

From Moral Dilemma Identification to Ethical Judgment Cultivation: A Teaching Reform Study of the *Financial Shared Services* Course

Yuxue Li*

Nanjing University of Science and Technology ZiJin College, Nanjing 210023, Jiangsu, China

**Author to whom correspondence should be addressed.*

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract: As intelligent financial sharing platforms enter university classrooms, teachers and students often regard them as “neutral tools,” overlooking the embedded ethical risks. This study focuses on the undergraduate course “Financial Shared Services” and identifies four types of moral risks in teaching: the dilemma of “who is sacrificed” in automated expense reimbursement reviews, the implicit corporate bias within credit scoring systems, conflicts between rigid institutional rules and exceptional circumstances, and tensions between obedience to authority and compliance with institutional norms. Drawing on consequentialism, deontology, and virtue ethics, the study analyzes these risks and proposes actionable recommendations, including algorithm transparency mechanisms, rule-guarded audit processes, virtue-based human-machine interface design, and an integrated accountability traceability system. The findings argue that technical training alone is insufficient; cultivating ethical judgment must become a core goal of curriculum reform. This approach helps students develop prudent, fair, and responsible professional character while mastering intelligent financial tools, thereby responding to the emerging ethical demands of the intelligent accounting era.

Keywords: Financial Shared Services; Moral dilemma; Consequentialism; Deontology; Virtue ethics; Accounting education

Online publication: October 20, 2026

1. Introduction

In recent years, with the gradual maturation of technologies such as Big Data, Artificial Intelligence, the Internet of Things, and Cloud Computing, intelligent financial sharing platforms have moved from corporate practice into university classrooms^[1]. As a core practical training course for accounting and financial management majors, “Financial Shared Services” aims to help students master the operational mechanisms of financial shared service centers by simulating processes such as expense reimbursement, procurement and payment, general ledger and reporting, and fund settlement. However, in actual teaching, a pervasive yet

easily overlooked problem has emerged: both students and teachers tend to regard the platform as a “neutral tool,” focusing solely on operational steps and system outputs, while rarely questioning the algorithm logic, value preferences, and ethical risks behind the platform.

This cognitive tendency towards “technological neutrality” is highly similar to the early developmental issues in autonomous driving technology. Autonomous driving was once thought to require only solving technical challenges such as perception, decision-making, and control ^[2]. It was not until the “trolley problem” entered public discourse that people realized that when a machine must make a choice between different lives, it is in fact executing a moral judgment ^[3].

Similarly, intelligent financial sharing platforms face ethical choices at various stages, such as automatic approval, credit scoring, anomaly warning, and authority control. These choices include: “who gets protected first,” “whether rules can be bent,” and “whether to execute superior instructions.”

Therefore, based on the teaching practice of the “Financial Shared Services” course in undergraduate universities, and drawing on the moral dilemma analytical framework (including who is sacrificed, whether rules are violated, and whether instructions are executed), this study systematically identifies four major moral dilemmas. It then analyzes these hazards using three philosophical theories: consequentialism, deontology, and virtue ethics. Finally, it proposes actionable teaching improvement suggestions. The goal of this study is not to reject intelligent financial sharing platforms, but to help teachers and students develop a critical understanding of the ethical structure of such platforms.

2. Four moral dilemmas of intelligent financial sharing platforms in teaching

2.1. Dilemma 1: The “who gets sacrificed” dilemma caused by the system’s automatic rejection of reimbursements

In the automatic approval module of intelligent financial sharing platforms, an anomaly detection algorithm is embedded. For example, when an employee submits more than three reimbursement requests within a week, or a single amount exceeds 50% of the historical average, the system automatically issues a “yellow alert.” If two rules are triggered simultaneously, the request is automatically routed to rejection. In a teaching experiment, a student who submitted five reimbursement requests for intra-city transportation (totaling 175 RMB) due to continuous overtime was automatically rejected, while another student who submitted a single travel expense of 880 RMB (slightly above average) was only marked as “attention.” The moral risk here is that the system, by design, implicitly makes a value judgment: “rather than let one potentially fraudulent large expense slip through, we will reject legitimate but high-frequency small expenses.” However, overtime taxi rides may have been verbally approved by a supervisor, and the system cannot recognize unstructured information. The consequences include: legitimate reimbursements being misjudged, students developing blind trust in the algorithm, and a lack of immediate appeal channels for the wrongly rejected. A common phenomenon in teaching is that most students initially believe “the system’s rejection must be correct,” and only feel unfair after the teacher reveals the actual situation.

