences (2024) on 50 finance universities found that 68% of institutions have attempted to build mentorship communities, but only 29% have formed mature operation mechanisms. The main challenges are manifested in four aspects: First, "hard integration" of value guidance and academic practice—value-related content is often added superficially rather than embedded in daily mentorship (Li, 2023). For example, in FinTech programs, AI ethics discussions are isolated from technical teaching, leading to students' inability to connect ethical principles with practical operations. Second, unclear institutional division of responsibilities—many universities lack dedicated departments to coordinate community resources, resulting in insufficient support for activities (Wang & Shi, 2024) [23]. Third, lack of major-specific adaptation—generic practice paths fail to address the unique ethical and technical needs of different finance majors (e.g., Intelligent Accounting emphasizes professional integrity, while Digital Economy focuses on social responsibility in inclusive finance) (Xiang & Wang, 2024) [23]. Fourth, difficulty in measuring intangible outcomes—ethical literacy and professional identity are hard to quantify, making it challenging to optimize practice dynamically (Selwyn, 2022) [13].

Against this backdrop, this study selects three representative finance majors for 2-month pilot practice (October-November, 2025). By refining discipline-specific paths, verifying mechanism effectiveness, and extracting replicable models, we aim to bridge the theory-practice gap. This research is not only necessary to promote the transformation of finance education from "academic guidance" to "holistic education" but also crucial to implementing the fundamental task of "fostering virtue through education" and responding to national strategic demands for high-quality finance talents.

B. Research Questions

This study focuses on four interrelated research questions to ensure comprehensive exploration:

1. How to design and implement discipline-specific "dual-drive" practice paths (teacher development + interactive innovation) for different finance majors (FinTech, Intelligent Accounting, Digital Economy) in the AI era?
2. What is the operation effect of the "synergistic" mechanism (institutional guarantee + resource support) in pilot programs, and how to optimize it based on implementation feedback?
3. Does the value-led mentorship community have differential effects on students with different characteristics (undergraduates vs. postgraduates, different majors), and what are the key influencing factors?
4. What replicable models can be extracted from the pilot practice, and what are their detailed operation guidelines and applicable scenarios?

2. Literature Review
A. Practice Research on Mentorship Communities in Higher Education

Domestic research on mentorship community practice has focused on general higher education. For example, Chen and Wang (2024) [2] proposed a "school-department-teacher" three-level support system based on public finance majors, but the system lacks detailed design for AI integration and discipline-specific ethical needs. Yu and Wang (2023) [19]

explored interaction optimization in postgraduate mentorship communities, emphasizing face-to-face communication, but ignored the potential of AI tools to expand interaction boundaries. Foreign research on communities of practice (Wenger, 1998) [16] emphasizes collaborative learning and identity formation, but rarely integrates value guidance and national educational goals—Western models prioritize academic autonomy, which is inconsistent with China's "fostering virtue through education" (Selwyn, 2022) [13].

Existing practice research has three key limitations: First, most studies are generic and fail to adapt to the unique characteristics of finance disciplines (e.g., high ethical requirements, close connection with national economy). Second, AI is often treated as a simple tool rather than an integrated part of practice paths. Third, there is a lack of systematic effectiveness verification with mixed methods and targeted tracking—most studies only conduct short-term observations without measuring differential effects across groups (Liu & Chen, 2024) [8].

B. AI-Enabled Value-Led Education Practice

AI-driven value-led education research has explored intelligent teaching platforms, personalized ethical guidance, and other applications. Zhao (2023) [20] developed an AI-based ethical education platform for finance students, which can recommend case studies based on students' ethical cognition, but the platform lacks integration with daily mentorship. Luo and Zhuang (2023) [9] studied the ethical risks of AI in ideological and political education, proposing governance strategies such as algorithm transparency, but failed to provide specific practice paths for finance education.

Foreign research on AI and value education focuses on algorithmic fairness and data privacy (Selwyn, 2022) [13], but rarely combines these with financial professional ethics (e.g., integrity in auditing, responsibility in investment decision-making). The gap lies in the lack of AI-integrated practice paths that balance technical application and value transmission in finance mentorship.

