

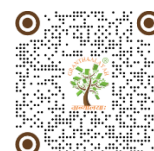
Original Article

AI LITERACY CULTIVATION FOR OLDER ADULTS IN PUBLIC LIBRARIES IN CHINA: PRACTICES, CHALLENGES, AND OPTIMIZATION PATHWAYS

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ABSTRACT

Public libraries are key institutions in promoting digital inclusion, yet their role in fostering AI literacy among older adults remains under-examined. This study investigates the current implementation of AI literacy services for older adults in Chinese public libraries through content analysis of multi-source web-based data across 32 provincial public libraries and representative institutions at varying administrative levels. Analyzing service content, delivery formats, educational objectives, and institutional support mechanisms, the study finds that such services are institutionally established but structurally fragmented. Practices prioritize introductory, tool-oriented content; rely on short-term, face-to-face delivery; and state objectives at a broad policy level without competency-oriented evaluation. These patterns reflect underdeveloped support systems and a mediating, rather than institutional, library role. The study contributes an empirical mapping of AI literacy services for older adults and advances understanding of public libraries as mediators of AI-related knowledge in later-life learning contexts.

Keywords: AI Literacy, Older Adults, Public Libraries, Digital Inclusion, Information Literacy Education

INTRODUCTION

Population aging has emerged as a defining demographic trend in contemporary China. By the end of 2024, the proportion of individuals aged 60 and above was projected at approximately 22% of the total population [Central People's Government of the People's Republic of China \(2025\)](#). In response, China has elevated proactive ageing governance to a national strategy, underscoring digital inclusion as a pivotal avenue for enhancing quality of life and social participation among older adults.

The rapid dissemination of artificial intelligence (AI)—especially generative AI since ChatGPT's public release in late 2022—has fundamentally transformed everyday information ecosystems. As AI proliferates, citizens are increasingly expected not merely to use digital technologies but to comprehend, assess, and engage with algorithmic systems, engendering global attention to AI literacy as an emerging extension of digital and information literacy.

In China, this shift has been reinforced by explicit policy directives. The State Council's Opinions on Deepening the Implementation of the "AI+" Initiative advocates for AI integration across all educational stages and emphasizes competency-based learning for the general population [State Council of the People's Republic of China \(2025\)](#). Yet as of mid-2025, only 14.3% of individuals aged 60 and above in China were internet users, while this group constituted more than half of the non-internet-using population—reflecting persistent structural exclusion [China Internet Network Information Center \(2025a\)](#).

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Public libraries, as inclusive civic institutions dedicated to lifelong learning and information equity, are widely recognized as key actors in combating digital exclusion, contributing through accessible spaces, customized training programs, and intergenerational learning initiatives [Shang and Zhang \(2023\)](#), [Ren and Duan \(2024\)](#). Nevertheless, the extent to which they are addressing AI literacy for older adults remains under-researched. This study addresses this gap by: (1) mapping existing AI-related educational initiatives targeting older adults in Chinese public libraries; (2) identifying critical challenges in content design, service delivery, and institutional support; and (3) proposing optimization pathways grounded in competency-oriented and ecosystem-based approaches.

LITERATURE REVIEW

AI LITERACY AND RELATED FRAMEWORKS

AI literacy has emerged from earlier discussions of information literacy and digital literacy. While information literacy emphasized locating, evaluating, and using information effectively [American Library Association \(1989\)](#) and digital literacy extended this to operational and cognitive competencies in digital contexts [Gilster \(1997\)](#), AI literacy is now conceptualized as a multidimensional construct encompassing technical understanding, practical interaction, critical awareness, and ethical sensitivity [Long and Magerko \(2020\)](#), [Zhang et al. \(2024\)](#). Chinese scholars similarly emphasize the integration of knowledge, skills, and ethical reflection [Cai et al. \(2024\)](#). Empirical research has concentrated predominantly on students and professionals [Laupichler et al. \(2022\)](#), [Ng et al. \(2021\)](#), [Zhang \(2025\)](#), frequently assuming homogeneous learning environments and sustained educational engagement, limiting applicability to older adult populations.

OLDER ADULTS, INFORMATION BEHAVIOR, AND LIFELONG LEARNING

Research consistently documents distinctive patterns of information behavior among older adults, shaped by life experience, health conditions, trust relationships, and risk perceptions. Studies identify both structural barriers (limited access and support) and psychological barriers (technology anxiety and low confidence), alongside strong motivation to engage with information directly relevant to everyday needs [Helsper and Reisdorf \(2017\)](#), [Van Dijk \(2020\)](#). While AI literacy for older adults is increasingly recognized as integral to lifelong learning, empirical investigation into AI literacy practices among aging populations remains sparse.