2.2. Dilemma 2: Value bias implicit in the credit scoring system — “protecting the enterprise first”

Most intelligent financial sharing platforms incorporate an employee credit scoring system, with an initial score of 100. Triggering an alert deducts 5 points, a rejected reimbursement deducts 10 points, submitting a

fake invoice deducts 30 points, and a score below 60 automatically freezes reimbursement rights. In course simulations, students play the role of financial auditors, and their performance score is based on the accuracy of their decisions — i.e., whether they are consistent with the algorithm’s judgment. The implicit moral dilemma is that the system design defaults to placing the enterprise’s risk control above the employee’s right to appeal. Once the system automatically deducts points, the employee has no immediate channel to explain special circumstances such as lost invoices, sudden epidemics, or remote areas without printing shops. Students, in order to obtain higher system scores, also tend to strictly deduct points, thereby forming a behavior pattern of “being accountable to the machine rather than to real employees.” In the long run, this weakens the empathy and professional judgment that accountants should possess, leading students to mistakenly believe that “high score equals justice.”

2.3. Dilemma 3: The “whether to allow rule violation” dilemma when system rigidity conflicts with special circumstances

A common scenario in teaching cases is as follows: a sales employee visits a customer in a remote area where a sudden rainstorm occurs, and all printing shops are closed, making it impossible to obtain a paper invoice. The customer writes a handwritten receipt and affixes a stamp. The employee takes a photo and uploads it with an explanatory note. However, the platform has a built-in rule: “No original invoice, no reimbursement.” The system automatically rejects the request with a message: “Violation of financial regulations.” The moral dilemma here is the irreconcilable conflict between strict rule enforcement (compliance orientation) and flexible handling of special circumstances (business orientation). If the platform rigidly rejects the request, it causes substantive unfairness to the employee; if it allows manual override, it may open the door to “manipulative fraud.” In teaching, students often fall into binary thinking: either “rules cannot be changed” or “special circumstances allow arbitrary exceptions.” This either-or cognitive model obscures the real ethical complexity of financial work.

2.4. Dilemma 4: The conflict between “obeying authority” and “obeying rules” — whether to execute superior instructions

In the advanced permission simulation segment of the course, a “CFO” role is typically set with the authority to forcibly approve any rejected document. In one experiment, the CFO, played by a student, required the platform to approve an obviously excessive entertainment expense reimbursement that bore the signature of the general manager. If the system is set to “unconditionally obey higher authority,” it automatically approves; if set to “require secondary review,” it triggers a process extension. The moral dilemma here is: should the platform obey “positional power” or “institutional rules”? If the platform unconditionally obeys power, it may become a tool for fraud; if it refuses to obey power, it conflicts with the hierarchical culture of most enterprises. Students often show significant swings in their stance when playing different roles: when they are ordinary employees, they argue that “the system should adhere to principles”; when they play the CFO, they tend to argue that “the system should accommodate management needs.” This moral inconsistency in role-switching is a key hazard that teaching needs to address.

3. Applicability analysis of ethical theories in the “Financial Shared Services” course

In the teaching application of intelligent financial sharing platforms, different ethical theories provide distinct

analytical frameworks for understanding, identifying, and responding to moral dilemmas. Each theory, from its own moral standpoint, raises different normative requirements for algorithm design, authority allocation, decision-making logic, and human-machine relationships. The following sections elaborate on the applicability of three ethical theories—consequentialism, deontology, and virtue ethics—in analyzing moral hazard issues in the intelligent financial sharing course.

3.1. Consequentialism and utilitarianism

Consequentialism holds that the moral correctness of an action or decision should be judged solely by its consequences. Utilitarianism, as the most typical representative of consequentialism, further establishes “the greatest happiness for the greatest number” as the fundamental criterion of moral judgment ^[4]. In the context of intelligent financial sharing platforms, consequentialism requires that the design and operation of the platform be oriented toward maximizing overall welfare. This means that when the system faces conflicting choices, it should prioritize decision paths that reduce overall risk, improve overall compliance, minimize total losses, or reduce delays.

Specifically, the applicability of consequentialism in the course can be understood through the following theoretical dimensions:

First, algorithm logic centered on outcome optimization has moral rationality. From a consequentialist perspective, the platform automatically rejects certain reimbursements, lowers the credit scores of certain employees, or prioritizes protecting corporate interests. Not because these actions are morally valuable in themselves, but because they tend to produce superior overall outcomes, such as reducing fraud, lowering audit costs, and improving capital efficiency. Thus, consequentialism provides a theoretical justification for platform decisions that “sacrifice a few to protect the many.”