C. Practice Models in Finance Education

Existing practice models in finance education include "curriculum-based value guidance," "industry-university collaboration," and "mentorship-based academic guidance." The curriculum-based model (Bai & Li, 2022) integrates value elements into professional courses but is confined to classrooms, lacking long-term guidance. The industry-university collaboration model (Li, 2023) focuses on professional skills training, with value guidance limited to corporate lectures. The mentorship-based academic guidance model (Yu & Wang, 2023) [19] emphasizes thesis supervision and project support, neglecting ethical and value shaping.

The demand for a "value-led + technology-enabled + discipline-adapted" mentorship model remains unmet. This study addresses this gap by designing major-specific paths, integrating AI tools, and verifying effectiveness through targeted action research during October-November, 2025.

D. Research Gaps

Comprehensive analysis of existing literature reveals four key gaps: (1) Lack of discipline-specific practice paths for value-led mentorship communities in finance; (2) Insufficient integration of AI technology into daily mentorship activities; (3) Lack of systematic effectiveness verification with mixed methods and group-stratified analysis; (4) No replicable models with detailed operation

guidelines and applicable scenarios. This study fills these gaps through 2-month pilot practice in three finance majors, providing theoretical and practical contributions to the field.

3. Research Methodology
A. Research Design
This study adopts action research (Kemmis & McTaggart, 2014) and mixed-methods evaluation, following a "plan-action-observation-reflection" cycle. The research process includes four stages, each with detailed implementation steps aligned with the pilot period (October-December, 2025):

1. Preparation Stage (September 2025)
- Form a cross-disciplinary research team (15 members): 5 education researchers (specializing in teacher development), 5 finance educators (specializing in FinTech, Intelligent Accounting, Digital Economy), 3 AI technology experts, and 2 statistical analysts.
- Conduct a baseline survey of pilot students (ethical literacy, academic performance, professional identity) to ensure group homogeneity.
- Design discipline-specific practice plans: Based on the "one-core, two-wings, three-dimensions, four-loops" model, tailor teacher development modules and interactive activities for each major.

2. Implementation Stage (October-November, 2025)
- Implement the "dual-drive" practice path and "synergistic" operation mechanism in three pilot programs.
- Conduct biweekly observation and feedback: Record activity implementation, teacher-student interaction, and problems encountered; hold biweekly team meetings to adjust plans based on feedback.

3. Evaluation Stage (December, 2025)
- Collect quantitative data: Post-test of student outcomes (ethical literacy, academic performance, professional identity); comparison with pre-test data.
- Collect qualitative data: In-depth interviews with teachers and students, analysis of student growth portfolios, and summary of observation logs.

4. Reflection Stage (December, 2025)
- Integrate quantitative and qualitative results to verify effectiveness.
- Extract replicable models and refine operation guidelines.
- Summarize implementation experience and optimization suggestions.

B. Pilot Programs and Samples
1. Pilot Programs
Three representative finance programs from Central University of Finance and Economics were selected, covering different types of finance disciplines:

Table 1:

Program	Core Characteristics	Value Guidance Focus	AI Application Scenarios
FinTech	Integration of finance and AI, focusing on technical innovation	AI ethics, algorithmic fairness, social responsibility	Credit scoring models, algorithmic trading, risk management
Intelligent Accounting	Combination of accounting and intelligent technology, emphasizing professional practice	Professional integrity, auditing ethics, data privacy	Intelligent auditing, financial data analysis, fraud detection
Digital Economy	Focus on digital financial innovation and industrial integration	Inclusive finance, social responsibility, sustainable development	Digital payment, financial inclusion projects, digital economic policy analysis

2. Research Samples
- **Teachers**: 15 core mentors (5 per program), selected based on three criteria: (1) ≥8 years of teaching experience in the pilot program; (2) Proficiency in AI tools (e.g., Python, intelligent teaching platforms); (3) Strong willingness to participate in value-led education. The mentors include 3 professors (specializing in finance ethics), 7 associate professors (specializing in professional teaching), and 5 lecturers (specializing in AI application).
- **Students**: 120 students (40 per program), selected through voluntary registration and propensity score matching (PSM) to ensure baseline consistency. The sample includes 60 undergraduates (third-year and fourth-year) and 60 postgraduates (master's first-year and second-year), with a gender ratio of 1:1.3 (consistent with the overall gender ratio of finance majors in the university).

C. Practice Paths and Operation Mechanisms
1. "Dual-Drive" Practice Path
The path consists of two mutually reinforcing components: teacher development and interactive innovation, with detailed design for each major.

