Education Reform and Development, 2026, Volume 8, Issue 10
https://bbwpublisher.com/journal/erd
Online ISSN: 2652-5372
Print ISSN: 2652-5364

Research on Reform and Innovation Paths of AI Literacy Education in Higher-Vocational-College Libraries: A Case Study of Zhejiang Business College

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Abstract: The popularization of generative artificial intelligence puts forward new requirements for information-literacy education in higher-vocational colleges. AI literacy has become an essential competency for technically skilled talents in vocational colleges in the new era. As an important position for information-literacy education, libraries have a practical need to carry out AI-literacy-education reform. Adopting a combined method of literature analysis and case analysis and taking the library of Zhejiang Business College as the research object, this paper sorts out its practical AI-literacy-education conditions from three dimensions: online courses, offline lectures and self-learning resources. The analysis shows that current relevant education has built certain foundations in courses, teachers and resources, yet several problems still exist: untimely updates of course contents, lack of systematic integration for special-topic lectures, insufficient supply of self-learning resources, and narrow coverage of thematic activities. Based on the existing AI-literacy framework and combined with the vocational and practical characteristics of higher-vocational education, this paper summarizes five dimensions of AI literacy for vocational-college students: basic cognition, tool application and human-computer collaboration, evaluation of generated information, ethical responsibility, and vocational transfer. Corresponding reform paths are proposed from the perspectives of constructing a systematic educational framework, optimizing learning resources, innovating teaching forms, expanding thematic activities, and strengthening ethics education. AI-literacy cultivation implemented by higher-vocational-college libraries should not be merely limited to skill training for single-tool operation; instead, it shall shift toward comprehensive-literacy cultivation oriented at critical evaluation and responsible application based on vocational scenarios.

Keywords: Higher vocational college library; Information-literacy education; Artificial-intelligence literacy

Online publication: November 25, 2026

1. Introduction

In August 2025, the State Council issued the *Opinions of the State Council on Further Implementing the*

"AI+" Initiative. It clearly proposes to promote the integration of artificial-intelligence technologies into every link of education and teaching and all types of school-running elements, explore the construction of new human-computer-collaborative education-teaching modes, and advocate that the general public take the initiative to learn knowledge and technologies related to artificial intelligence [1]. The requirements stated in this policy document indicate that artificial-intelligence literacy is no longer supplementary content for information-technology courses, but a core constituent element for cultivating talents' comprehensive competencies in the digital-intelligent era.

2. Current situation and deficiencies of AI literacy education in the library of Zhejiang Business College

The library of Zhejiang Business College (hereinafter uniformly referred to as "Zhejiang Business College") has long carried out information-literacy-education work. At present, it has built a complete education mode covering online course teaching, offline special-topic lectures, supply of self-learning resources and various thematic educational activities. With the popularization of generative-AI technologies, structural changes have taken place in vocational-college students' learning demands for information literacy: learning contents are no longer confined to traditional information-literacy categories, and further extend to brand-new fields such as basic cognition of artificial intelligence, practical application of intelligent tools, identification and evaluation of AI-generated contents, and ethical judgment for artificial-intelligence usage [2]. Starting from 2025, the library of Zhejiang Business College has taken the initiative to keep up with the development trend of intelligent-oriented education and integrated AI-literacy education into the existing information-literacy-education system. Nevertheless, relevant work is still in the initial-exploration stage, and many imperfections remain in educational-practice procedures.

2.1. Lagging updates of online-course contents

The library launched the general-education course *Information Literacy Education* in 2019. Its teaching contents mainly include basic modules such as information retrieval, information acquisition, information evaluation and rational utilization of information. By August 29, 2026, the cumulative number of course participants had reached 38 423. The development, production and content updating of online courses usually consume long cycles and suffer from certain time-lag effects. At present, the course's content system has not systematically incorporated relevant content such as basic common-sense knowledge of artificial intelligence, practical-operation methods for intelligent tools, verification skills for AI-generated content, and ethical specifications for artificial-intelligence usage. The overall course contents can no longer fully match students' current learning demands for AI literacy, showing obvious disconnection [3].