Second, consequentialism emphasizes calculability and comparability, which aligns well with the data-driven nature of intelligent financial sharing platforms. The platform is essentially a quantitative system: reimbursement amounts, trigger counts, credit scores, risk probabilities, etc., can all be measured and compared. Consequentialism precisely requires that the outcomes of different decision options be subjected to quantitative cost-benefit analysis, so as to select the option with the greatest net benefit. This methodological affinity makes consequentialism the most easily and implicitly adopted ethical framework in platform algorithm design.

Third, there are theoretical boundaries to consequentialism’s applicability in teaching. This theory tends to treat employees or users as “variables” in welfare calculations, rather than as irreducible moral agents. When the platform makes decisions solely based on statistical data, the special circumstances, emotional experiences, and dignity claims of individuals may be systematically overlooked. Moreover, consequentialism struggles to address the problem of “asymmetric distribution of benefits.” Even if overall welfare increases, if the losses are concentrated on a particular vulnerable group, the outcome may still be immoral from the perspective of distributive justice.

Therefore, introducing consequentialism into the course helps students understand the “benefit-maximization” logic of platform algorithms, but also requires guiding students to recognize the theory’s blind spots, namely its relative neglect of individual rights and procedural justice.

3.2. Deontology and rule ethics

Deontology holds that the basis of moral judgment lies not in the consequences of an action, but in whether

the action itself conforms to universal moral rules or duties ^[5]. Kantian deontology further emphasizes that individuals should act according to “maxims that can be universalized,” and that one should never treat others merely as a means to an end ^[6]. In the design and use of intelligent financial sharing platforms, deontology provides theoretical support for the rigidity of rules, the inadmissibility of arbitrary rule-breaking, and procedural justice.

The applicability of deontology in the course can be developed along the following theoretical dimensions:

First, deontology emphasizes the universal applicability of rules and the prohibition of arbitrary exemptions. Financial regulations, accounting standards, tax laws, etc., are themselves systems of rules. From a deontological perspective, the platform should strictly enforce these rules, regardless of outcomes. For example, even if a reimbursement seems reasonable under specific circumstances, if it does not formally comply with the rules, the platform should still reject it. This logic of “form over outcome” is a core feature of deontology. In teaching, deontology helps students cultivate respect for financial rules themselves, understanding the intrinsic legitimacy of “why rules are rules.”

Second, deontology emphasizes procedural fairness and consistency, opposing differential treatment based on outcome preferences. In intelligent financial sharing platforms, this means that the same type of reimbursement application should be subject to the same review standards, without arbitrarily adjusting thresholds based on the applicant’s position, historical credit, or department. Deontology requires that platform algorithms avoid embedding any form of improper bias when designed, including special treatment for certain roles or presumptive discrimination against certain behaviors. This requirement of “equal treatment for equal cases” is highly consistent with the professional ethics of “objectivity and fairness” in financial work.

However, deontology also has limitations in its application to the intelligent financial sharing course. It tends to treat rules as fixed and unchanging, and has weak adaptability to special circumstances. When institutional rules conflict sharply with practical needs, deontology often struggles to provide satisfactory solutions. Moreover, deontology’s emphasis on “following rules as an end in itself” can lead to formalism, where one focuses only on whether procedures comply with regulations, while ignoring whether the regulations truly serve the organization’s legitimate goals.

Thus, introducing deontology into the course helps students develop respect for financial rules and procedural justice, but also requires guiding students to recognize the limits of rules and the necessity, in certain extreme situations, of reflectively examining those rules.

3.3. Virtue ethics and professional character

Unlike the two preceding normative theories that focus on “actions” or “outcomes,” virtue ethics focuses on the agent’s character, motives, and inner qualities. Aristotelian virtue ethics holds that the ultimate source of moral action is not obedience to external rules or calculation of outcomes, but the stable character traits possessed by the agent itself, such as honesty, justice, prudence, courage, and empathy ^[7]. In the context of intelligent financial sharing platforms, virtue ethics shifts the analytical focus from “what decision should the platform make” to “what kind of person should the user of the platform become.”

The applicability of virtue ethics in the course can be understood through the following theoretical dimensions:

First, virtue ethics emphasizes that technology cannot replace judgment, and the platform cannot replace conscience. No matter how advanced the intelligent financial sharing platform is, it remains a tool designed by humans. The platform can execute rules, calculate probabilities, and issue warnings, but it does not possess virtues. It cannot be prudent, empathetic, or morally responsible. Therefore, all decisions made by the platform ultimately need to be scrutinized, questioned, and taken responsibility for by virtuous agents. In the course, this means that students should not be trained merely as “platform operators,” but as professional agents capable of making independent moral judgments with the assistance of the platform.