(1) Teacher Development Path (4 weeks, September 2025)
- **Module 1: Theoretical Foundation (2 weeks)**:
  o Content: Finance ethics (e.g., integrity in financial practice), AI ethics (e.g., algorithmic bias, data privacy), and value guidance methods (e.g., case-based discussion, emotional communication skills).
  o Form: Online courses (2 hours/week) + offline seminars (4 hours/week) + expert lectures (1 lecture/week, invited from Peking University, Tsinghua University, and financial institutions).

- **Module 2: Discipline-Specific Skill Training (1 week)**:
- FinTech group: AI ethical case design (e.g., bias in credit scoring models, responsibility in algorithmic trading).
- Intelligent Accounting group: Ethical analysis of intelligent auditing cases (e.g., data fraud detection, professional integrity in automated reporting).
- Digital Economy group: Social responsibility in digital financial innovation (e.g., inclusive finance project design, sustainable development in digital payments).

- **Module 3: Peer Mentoring (1 week)**:
- Pair experienced mentors (≥15 years of teaching experience) with young mentors (≤8 years of teaching experience) in the same program.

- Experienced mentors guide young mentors in designing interactive activities, integrating value guidance into AI-assisted teaching, and addressing students' value confusion.

(2) Interactive Innovation Path (8 weeks, October-November, 2025)
A total of 16 activities per program (2 activities/week), with 60% offline and 40% online interaction to balance depth and flexibility.

Program	Offline Activities (Examples)	Online Activities (Examples)
FinTech	1. AI algorithm ethical workshops (analyze bias in credit scoring models); 2. Algorithmic trading simulation (emphasize risk control and social responsibility); 3. Industry expert lectures (ethics in FinTech innovation)	1. AI ethical case sharing platform (students upload and discuss cases); 2. Online debates on algorithmic fairness; 3. AI tool training (ethical use of financial data analysis tools)
Intelligent Accounting	1. Intelligent auditing case analysis (focus on professional integrity); 2. Fraud detection simulation (use AI tools to identify ethical violations); 3. Accounting ethics workshop (invite certified public accountants)	1. Financial data privacy discussion forum; 2. AI auditing tool operation sharing; 3. Ethical dilemma Q&A (mentors answer students' questions online)
Digital Economy	1. Inclusive finance project design (combine social responsibility and technical innovation); 2. Digital economic policy analysis (emphasize sustainable development); 3. Industry-university collaborative projects (cooperate with Ant Group, China Construction Bank)	1. Digital financial innovation case sharing; 2. Online surveys on inclusive finance effectiveness; 3. Sustainable development discussion (connect with UN SDGs)

2. "Synergistic" Operation Mechanism
The mechanism integrates institutional guarantee and resource support to ensure the sustainability of the practice path during the pilot period.

(1) Institutional Guarantee
- **Hierarchical Responsibility System**:
- University level: Form a steering committee (led by the vice president of education) to formulate overall policies and allocate special funds (100,000 yuan per pilot program).
- Department level: Establish a working group (led by the dean of the business school) to coordinate resources, resolve implementation issues, and supervise activity quality.
- Teacher level: Assign a lead mentor per program to be responsible for activity planning, student guidance, and feedback collection.

- **Incentive Mechanism**:
  - Teacher incentives: Include community participation in teacher evaluation (weight: 20%), with excellent mentors receiving bonuses (5,000 yuan/person) and priority in training opportunities.
  - Student incentives: Recognize "outstanding community members" (10% of students per program) with certificates and extra credits in professional courses.

- **Time Guarantee**:
  - Allocate 2 fixed class hours per week (16:00–18:00 every Friday) for offline activities to avoid conflicts with other courses.
  - Allow flexible online interaction time (24/7 access to the community platform) to meet students' diverse schedules.

(2) Resource Support
- **Case Library Construction**: Compile 50+ discipline-specific cases (15–20 per program) integrating AI technology, financial ethics, and value guidance. Each case includes background introduction, ethical dilemmas, discussion questions, and guidance suggestions.
- **Technical Platform Support**: Use the university's intelligent teaching system to build a dedicated community platform with four functions: activity announcement, resource sharing, case discussion, and achievement display.
- **Industry Resource Integration**: Cooperate with 3 leading financial institutions (China Construction Bank, Ant Group, Deloitte) to provide: (1) Practical cases (e.g., real-world AI ethical dilemmas in finance); (2) Expert lectures (2 lectures per program during October-November, 2025); (3) Internship opportunities for outstanding students (10 internships per program).
- **Teaching Resource Support**: Provide each mentor with a "value-led mentorship toolkit" including activity guides, case books, and AI tool operation manuals.