2.2. Lack of systematic integration for offline special-topic lectures

The library regularly holds special-topic lectures every semester, with 3-4 sessions on average each week. Starting in 2025, lecture contents have incorporated artificial-intelligence-related knowledge, including specific classifications of AI tools, basic operation methods, practical usage skills, and relevant ethical norms, which can satisfy students' practical learning demands to a certain extent [4]. However, various special-topic lectures in the library are mostly designed and delivered independently by different librarians, without unified teaching objectives, content connections or progressive learning hierarchies. So far, no unified general

normative consensus has been reached on the scope and educational framework of AI-literacy content within the industry. For this reason, the library cannot construct a complete AI-literacy teaching system adapted to vocational-college students' learning characteristics for the time being [5].

2.3. Imperfect self-learning resources

The library has added multiple AI-literacy-related learning content to the LibGuide section on its official homepage. Learning resources such as the *AI Literacy and Skill-Improvement Database* and CNKI Research have been successively launched on the platform, providing basic channels for students' self-directed AI learning. However, various learning resources on the platform have not built a complete learning system based on learning essentials, including AI-knowledge cognition, intelligent-tool application, content identification-evaluation, and standardized usage. Meanwhile, the library lacks layered learning resources adapted to students of different majors, learners with varied learning foundations and diverse vocational-practice scenarios. Relevant resources are insufficient in refinement and pertinence [6].

3. Core-competency composition of vocational-college students' AI literacy

Combined with talent-cultivation objectives of higher-vocational colleges and the scope of library-based information-literacy-education work, this paper divides vocational-college students' AI literacy into five specific dimensions for subsequent research and analysis [7].

3.1. Basic-cognitive competency of artificial intelligence

Basic cognition serves as the core prerequisite for constructing AI literacy: students need to master basic concepts of artificial intelligence, generative artificial intelligence and large-language models, understand the technical logic that AI-generated content relies on data training and probabilistic prediction, and clarify its application boundaries for completing multiple types of tasks such as text generation, image processing, data sorting and auxiliary decision-making [8]. Students shall correctly realize that AI-output content is not absolutely accurate; it may contain factual errors, missing sources, outdated knowledge, logical contradictions, and other defects. Contents shall not be directly judged authentic and credible merely for complete text structures and fluent expressions. Only by establishing correct basic technical cognition can blind worship or irrational rejection toward AI tools be avoided.

3.2. AI-tool application and human-computer-collaboration competency

Under higher-vocational-education scenarios, the application of AI tools shall be deeply bound up with professional-learning tasks. For example, students can leverage AI tools to finish auxiliary work in tasks including literature retrieval, report writing, marketing-scheme conception, data sorting, programming, and creative-work creation. Still, students need to screen, revise and integrate AI-output results. The core focus of such teaching should not be confined to teaching students how to prompt AI for content generation. Instead, it shall gradually cultivate students' competency for controlling result quality in human-computer-collaboration tasks, and guide students to utilize artificial intelligence to assist in analyzing and solving problems rather than replacing independent thinking with AI tools [9].

3.3. Competency for evaluating generated information and making critical judgments

Generative artificial intelligence has reconstructed information-production modes and, meanwhile, greatly increased difficulties in information identification and evaluation. Traditional information-literacy education mostly focuses on dimensions such as tracing information sources, verifying author authority, judging content timeliness and assessing evidence credibility. Corresponding to generative-AI scenarios, students need to master multi-dimensional verification methods for AI-generated content: check every piece of evidence within the content one by one, clearly distinguish objective facts, subjective viewpoints and speculative hypotheses, and conduct cross-validation of key information relying on formal databases, original literature and other authoritative and credible channels [10]. When contradictions exist among contents output by different AI tools, students shall possess the competency to explore causes for such discrepancies, and shall not selectively adopt conclusions consistent with their preset assumptions for direct usage. This competency acts as the core link for traditional library-based information-evaluation education to extend toward AI-literacy education.

3.4. Competency for AI ethics and responsible usage

Many practical problems will emerge in the process of using AI tools, including personal-privacy protection, intellectual-property-right ownership, algorithmic bias, academic-integrity requirements and liability-ascertainment after accidents. When students input personal data, enterprise-related data or non-public materials into AI systems, they shall perceive potential risks of data leakage. Carrying out AI-ethics education is not intended to prohibit students from using new technologies. Instead, it aims to help students build risk-prevention awareness, rule-abiding concepts and accountability consciousness [11].