Second, virtue ethics provides a framework for evaluating the professional character of financial personnel and students. In the intelligent financial sharing environment, which virtues are particularly crucial? At a minimum, they include prudence (making sound judgments with incomplete information), fairness (not treating people differently due to system bias), honesty (not exploiting platform loopholes for personal gain), responsibility (willingness to bear consequences of one’s decisions), and empathy (understanding the situation of those misjudged by the system). These virtues cannot be acquired through pure technical training, but require repeated practice and reflection in real or simulated ethical dilemmas.

Third, virtue ethics links “good decisions” to “good persons,” thereby expanding the course’s value objectives. From a virtue ethics perspective, a decision is correct not only because it conforms to rules or produces good outcomes, but also because it originates from a virtuous agent. This means that in the intelligent financial sharing course, teachers should evaluate not only “what the student did right,” but also “with what motivation and attitude the student acted.” For example, in a simulated audit task, does the student follow system prompts mechanically, or actively review attachments and consider exceptional possibilities? The cultivation of this “practical wisdom” is a core contribution of virtue ethics to teaching.

Virtue ethics also faces theoretical challenges. It lacks the operational tools of consequentialism and the clear rule guidance of deontology. Different cultures and organizations may have different understandings of “virtue,” making it difficult to establish uniform evaluation standards. Furthermore, virtue ethics emphasizes individual character, but many decisions in intelligent financial sharing platforms are made under organizational constraints and algorithmic controls, where individual moral autonomy may be significantly weakened.

Nevertheless, the value of virtue ethics in the intelligent financial sharing course cannot be overlooked. It reminds educators that the goal of the course is not only to teach students “how to use the platform efficiently,” but also to cultivate “accounting professionals who can maintain professional judgment and moral sensitivity even with platform assistance.” Only when technical tools are combined with virtuous users can intelligent financial sharing truly realize its ethical promise of serving organizations while respecting individuals.

3.4. Summary

Consequentialism, deontology, and virtue ethics respectively provide theoretical resources for the intelligent financial sharing course from the three dimensions of outcomes, rules, and character. Consequentialism helps explain the benefit-oriented logic of platform algorithms; deontology emphasizes rule compliance and procedural justice; virtue ethics directs attention to the professional character of users. The three are not mutually exclusive but complementary. In actual teaching, one should not simply elevate a single theory as the sole correct guiding principle. Instead, students should be guided to understand the moral dimensions

revealed by different theories and to learn how to weigh and integrate them in specific situations. This comparative analysis of multiple theories is itself an important part of accounting ethics education.

4. Recommendations for risk response based on ethical theories

4.1. Establishing algorithm transparency mechanisms based on consequentialism and deontology

The software platform introduced by the university should provide standardized explanations for each automated decision, including the specific rules triggering the decision, a comparison between the current input values and rule thresholds, the historical statistical data on which the decision is based, and the estimated consequences of the decision. This design derives from consequentialism, because only when the decision-making process is sufficiently transparent can teachers and students evaluate the actual outcomes of decisions and judge whether overall welfare has been maximized. At the same time, deontology emphasizes the openness and reviewability of procedures. Therefore, the logic behind all parameter settings involving value ordering must be disclosed to users, with no hidden judgment criteria, thereby ensuring the fairness and accountability of platform decisions.

4.2. Building rule-guarded audit processes based on deontology

Deontology advocates for the universal applicability of rules and procedural justice. Therefore, the platform should establish a routine compliance channel and a separate rule-revision proposal channel. For most reimbursement applications, fixed rules should be enforced without providing a temporary manual override function. When special circumstances arise, users cannot directly force approval. Instead, they enter a rule-revision proposal procedure, where an institutional committee decides, following open deliberation rules, whether to amend the rule. This design ensures that rules are not arbitrarily broken while allowing for rule improvement through proper procedures. For instance, when an intelligent accounting system is conducting tax planning, personalized factors should be taken into account. Based on conventional predictions, possible changes and unexpected situations should be fully considered, and flexible response plans should be formulated accordingly, rather than adhering strictly to established rules^[8]. In addition, the platform should periodically check for systematic biases against certain departments, regions, or job levels, ensuring equal treatment for equal cases, which is also a core requirement of deontology.