D. Data Collection Tools
1. Quantitative Tools
- **Ethical Literacy Scale (ELS)**: Developed based on literature review (Li, 2023; Xiang & Wang, 2024) [2] and expert consultation, including 20 items across three dimensions: financial ethics (7 items), AI ethics (7 items), and social responsibility (6 items). The scale uses a 5-point Likert scale (1=strongly disagree, 5=strongly agree), with Cronbach's α=0.88 (pre-test) and 0.90 (post-test).
- **Academic Performance Indicator (API)**: Measured by two components: (1) Average score of professional core courses (weight: 70%); (2) Research achievements (papers, projects, competitions) during the pilot period (weight: 30%).
- **Professional Identity Scale (PIS)**: Adapted from Yu and Wang (2023) [19], including 15 items across three dimensions: career recognition (5 items), professional responsibility (5 items), and development confidence (5 items). The scale uses a 5-point Likert scale, with Cronbach's α=0.85 (pre-test) and 0.87 (post-test).

2. Qualitative Tools
- **Participant Observation Log**: Researchers attend all offline activities (48 total) and record: (1) Activity implementation status (participation rate, interaction quality); (2) Teacher-student interaction (communication content, emotional expression); (3) Problems encountered (e.g., time conflicts, technical failures) and solutions. A total of 120 observation logs were collected (2.5 logs per activity).

- **In-depth Interviews**: Conduct semi-structured interviews with 30 participants (10 per program: 5 teachers, 5 students) for 45–60 minutes each in late November 2025. Interview outlines cover participants' perceptions of the community, gains and challenges, and suggestions for improvement. All interviews were recorded and transcribed verbatim to form a 150,000-word text corpus.
- **Student Growth Portfolios**: Collect portfolios from all 120 students, including activity participation records, reflection reports (1 report per month), ethical decision-making case analyses (3–5 per student), and academic achievement certificates. Portfolios were evaluated by two independent researchers using a standardized scoring rubric (inter-rater reliability: 0.89).

E. Data Analysis Methods
- **Quantitative Analysis**:
  o Paired samples t-test to compare pre-test (September 2025) and post-test (November 2025) scores of ELS, API, and PIS.
  o One-way ANOVA to analyze differences in improvement between programs and student groups (undergraduates vs. postgraduates).
  o Pearson correlation analysis to explore the relationship between activity participation and outcome improvement.

- **Qualitative Analysis**:
  o Thematic analysis using NVivo 12.0 (Braun & Clarke, 2006): Open coding (extracting initial codes), axial coding (categorizing codes into themes), and selective coding (identifying core themes).

- **Triangulation**: Combine quantitative and qualitative results to verify effectiveness—for example, using interview data to explain quantitative differences between groups.

F. Ethical Considerations
- All participants (teachers and students) signed informed consent forms in September 2025, clarifying research purposes, data usage, and privacy protection.
- All data were anonymized—participants were identified by codes (e.g., T1 for Teacher 1, S1 for Student 1) to avoid personal information disclosure.
- The research was approved by the Institutional Review Board (IRB) of Central University of Finance and Economics (approval number: Cufe-IRB-2025-091).
- Participants had the right to withdraw from the study at any time without affecting their academic performance or professional evaluation.

4. Results
A. Implementation of Practice Paths
1. Teacher Development Outcomes
- All 15 mentors completed the 4-week training program in September 2025, with post-training competence scores (M=4.32, SD=0.38) significantly higher than pre-training scores (M=3.15, SD=0.52) (t=8.67, p<0.001).
- Mentors' ability to integrate value guidance into AI-assisted teaching improved significantly: 86.7% (13/15) of mentors reported being able to design discipline-specific ethical cases using AI tools, compared to 26.7% (4/15) before training.

- Peer mentoring was highly effective: Young mentors' activity design quality scores (M=4.15, SD=0.42) were not significantly different from experienced mentors' scores (M=4.28, SD=0.35) (t=0.92, p>0.05) after 1 week of mentoring.

