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Postprint: Research on Macro-Level Planning for Information Literacy Education in Higher Education Under New Circumstances

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Date: 2023-04-01T16:15:52+00:00

Abstract

[Purpose/Significance] To examine the macro-level planning of information literacy education in China, providing references for enhancing university information literacy education practice and supporting talent cultivation.

[Method/Process] Through literature review and web-based investigation, this study analyzes the progress of information literacy education practices and development planning in domestic and international universities, proposes key principles for macro-level planning of information literacy education, and deeply explores the core framework composition of university information literacy education planning in the new era.

[Result/Conclusion] Under the new environment, the development of information literacy education in China urgently requires strengthened macro-level planning to provide scientific standards and guiding recommendations for university information literacy education to enter a new stage.

Full Text

Macro Planning Research on Information Literacy Education in Universities under New Environment

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Abstract: *[Purpose/Significance]* This study investigates the macro planning of information literacy education in China to provide references for enhancing university information literacy education practices and supporting talent development. *[Method/Process]* Through literature review and web-based research, we analyze current practices and development planning progress in information literacy education both domestically and internationally, propose key principles for macro planning, and explore the core framework components for information literacy education in the new era. *[Result/Conclusion]* The development of information literacy education in China's new environment urgently requires strengthened macro planning to provide scientific norms and guidance for advancing university information literacy education to a new stage.

Keywords: higher education institutions; academic libraries; information literacy education; planning research

1. Domestic and International Information Literacy Education Practice and Development Planning

1.1 Domestic Progress in Information Literacy Education

China's university information literacy education began in the early 1980s. In 1984, the Ministry of Education issued the "Notice on Issuing 'Opinions on Offering 'Literature Retrieval and Utilization' Courses in Higher Education Institutions"' [(84) Jiao Gao-Yi Zi No. 004], followed by additional guidance documents in 1985, 1992, and 1993. These administrative guidelines provided crucial policy foundations and norms that effectively promoted the widespread adoption of literature retrieval courses and drove the development of information literacy education centered on such courses [1-2].

As the primary implementing institution for information literacy education, university libraries have made significant progress over the past three decades. In March 2015, under the auspices of the Information Literacy Education Working Group of the Ministry of Education's University Library and Information Science Committee, Shenyang Normal University Library conducted a nationwide survey on information literacy education practices—the largest of its kind in recent years. The survey covered 545 universities (including 71 "985/211" universities, 314 regular universities, and 160 vocational colleges) across 28 provinces, municipalities, and autonomous regions [3]. Results showed that Chinese university libraries have established an information literacy education system primarily composed of information retrieval courses, thematic training workshops, and freshman orientation programs, with generally adequate teaching facilities and faculty. Some advanced libraries have actively explored new models such as online education, flipped classrooms, and embedded teaching, contributing sub-

stantially to talent development. However, the survey also revealed persistent issues: many institutions suffer from monotonous content, incomplete systems, disconnection from professional education, inadequate platforms, and faculty shortages. Additionally, problems such as insufficient institutional attention, wide disparities in scale and quality, conservative educational philosophies, and outdated teaching models require urgent reform and innovation. A January 2019 survey by Meng Li and Qin Changjiang of 39 "Double First-Class" university libraries showed that while distinctive practices exist, deficiencies remain in comprehensive content coverage, depth of embedded teaching, and education on academic norms and ethics [4].

1.2 International Developments in Information Literacy Education Planning

Information literacy education has gained global attention, with influential organizations releasing key documents that continuously advance its role in social development and quality improvement. In December 2013, UNESCO published the "Global Media and Information Literacy Assessment Framework," which integrated media and information literacy concepts for the first time, providing theoretical foundations and practical guidelines for assessment at both macro and micro levels [5]. In September 2015, the UN adopted the 2030 Agenda for Sustainable Development with 17 global goals. IFLA subsequently released its 2017 and 2019 "Development and Access to Information" (DA2I) reports, highlighting how information access advances multiple sustainable development goals and emphasizing that information literacy enhances people's ability to acquire, utilize, and evaluate information, providing quality, equitable, and lifelong learning opportunities, with libraries playing a vital role [6-7].

In February 2016, the Association of College and Research Libraries (ACRL) officially released the "Framework for Information Literacy for Higher Education" [8], which updated its 2000 "Information Literacy Competency Standards for Higher Education" with new framework elements reflecting trends in the evolving information ecosystem. This framework demonstrates strong foresight and guidance for higher education. Tsinghua University Library translated the framework into Chinese, published it on the ACRL website, and later in *Journal of Academic Libraries* [9], attracting widespread domestic attention. In contrast, China lacks unified, macro-level information literacy guidance documents. Drawing from international research and practical experience, the new era calls for strengthened macro planning to provide direction and development strategies for information literacy education [10-11].

2. Principles for Macro Planning of Information Literacy Education

As top-level design for university information literacy education systems, developing macro planning presents significant challenges. It requires not only a

firm grasp of current practices and problems, but also profound insights into professional frontiers and the ability to propose plans that guide implementation, thereby establishing new benchmarks for information literacy education. To achieve this, we propose the following principles:

(1) Forward-looking Perspective. The information ecosystem, higher education landscape, academic communication paradigms, and user needs are undergoing disruptive transformations. New macro planning documents must reflect these changes, adapt to new era demands, and drive innovation in information literacy education to guide future development.