3.5. Vocational-transfer and continuous-learning competency

Technologies and various products related to artificial intelligence iterate and update at a rapid pace. If teaching only focuses on practical-skill training for a single tool, the learned content will soon fall behind real-world developments. Apart from mastering several commonly-used AI tools, vocational-college students also need to understand common operational ideas, evaluation criteria and basic risk-prevention requirements for various tools, and flexibly transfer acquired competencies to brand-new tool platforms and future on-the-job tasks [12].

4. Reform paths for AI literacy education in the library of Zhejiang Business College

4.1. Improve learning resources and innovate educational forms

The library shall add AI-literacy modules to the original course *Information Literacy Education*, and adopt a modular approach to reduce course-update costs. For fast-changing tool-operation content, micro-lectures, short videos, and online guides can be adopted for real-time updates. Relatively stable content such as basic principles, information evaluation, and ethical specifications can be incorporated into systematic courses. Meanwhile, further improve the LibGuides platform and the *AI Literacy and Skill-Improvement Database*. Construct resources categorized by basic cognition, tool application, content evaluation, vocational practice and ethical specifications, and provide learning access for different majors and competency levels [13].

4.2. Carry out layered and classified AI-themed educational activities

The library can further launch diversified activities such as AI-themed book exhibitions, reading-promotion events, case seminars, skill training sessions, creative-practice activities and result-demonstration events to

expand the coverage of AI-literacy cultivation. Activity design shall take differences in students' competency levels into account and match vocational-development demands of different majors. For instance, activities oriented at basic AI cognition and experience with commonly-used tools can be held for lower-grade students; practical projects associated with professional tasks, internships and employment can be set for higher-grade students; comprehensive-case-analysis and innovative-application training can be provided for students with solid foundations [14].

4.3. Strengthen education on AI ethics and critical-thinking ability

Ethical specifications and critical thinking shall not be regarded as additional content independent of tool-oriented teaching. Instead, they shall run through the whole process of AI-literacy education. Teaching shall focus on cultivating students' competencies for verifying generated content, tracing information sources, identifying algorithmic bias, and judging information reliability. Make students realize that AI-output results are uncertain and cannot be directly treated as true and accurate knowledge. Through analyzing wrong-case examples, comparing generated content and discussing ethical scenarios, the library guides students to understand risks such as privacy leakage, intellectual-property issues, false information and technology dependency, and further form a rational, prudent and responsible concept for artificial-intelligence application [15].

5. Conclusion

The library of Zhejiang Business College has carried out preliminary exploration on AI-literacy education relying on online courses, special-topic lectures and self-learning resources. Nevertheless, existing practices are still dominated by scattered supplementary content and tool-operation teaching. A complete educational system with integrated objectives, contents, resources, teaching and evaluation has not yet been constructed. Accordingly, the core of AI-literacy-education reform in higher-vocational-college libraries does not lie in adding special-topic lectures, introducing tool usage or expanding resource reserves. Instead, it shall first clarify the competency composition of vocational-college students' AI literacy, and reconstruct course contents, learning resources and teaching-activity designs on such a basis. Meanwhile, libraries need to cooperate with professional-teaching departments, front-line teachers and cooperative enterprises to fully integrate AI-literacy education into the whole process of professional learning and vocational tasks. This paper conducts analysis based on practical materials and theoretical frameworks of a single college. The proposed competency dimensions and reform paths have not been verified via systematic teaching experiments, and their applicability may be restricted by factors such as institutional specialty structures, student foundations and resource conditions. Follow-up research can identify demands via questionnaire surveys, in-depth interviews, task tests and pre-post teaching assessments, carry out comparative research among different colleges and majors, and further verify the effectiveness and application scope of the AI-literacy-education system.

Funding

Research on Reform and Innovation Paths of University Information-Literacy Education Based on AIGC (Project No.: PX-8241536)

Disclosure statement

The author declares no conflict of interest.

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