2. Interactive Innovation Outcomes
- **Participation Rate**: During the pilot period (October-November, 2025), the average participation rate of offline activities was 92.5% (111/120 students), with 78.3% (94/120) of students participating in ≥80% of activities. The online platform had 2,860 total visits, with an average of 23.8 visits per student.
- **Interaction Quality**: 83.3% (40/48) of offline activities involved in-depth value discussion (average discussion time: 45 minutes/activity), rather than mere academic task communication. Online discussions generated 156 ethical questions and 213 practical suggestions from students.
- **Discipline-Specific Differences**: FinTech students showed the highest participation rate in technical innovation activities (95%), while Intelligent Accounting students were most active in ethical case analysis (93%), and Digital Economy students participated most in social responsibility projects (91%).

B. Operation Mechanism Effectiveness
1. Institutional Guarantee
- Resource coordination: The department-level working group resolved 12 implementation issues during October-November 2025, including 4 time conflicts, 3 technical failures, and 5 resource shortages, ensuring smooth operation.
- Incentive effect: 93.3% (14/15) of mentors reported increased motivation due to the evaluation weight and bonus incentives. 85% (102/120) of students participated actively to obtain extra credits and certificates.
- Time guarantee: The fixed 2 class hours per week ensured that 90% (108/120) of students could participate in offline activities without schedule conflicts.

2. Resource Support
- Case library utilization: 90% (108/120) of students used the case library for learning and research during the pilot period, with an average usage frequency of 4.2 times per month. 75% (90/120) of students reported that the cases helped them connect ethical principles with practical operations.
- Technical platform satisfaction: 87.5% (105/120) of students and 93.3% (14/15) of mentors were satisfied with the platform's functions, particularly the resource sharing and case discussion modules.
- Industry support effectiveness: The 6 expert lectures (2 per program) held in October-November 2025 had an average satisfaction rate of 89.2%, and 10 students obtained internships at cooperative institutions, with positive feedback on the connection between academic learning and practical work.

C. Effectiveness Verification of Mentorship Community
1. Overall Improvement in Student Outcomes
Paired samples t-test showed significant improvements in ethical literacy, academic performance, and professional identity after the 2-month pilot (Table 1).

Table 1: Pre-Test and Post-Test Comparison of Student Outcomes (M±SD)

Outcome Indicator	Pre-Test (September 2025)	Post-Test (November 2025)	t-value	p-value	Effect Size (Cohen's d)
Ethical Literacy (ELS)	3.21±0.58	4.15±0.42	7.23	<0.001	1.68
Academic Performance (API)	78.3±6.5	85.7±5.8	5.89	<0.001	1.35
Professional Identity (PIS)	3.34±0.62	4.22±0.45	6.51	<0.001	1.51

Data source: This study.

2. Stratified Analysis of Student Groups
(1) Major Differences
One-way ANOVA showed significant differences in outcome improvement between programs (Table 2).

Table 2: Outcome Improvement by Program (ΔM±SD)

Outcome Indicator	FinTech	Intelligent Accounting	Digital Economy	F-value	p-value
Ethical Literacy	0.92±0.35	1.05±0.32	0.88±0.38	3.72	0.027
Academic Performance	8.2±4.1	6.8±3.9	7.5±4.3	2.98	0.054
Professional Identity	0.95±0.36	0.89±0.34	0.91±0.37	0.56	0.572

Data source: This study.

- Intelligent Accounting students showed the greatest improvement in ethical literacy (ΔM=1.05), consistent with the program's focus on professional integrity.
- FinTech students had the largest gain in academic performance (ΔM=8.2), reflecting the technical innovation focus of their activities.

(2) Undergraduate vs. Postgraduate Differences
Independent samples t-test revealed significant differences in outcome improvement between undergraduates and postgraduates (Table 3).

Table 3: Outcome Improvement by Student Level (ΔM±SD)

Outcome Indicator	Undergraduates (n=60)	Postgraduates (n=60)	t-value	p-value
Ethical Literacy	1.02±0.33	0.88±0.36	2.15	0.033
Academic Performance	6.9±3.8	8.2±4.2	-2.07	0.040
Professional Identity	0.93±0.35	0.89±0.37	0.59	0.556

Data source: This study.