PUBLIC LIBRARIES AND LITERACY MEDIATION

Public libraries are widely recognized as pivotal institutions for information accessibility, social inclusion, and lifelong learning. Although prior studies have documented digital literacy initiatives in libraries, AI literacy has received comparatively limited attention, and existing research tends to portray libraries as training providers while under-theorizing their mediational role in shaping users' comprehension of AI as an information phenomenon [Huang \(2023\)](#).

RESEARCH GAPS

Three principal gaps motivate this study: the scarcity of systematic empirical research on AI literacy implementation in public library settings; the underrepresentation of older adults in AI literacy scholarship; and the neglect of libraries' mediational and institutional roles in AI literacy initiatives. This study addresses these gaps through content analysis of documented service practices across service content, delivery formats, educational objectives, and support mechanisms. [Surbhi and Govilla \(2026\)](#)

RESEARCH DESIGN / METHODOLOGY

This study employed a content analysis approach using online survey methods. The search formula "(elderly OR silver age OR silver-haired OR golden age OR aging) AND (artificial intelligence OR AI)" was applied with site-specific domain parameters across Baidu Search Engine to retrieve data for 32 provincial public libraries in China. The WeChat search function of Sogou was used to search public account information for each library. AI tools including DeepSeek and Kimi supplemented searches, with all information verified against original sources. [Singh and Vij \(2026\)](#)

As numerous provincial public libraries lacked evidence of AI-related educational activities for older adults online, the scope was expanded to include all administrative levels. Due to the volume of retrieval objects and potential search-term omissions, findings represent a broad overview rather than an exhaustive census. [Table 1](#) presents basic information on identified libraries; for classification purposes, municipalities are treated as provincial-level units, district-level libraries as municipal-level, and township libraries as county-level.

Table 1

Table 1 Basic Information of Libraries Conducting AI Literacy Education for Older Adults			
No.	Region	Library Name	Library Type
1	Beijing	Xicheng District Library	Municipal-level
2	Shanghai	East Community Branch of Nanxiang Town Library	County-level
3	Tianjin	Tianjin Library	Provincial-level
4	Chongqing	Tongnan District Library; Yubei District Library; Tongliang District Library	Municipal-level
		Wanshun Town, Changshou District Library	County-level
5	Jilin	Changchun Library	Municipal-level
6	Jiangsu	Nanjing Library	Provincial-level
		Zhenjiang Library; Suzhou Library	Municipal-level
7	Zhejiang	Zhejiang Library	Provincial-level
		Jiaxing Library; Wenzhou Library	Municipal-level
8	Anhui	Guzhen County Library	County-level
9	Henan	Sanmenxia Library	Municipal-level
10	Hubei	Hubei Provincial Library	Provincial-level
11	Guangdong	Guangdong Provincial Library	Provincial-level
12	Guangxi	Wuzhou Library	Municipal-level
13	Inner Mongolia	Baotou Library	Municipal-level

Thirteen of 32 provinces, autonomous regions, and municipalities have established such services. Municipal libraries are most numerous, followed by provincial and county-level libraries. [Table 2](#) presents an overview of documented activities, with the activity date for multi-session programs corresponding to the first session.

Table 2

Table 2 Status of AI Literacy Implementation Methods for Older Adults in Libraries					
Library Name	Date	Education Type	Staff	Target Audience	Venue
Xicheng District Library	2025.09.10	Series training	In-library	Older adults	Library
Xicheng District Library	2025.04.18	Series training	In-library	Middle-aged and older	Library
East Community Branch	2025.06.05	Smart scenario	Not specified	Older adults	Library
Tianjin Library	2025.08.23	Lecture	External	Multi-age readers	Library
Tongnan District Library	2025.05.14	Training	In-library	Older adults	Sub-district
Yubei District Library	2025.03.28	Lecture	In-library	Retired cadres	Sub-district
Wanshun Town Library	2025.06.10	Training	In-library	Older adults	Library
Tongliang District Library	2025.05.23	Training	In-library	Older adults	Library
Changchun Library	2025.06.02	Teaching	In-library	Older adults	Library
Nanjing Library	2025.02.21	Training	In-library	Older adults	Library
Suzhou Library	2025.09.17	Course	External	Older adults	Library
Zhejiang Library	2025.07.26	Training	External	Visually impaired and older	Library
Jiaxing Library	2025.05.21	Course	In-library	Older adults	Library
Wenzhou Library	2025.06.03	Lecture	External	Middle-aged and older	Library
Guzhen County Library	2025.03.26	Training	External	Middle-aged and older	Library
Sanmenxia Library	2025.06.10	Training	External	Older adults	Library
Hubei Provincial Library	2025.07.30	Lecture + hands-on	In-library	Older adults	Library
Hubei Provincial Library	2025.08.19	Lecture	In-library	Middle-aged and older	Library
Guangdong Provincial Library	2025.04.28	Classroom teaching	In-library	Middle-aged and older	Library