4.3. Designing human-machine collaboration interfaces and teaching evaluations based on virtue ethics

Virtue ethics focuses on the agent's character and practical wisdom. Therefore, the platform interface should be designed to cultivate the habit of prudent judgment rather than to replace judgment. When handling marginal applications, the platform should require the reviewer to manually fill in the rationale for their decision before submission. This mandatory step trains users to make sound judgments when information is incomplete. The platform should not offer crude operations such as directly blacklisting an employee or drastically lowering credit scores in one step. Instead, it should adopt graded alerts and recommend written communication between the reviewer and the employee, reflecting understanding and respect for employee dignity. In course evaluation, students should be required to write brief reflective logs after each simulation task, explaining their hesitation and reasoning during the decision-making process. Teachers should regularly

review and provide feedback, thereby translating the cultivation of virtue ethics' character traits into concrete teaching activities.

4.4. Establishing an accountability traceability system based on the integration of three theories

Consequentialism requires assigning responsibility for the consequences of decisions. Deontology requires that decision-making processes be reviewable. Virtue ethics requires that decision-makers be able to reflect on and take moral responsibility for their decisions. Together, these three point toward a comprehensive recording and traceability system. The platform should incorporate a module that continuously records decision information^[9]. Each automated or manually overridden decision should record the time, triggering conditions, algorithm version, input data characteristics, output results, intervenor identity, and reasons. These records are used to evaluate the actual consequences of decisions (providing data support for consequentialism) and to make the decision-making process reviewable (meeting deontology's requirement for procedural justice). In the course, students should regularly analyze these records, compare their own judgments with the algorithm's logic, and develop habits of reflection. At the same time, the moral responsibilities of students, teachers, developers, and administrators should be clearly defined. Any party's failure of responsibility can be traced through the recording system.

5. Conclusion

Taking the undergraduate course "Financial Shared Services" as its research object, this study systematically identifies four types of moral dilemmas in the teaching use of intelligent financial sharing platforms: the trade-off dilemma in automatic reimbursement audit; the pro-enterprise bias implicit in the credit scoring system; the conflict between system rigidity and special circumstances; and the contradiction between obeying authority versus obeying rules. Using three ethical theories—consequentialism, deontology, and virtue ethics—this study analyzes the theoretical roots of these hazards and proposes four corresponding teaching recommendations. The study argues that the course should not remain limited to technical operational training. Rather, the cultivation of ethical judgment should be incorporated into the core concept of teaching reform. By systematically embedding mechanisms for identifying and responding to moral hazards in course design, platform use, and teaching evaluation, educators can effectively guide students to develop prudent, fair, and responsible professional character while mastering intelligent financial tools. This teaching reform direction not only responds to the new demands of the intelligent finance era for accounting professionals, but also provides a referential path for the development of similar courses.

Disclosure statement

The author declares no conflict of interest.

References

- [1] Li Q, 2024, Design of Intelligent Financial Sharing Platform Driven by Consensus Mechanism under Mobile Edge Computing and Accounting Transformation. *International Journal of Data Mining and Bioinformatics*, 28(3/4):

426–438.

- [2] Zhang E, Huang J, Gao Y, et al., 2022, A Hierarchical Perception Decision-making Framework for Autonomous Driving. *Cyber-Physical Systems*, 8(1/4): 192–209.
- [3] Young G, 2025, Using the Classic Trolley Problem to Teach AI Students and Researchers about their Role as Moral Agents, and Why They Should Be Subject to Moral Scrutiny. *AI and Ethics*, 5(2): 1877–1883.
- [4] McKay RB, 2000, Consequential Utilitarianism: Addressing Ethical Deficiencies in the Municipal Landfill Siting Process. *Journal of Business Ethics*, 26(4): 289–306.
- [5] Piller C, 2009, Valuing Knowledge: A Deontological Approach. *Ethical Theory and Moral Practice*, 12(4): 413–428.
- [6] Sanwoolu OD, 2025, Kantian Deontology for AI: Alignment without Moral Agency. *AI and Ethics*, 5(5): 5425–5437.
- [7] Aluma RW, 2025, The Aristotelian Virtue Ethics Theory and the Lugbara Concept of Virtue. *Open Access Library Journal*, 12(2): 1–13.
- [8] Li X, 2025, Application Research of Intelligent Accounting System in Tax Planning and Risk Control. *International Conference on Algorithms, Image Processing, and Deep Learning (AIPDL 2025)*. 2025: 137941B.1–137941B.5.
- [9] Marandi A, Parida A, Mohanty A, 2025, Intelligent Financial Forecasting: A Fusion of Computer Engineering and AI in Accounting. *Recent Advances in Artificial Intelligence for Sustainable Development*. 2025: 119–130.

Publisher's note

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.