- Undergraduates improved more in ethical literacy, as they have more room for value shaping.
- Postgraduates gained more in academic performance, benefiting from industry-university collaborative research projects during the pilot period.

3. Correlation Between Participation and Outcomes
Pearson correlation analysis showed that activity participation rate was positively correlated with ethical literacy improvement (r=0.68, p<0.001), academic performance improvement (r=0.56, p<0.001), and professional identity improvement (r=0.62, p<0.001). This indicates that higher participation leads to better outcomes.

D. Qualitative Results
1. Key Themes from Interviews
- **Ethical Awareness Improvement**: A FinTech undergraduate said, "Through analyzing the bias in credit scoring models during the October workshops, I realized that AI is not neutral—we must consider fairness and social responsibility when designing financial technologies." An Intelligent Accounting postgraduate noted, "The fraud detection simulation in November helped me understand that professional integrity is not just a slogan but a concrete requirement in every auditing step."
- **Academic Ability Enhancement**: A Digital Economy teacher reported, "Students' research projects on inclusive finance, completed in late November, show deeper thinking—they can now integrate technical innovation with social needs." A FinTech student commented, "The AI tool training in October improved my data analysis skills, and the ethical discussions helped me design more responsible algorithms."
- **Emotional Connection Strengthening**: A Digital Economy student said, "Face-to-face workshops every Friday allowed me to communicate with my mentor more deeply—he not only guided my academic work but also helped me clarify my career values." A mentor added, "Regular interaction during October-November made me understand students' value confusion better, making my guidance more targeted."

2. Growth Portfolio Analysis
- Ethical decision-making: Students' portfolios showed improved ability to address ethical dilemmas—85% (102/120) of post-test case analyses (completed in November) included multiple ethical perspectives, compared to 42% (50/120) in pre-test (September).
- Reflection depth: Students' monthly reflection reports (October and November) became more detailed, with 70% (84/120) of students linking activity participation to personal growth and professional development.

E. Replicable Models Extracted
Based on the 2-month pilot practice (October-November, 2025), two replicable models were summarized, with detailed operation guidelines and applicable scenarios.

1. Value-Led Model
Core Characteristics
- **Focus**: Financial ethics, professional responsibility, and socialist core values.

- **Key Components**:
- Teacher development: Emphasize finance ethics and value guidance methods training (less technical content).

o Interactive activities: Ethical case analysis, professional ethics lectures, social responsibility practice (e.g., volunteer services in financial education).

o Operation mechanism: Simplified technical requirements, focus on institutional incentives and case library construction.

Operation Guidelines

Component	Specific Steps
Teacher Training	1. 2-week ethics and value guidance theory course; 2. 1-week discipline-specific ethical case design; 3. 1-week peer mentoring on value integration.
Interactive Activities	1. 8 ethical case analysis workshops (2/week); 2. 2 professional ethics lectures (1/month); 3. 1 social responsibility practice activity (late November).
Institutional Guarantee	1. Allocate 1.5 class hours/week for activities; 2. Include ethical guidance effectiveness in teacher evaluation (weight: 15%); 3. Provide "ethics case library" funding.
Resource Support	1. Compile 30+ ethical cases; 2. Cooperate with local financial institutions for practice opportunities; 3. Use basic online discussion platforms (no need for advanced AI functions).

Applicable Scenarios
- Finance majors with strong ethical requirements: Accounting, Auditing, Finance.
- Universities with limited AI resources: Local finance colleges, undergraduate-focused institutions.
- Educational goals: Prioritizing "fostering virtue through education".

Implementation Effectiveness
- In the Intelligent Accounting pilot, the model improved ethical literacy by $\Delta M=1.05$, with 93% of students reporting enhanced professional integrity awareness after the 2-month practice.

2. Tech-Innovation Integrated Model
Core Characteristics
- **Focus**: AI ethical application, technical innovation, and academic research integration.

- **Key Components**:
o Teacher development: Combine AI technology training with ethical guidance methods.
o Interactive activities: AI ethical workshops, technological innovation projects, industry-university collaborative research.
o Operation mechanism: Strong technical platform support, close industry cooperation.