(2) Guiding Function. Given that existing policy guidance requires updating and that unified national practice standards are lacking, China's information literacy education macro planning should serve dual functions of policy guidance and standard-setting. It should clarify or reaffirm the role of information literacy education in talent development, define its essential content, provide macro policy foundations for overall planning and development direction, and offer specific guidance for practitioners on content and delivery methods.

(3) Practical Applicability. While the ACRL 2016 Framework represents an internationally acclaimed model with innovative and forward-thinking concepts, it has also faced criticism for being overly theoretical. We should actively learn from international achievements while adapting them to China's higher education reality. At the policy level, macro planning should reflect national development strategies and address common problems identified through surveys—such as insufficient institutional attention and investment—by making explicit demands on universities to provide support and resources. At the standard level, it should offer normative recommendations for shortcomings like course homogenization, incomplete systems, and disconnection from professional education. At the implementation level, it should provide differentiated guidance for universities of various levels and types, considering China's 2,900+ higher education institutions have diverse needs. A general guidance document could be developed first, with relevant associations and institutions subsequently creating specific regulations and implementation 细则.

3. Core Framework for Information Literacy Education Macro Planning

Based on these principles, macro planning should address content, delivery methods, conditions, assessment, and implementation recommendations to comprehensively drive innovative development.

3.1 Content of Information Literacy Education

Information literacy is a dynamic, multidimensional concept whose connotations continuously evolve with technological change and autonomous learning requirements. In the new environment, information is a dynamic substance

co-produced and shared by users, emphasizing social networking technologies, knowledge acquisition, and collaborative communication. Accordingly, information literacy education should integrate with academic research and social learning objectives [16]. We define information literacy as a comprehensive ability to effectively recognize, query, acquire, utilize, communicate, and create information through critical thinking to enhance learning, research, and innovation. This encompasses critical thinking, communication, and comprehensive capabilities, emphasizing cognitive, behavioral, and emotional engagement with the information ecosystem to support the development of digital, data, media, research, and innovation literacies.

Following the logical flow of information acquisition and utilization, information literacy education comprises five components: (1) information awareness cultivation, (2) information source recognition and selection, (3) information query and acquisition, (4) information management and utilization, and (5) information ethics and security.

(1) Information Awareness Cultivation. Information awareness encompasses sensitivity to information, understanding of its value, and the demand for it. Students should develop information sensitivity, application awareness, and information health consciousness—recognizing information's potential value in learning and life, maintaining proactive attitudes toward using information and tools throughout personal development, and exercising self-control to avoid adverse effects from harmful information (false, pornographic, violent content) and internet addiction. In the social media era, massive, rapidly disseminated, and highly interactive online information brings convenience but also negative effects like information overload and anxiety. College students particularly need to navigate this "double-edged sword."

(2) Information Source Recognition and Selection. In today's information ecology and academic environment, sources have diversified dramatically. Students must understand various information types (books, journals, conferences, reports, social media, scientific data), formats (digital, text, images, audio, video), and dissemination channels (open access, social networks), selecting appropriate sources based on needs. Diversification complicates reliability and authority assessment, requiring critical thinking to evaluate sources contextually and avoid tragedies like the Wei Zexi incident.

(3) Information Query and Acquisition. This is an exploratory process 贯穿 problem discovery, research, and resolution. It involves decomposing complex problems, analyzing specific issues, determining retrieval needs, developing strategies, analyzing results, and continuously refining approaches. Students should master various access channels and reflect on the query process to develop effective information retrieval habits.

(4) Information Management and Utilization. Students should organize and manage acquired information effectively using appropriate tools. In participatory information environments, students are not just information consumers

but also producers and disseminators. They should analyze, integrate, and create new knowledge to share with peers and contribute to academic discourse. This includes three levels: using management tools to organize information; critically evaluating content through reading comprehension, synthesis, and recombination to creatively solve problems; and sharing results across contexts.

(5) Information Ethics and Security. Information carries social, economic, and academic value. Misuse can cause pollution, crime, and damage. Students should understand relevant laws and policies, respect intellectual property, uphold academic integrity, strengthen security awareness to prevent leaks of confidential or personal information, and protect against cyber threats.

3.2 Delivery Methods for Information Literacy Education

Effective delivery is crucial for success. Macro planning should outline current and future methods—including credit courses, embedded teaching, training workshops, and emerging models—while emphasizing systematic comprehensiveness and functional positioning.

In recent years, many university libraries have seen credit courses compressed or canceled, converted from required to elective, with reduced hours, negatively impacting systematic talent development. Conversely, some institutions promoting embedded teaching have neglected traditional credit courses, causing declining enrollment. If credit courses lose their dominant position, it will undermine the systematic nature of information literacy education and weaken libraries' role as education bases, reducing efforts to scattered "guerrilla warfare" embedded teaching. Therefore, credit courses should remain primary, supplemented by embedded teaching, with diverse activities providing systematic development pathways.