Wuzhou Library	2025.06.18	Training	External	Older adults	Library
Baotou Library	2025.08.26	Training class	In-library	Older adults	Library

DATA ANALYSIS AND RESULTS

DISTRIBUTION AND INSTITUTIONAL CHARACTERISTICS

All documented training sessions were concentrated in 2025. Nanjing Library was among the earliest to initiate AI literacy cultivation for older adults, focusing on DeepSeek—a domestically produced tool favored for its processing speed, Chinese-language proficiency, and free accessibility. The delayed integration of generative AI tools such as ChatGPT reflects two factors: libraries' need to first assimilate and comprehend AI knowledge internally, and the general pattern of prioritizing other user groups before older adults.

IMPLEMENTATION MODES AND SERVICE DELIVERY

Most activities are structured as one-time events or short series, lacking continuity and tiered progression. Face-to-face training and lectures predominate. Notable exceptions include Xicheng District Library, which conducted 18 specialized workshops between April and June 2025 under the theme “Sunset Sharing, Joy for All”—one of the most sustained documented instances—and Hubei Provincial Library’s “Silver Age E-Era” program, which combined knowledge lectures with immersive in-library experiences to create a multidimensional educational encounter. Library staff constitute the primary educational implementers, while lectures more frequently rely on external providers and volunteers. Outreach services and online delivery remain underdeveloped, restricting access for older adults with mobility challenges or psychological barriers to library attendance.

EDUCATIONAL CONTENT AND LEARNING OBJECTIVES

AI literacy training content addresses three dimensions: (1) foundational AI knowledge and societal impacts; (2) introductions to AI assistants and operational guidance—with DeepSeek receiving the highest coverage, followed by Doubao, Yuanbao, and Jimeng AI, across scenarios including information retrieval, navigation, video production, and medical consultation; and (3) AI safety, covering fraud risks such as face-swapping scams, privacy protection, and rational AI use. Educational objectives are predominantly formulated at a macroscopic level (e.g., narrowing the digital divide, fostering active aging), aligning with national policy but rarely translating into measurable competency-level outcomes at the meso or micro level.

STRUCTURAL GAPS

- 1) Fragmentation and limited depth. Programs predominantly adopt an introductory, tool-focused approach, neglecting underlying concepts, ethical considerations, and critical comprehension. Content design tends to be uniform, disregarding the heterogeneity of older adult learners in terms of age cohort, educational background, cognitive ability, and technology-use motivation.
- 2) Single-mode, short-term formats. Older adults are positioned mainly as passive recipients of face-to-face instruction. Intergenerational participation, hands-on experience, and scenario-based approaches show higher engagement but remain exceptional. Hybrid and online delivery are underdeveloped.
- 3) Ambiguous educational aims. Success is typically assessed through descriptive indicators such as participation numbers or positive feedback rather than competency-based evaluation, impeding systematic curriculum design and iterative service improvement.
- 4) Incomplete support systems. Specific policy directives and dedicated funding for public library AI literacy education remain inadequate. Instructor training mechanisms are underdeveloped, and structured feedback and evaluation tools are largely absent, hindering evidence-based service optimization.

DISCUSSION

The observed fragmentation reflects structural tensions between top-down policy agendas that encourage rapid implementation and the pedagogical depth required for sustained AI literacy development. Public libraries currently function primarily as intermediaries—facilitating access and initial exposure rather than delivering formal curricula—a role consistent with foundational concepts of information mediation and user-centered access in library and information science. From an information behavior perspective, the emphasis on practical, everyday applications represents a pragmatic adaptation to older adults’ trust-based, relevance-driven engagement with information, rather than a mere pedagogical oversight. [Hazarika \(2025\)](#)

CONCLUSIONS AND IMPLICATIONS

This study provides an evidence-based exploration of AI literacy cultivation for older adults in Chinese public libraries. Although libraries have actively participated in AI literacy programs within broader digital inclusion efforts, existing practices remain institutionally present yet structurally fragmented across content design, service formats, educational objectives, and support mechanisms. These characteristics should be understood not merely as operational shortcomings but as reflections of libraries' mediating roles and the nascent stage of AI literacy development for older populations. [Kasarapu \(2026\)](#)

The study contributes empirically by positioning AI literacy within discussions of information mediation, lifelong learning, and user-centered service provision in library and information science, underscoring the need to conceptualize AI literacy for older adults as a sustained process embedded in everyday information practices rather than a series of isolated training events. Limitations include the study's restricted sample and its focus on institutional practices rather than individual learning trajectories. Future research should employ longitudinal and mixed-methods approaches to track changes in older adults' AI literacy over time and conduct comparative analyses across institutional and national contexts.

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