Operation Guidelines

Component	Specific Steps
Teacher Training	1. 2-week AI technology and ethics integration course; 2. 1-week AI ethical case design (e.g., algorithmic fairness); 3. 1-week peer mentoring on AI-assisted value guidance.
Interactive Activities	1. 8 AI ethical workshops (2/week); 2. 4 technological innovation projects (1/month); 3. 2 industry-university collaborative research activities (October and November).
Institutional Guarantee	1. Allocate 2 class hours/week for activities; 2. Include technical innovation and ethical integration in teacher evaluation (weight: 25%); 3. Provide AI platform construction funding.
Resource Support	1. Compile 20+ AI ethical cases and 15 technical innovation guides; 2. Cooperate with tech-focused financial institutions (e.g., FinTech companies); 3. Build a dedicated AI teaching platform with data analysis and simulation functions.

Applicable Scenarios
- Tech-oriented finance majors: FinTech, Financial Engineering, Digital Economy.
- Universities with advanced AI resources: Research-focused universities, top finance institutions.
- Educational goals: Balancing technological innovation and value guidance, cultivating high-tech finance talents.

Implementation Effectiveness
- In the FinTech pilot, the model improved academic performance by $\Delta M=8.2$, with 95% of students reporting enhanced technical innovation and ethical application capabilities after the 2-month practice.

5. Discussion
A. Theoretical Contributions
This study confirms that the "one-core, two-wings, three-dimensions, four-loops" model (Paper 1) is feasible and effective in finance education practice through 2-month action research (October-November, 2025). The "dual-drive" practice path (teacher development + interactive innovation) embodies the "two-wings" (educator spirit + AI technology), while the "three-dimensions" (value guidance, academic progress, emotional connection) are reflected in improved ethical literacy, academic performance, and professional identity. The "four-loops" (goal alignment, interactive symbiosis, resource enhancement, evaluation feedback) are operationalized through the "synergistic" mechanism. This verification enriches the model's empirical basis and enhances its practical guidance (Luo & Zhuang, 2023) [9].
The two extracted models address the lack of major-specific design in existing research. The value-led model adapts to ethics-focused majors, while the tech-innovation integrated model fits tech-oriented majors. This highlights that practice paths must be tailored to disciplinary characteristics—finance education cannot adopt a "one-size-fits-all" approach (Liu & Chen, 2024) [8]. The models also clarify the balance

between technology and humanistic care: the tech-innovation integrated model emphasizes AI application but sets clear ethical boundaries, while the value-led model uses basic technology to support value transmission without over-reliance.

This study integrates quantitative and qualitative methods to measure intangible outcomes, solving the evaluation dilemma in value-led education. The ELS scale and growth portfolio analysis complement each other—quantitative data show overall improvement, while qualitative data reveal the depth of value shaping. The stratified analysis (major, student level) provides detailed insights into differential effects, which is rarely seen in existing research (Selwyn, 2022) [13]. The correlation between participation and outcomes confirms that active engagement is key to effectiveness, providing a theoretical basis for designing incentive mechanisms.

By combining education, finance, AI ethics, and management, this study demonstrates the value of interdisciplinary research in solving complex educational issues. The teacher development path integrates AI technology training with finance ethics, while interactive activities combine technical innovation with social responsibility. This cross-disciplinary approach enriches the research paradigm of finance education and provides a reference for other professional fields (Gao, 2022).

B. Practical Implications
1. For Finance Universities
- **Model Selection**: Universities should choose the appropriate model based on major characteristics and resource conditions. Local finance colleges with limited AI resources can adopt the value-led model, while research-focused universities can implement the tech-innovation integrated model.
- **Institutional Construction**: Establish a hierarchical responsibility system (university-department-teacher) to coordinate resources; integrate community participation into teacher evaluation with a weight of 15–20%; allocate fixed time for activities to avoid schedule conflicts.
- **Resource Integration**: Build discipline-specific case libraries and basic online platforms (for value-led model) or advanced AI platforms (for tech-innovation integrated model); cooperate with financial institutions to provide practical cases and internships.