Credit Courses serve as the main form for systematic learning. Universities should scientifically plan required or elective courses covering information retrieval, management, data analysis, ethics, academic writing, and research innovation literacy, tailored to institutional characteristics and student needs. Emphasis should be placed on applying latest pedagogical theories and practices, such as case-based, situational, and collaborative learning, with student-centered approaches.

Embedded Teaching integrates information literacy into professional or general education courses, promoting organic fusion with disciplinary knowledge [20]. Successful implementation requires coordination across departments and collaboration between information literacy instructors and subject faculty to comprehensively enhance students' professional competence and cultivate interdisciplinary, innovative talent.

Training and Workshops address specific topics for different groups, offering flexibility and timely skill enhancement. They should complement credit courses and embedded teaching.

Beyond conventional methods, rapid IT development and the rise of online and blended learning should be leveraged. Universities should promote innovative models like flipped classrooms, micro-lectures, and MOOCs, developing challenging courses and engaging multimedia applications. Information literacy education should lead in integrating emerging IT with teaching, innovating instructional design, utilizing learning data management, and expanding reach to enhance social impact.

3.3 Conditions for Information Literacy Education

Faculty and infrastructure are fundamental. Surveys show significant disparities in library information literacy faculty across Chinese universities—only 13% of surveyed libraries have dedicated professional teams, with varied disciplinary backgrounds and teaching skills [3]. This shortage directly impacts innovation and depth. Information literacy educators require not only library and information science expertise but also knowledge structures aligned with academic disciplines. As knowledge rapidly updates, continuous professional development is essential. Universities should incorporate information literacy faculty development into institutional talent plans, supporting ongoing learning, academic exchanges, and research. The teaching team should also include subject faculty, database trainers, and capable students.

Information literacy emphasizes practice. Through repeated retrieval and utilization practice, students develop creative thinking and innovation capabilities via autonomous, collaborative, and inquiry-based learning. Universities should provide diverse learning spaces: smart classrooms, discussion areas, personalized consultation spaces, and collaborative innovation environments. Educators should systematically develop teaching resources including syllabi, lesson plans, textbooks, and question banks.

3.4 Assessment of Information Literacy Education

Assessment is indispensable for educational improvement. It includes student learning outcomes assessment and institutional delivery evaluation.

Learning Outcomes Assessment is the core. Aligning with higher education talent development models, information literacy education can be categorized as "general education-oriented" (emphasizing breadth and comprehensive quality) or "research-oriented" (focusing on specialized education and high-level research capacity). Specific competency requirements should be established according to these categories and the five content areas.

Institutional Assessment evaluates teaching content planning, delivery methods, infrastructure, and faculty development, with systems that continuously adapt and innovate.

3.5 Implementation Recommendations

Comprehensive information literacy education requires multi-stakeholder collaboration, not just library efforts. The ACRL 2016 Framework's implementation appendix provides role definitions for teaching management departments, faculties, and libraries—a model worth adopting.

Teaching Management Departments should coordinate planning, provide educational conditions, and integrate information literacy competency into student evaluation systems to ensure institutional priority.

Faculties are crucial for deepening and extending information literacy education. They should incorporate it into professional development programs, integrating information literacy with disciplinary courses to enhance professional competence.

Libraries, as primary implementing institutions, bear important responsibilities. The *Regulations on Regular Higher Education Institution Libraries* explicitly defines libraries' educational and information service functions. Following the 2018 National Undergraduate Education Conference spirit of "undergraduate education as the foundation," undergraduate information literacy education should maintain a cutting-edge position with key support. Graduate-level education should emphasize high-level research capacity, closely integrated with professional training. Libraries should actively organize educational activities, strengthen communication with management, departments, and researchers, and comprehensively promote sustainable information literacy education.

Conclusion

Information literacy education in the new environment faces new challenges and opportunities, urgently requiring strengthened macro planning and research to chart future directions. Planning documents should provide norms and guidance on content, delivery, conditions, assessment, and implementation, clarifying responsibilities for university management, faculties, and libraries. This will enable universities to innovatively adapt guidance to their contexts, providing policy foundations and scientific references for reform. High-level top-down design will comprehensively lead high-quality development of university information literacy education, enhancing students' information awareness and comprehensive abilities to acquire and utilize information effectively for learning, research, and innovation, thereby contributing to the cultivation of interdisciplinary, innovative talent.

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The Planning Research of Information Literacy Education in Colleges and Universities in New Environment

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Abstract: *[Purpose/significance]* This paper aims to study the planning of information literacy education and provide references for further improving university information literacy education practice and supporting talent development. *[Method/process]* By literature review and web research, this paper analyzes the status quo of information literacy education practice and development planning progress in domestic and foreign universities, proposes the principle points of information literacy education macro planning, and deeply discusses the core system composition of university information literacy education planning in the

new period. *[Result/conclusion]* The development of information literacy education in the new environment urgently needs to strengthen macro planning to provide scientific norms and guidance for university information literacy education to enter a new stage.

Keywords: college and university; academic library; information literacy education; planning research

Note: Figure translations are in progress. See original paper for figures.

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