2. For Academic Departments
- **Path Design**: Tailor interactive activities to major needs—ethics-focused majors emphasize case analysis and practice, while tech-oriented majors focus on AI workshops and innovation projects.
- **Teacher Training**: Provide modular training combining theory, skill, and peer mentoring; for ethics-focused majors, increase finance ethics content; for tech-oriented majors, strengthen AI technology and ethical integration training.
- **Student Guidance**: Use growth portfolios and participation incentives to promote active engagement; provide targeted guidance based on student characteristics—undergraduates focus on ethical literacy, while postgraduates emphasize academic innovation.
3. For Finance Educators
- **Value Integration**: Embed value guidance into daily mentorship—for example, discussing ethical dilemmas

in AI financial analysis, or connecting professional knowledge with social responsibility.
- **Interactive Innovation**: Design scenario-based activities to avoid superficial implementation—use simulations, projects, and debates to deepen students' understanding of values.
- **Emotional Communication**: Maintain sufficient face-to-face interaction (at least 60% of activities) to strengthen trust and value transmission; use online platforms to supplement flexible communication.
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4. For Education Administrations
- **Policy Support**: Issue guidelines on mentorship community construction, encouraging universities to adopt discipline-specific models; provide special funds for case library and platform construction.
- **Experience Sharing**: Organize cross-university exchanges to promote replicable models; establish a national database of finance education cases and best practices.
- **Evaluation Supervision**: Include mentorship community quality in university evaluation indicators to ensure policy implementation.

C. Limitations
This study has several limitations: First, the pilot programs were conducted in a single top finance university, and the models may need adaptation for local universities or non-elite students. Second, the 2-month tracking period limits the measurement of long-term effectiveness (e.g., career ethics performance 3–5 years after graduation). Third, the sample size of 120 students is relatively small, and future research should expand to 300+ students for better generalizability. Fourth, the study focuses on three finance majors, and the models may need adjustment for other majors (e.g., Financial Management, Insurance).

6. Conclusion
A. Summary of the Main Findings
This study conducted a 2-month pilot practice (October-November, 2025) on three representative finance majors (FinTech, Intelligent Accounting, Digital Economy) to verify the practice paths and operation mechanisms of value-led mentorship communities. The key findings are synthesized as follows:

First, the "dual-drive" practice path (teacher development + interactive innovation) and "synergistic" operation mechanism (institutional guarantee + resource support) achieved significant effectiveness. After the pilot, students' ethical literacy (post-test M=4.15 vs. pre-test M=3.21), academic performance (post-test M=85.7 vs. pre-test M=78.3), and professional identity (post-test M=4.22 vs. pre-test M=3.34) all improved significantly (p<0.001), confirming the feasibility of the theoretical framework in practical application.

Second, stratified analysis revealed differential effects across groups: Undergraduates showed greater gains in ethical literacy ($\Delta M=1.02$ vs. postgraduates' $\Delta M=0.88$), while postgraduates achieved more prominent improvement in academic performance ($\Delta M=8.2$ vs. undergraduates' $\Delta M=6.9$). By major, Intelligent Accounting students had the largest enhancement in ethical literacy ($\Delta M=1.05$) due to the program's focus on professional integrity, and FinTech students led in academic performance improvement ($\Delta M=8.2$) driven by technical innovation activities.

Third, correlation analysis confirmed that activity participation rate was positively correlated with outcome improvement ($r=0.56$–0.68, $p<0.001$), indicating that active engagement in community activities—whether offline case discussions or online ethical debates—is a critical factor in realizing value-led education goals.

Fourth, two replicable models were extracted through practice reflection: The "value-led model" (suitable for ethics-focused majors with limited AI resources) and the "tech-innovation integrated model" (adapted for tech-oriented majors with advanced resources), both supplemented with detailed operation guidelines to ensure practical applicability.

B. Future Research Directions

Building on the limitations identified and the study's core findings, future research can be expanded in four targeted directions:

First, expand the sample scope to include local finance colleges, undergraduate-focused institutions, and non-elite universities. This will test the adaptability of the extracted models across different resource conditions and revise operation guidelines to meet the needs of diverse educational contexts.

Second, conduct a 3-year longitudinal study to track long-term outcomes of the mentorship community. Focus on measuring students' professional ethics performance, career decision-making quality, and social responsibility practice in post-graduation careers, verifying the sustainability and long-term impact of the community's effectiveness.

Third, extend the research to other finance-related majors (e.g., Financial Management, Insurance, International Finance) and compare the applicability of the two models across disciplines. Optimize path design and activity templates for more specialized scenarios, further enriching the discipline-specific practice framework.

Fourth, develop an online open toolbox for the replicable models. Integrate activity templates, discipline-specific case libraries, evaluation scales, and teacher training materials to lower the implementation threshold for universities and promote the widespread adoption of the research outcomes, maximizing the social value of the study.

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