

## A Study on the TTT Teaching Model for Information Literacy Education in American Universities

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### Abstract

[Purpose/Significance] To investigate the implementation effectiveness of the TTT teaching model in information literacy education in the United States and explore its practical value. [Method/Process] Employing literature review and content analysis methods, combined with web survey findings, this study examines the research and practice of the TTT teaching model in U.S. information literacy education. The focus is on stakeholders' attitudes toward TTT model implementation, the fundamental elements of its implementation, and its effectiveness in information literacy education. [Results/Conclusion] The findings indicate that the TTT teaching model has achieved at least partial success in information literacy education at American universities. Corresponding recommendations are proposed for Chinese universities regarding TTT model implementation in information literacy education from three perspectives: teaching administration departments, academic libraries, and subject faculty.

### Full Text

## Research on the TTT Teaching Model for Information Literacy Education in American Universities

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### Abstract

[Purpose/Significance] This study examines the implementation effectiveness of the TTT (Teaching Teachers to Teach) model in information literacy education in the United States to explore its practical value.

**[Method/Process]** Through literature research, content analysis, and supplementary web-based investigation, this paper analyzes the research and practice of TTT models in American information literacy education, focusing on stakeholder attitudes, fundamental implementation elements, and practical outcomes. **[Result/Conclusion]** Findings indicate that the TTT teaching model has achieved at least partial success in American university information literacy education. The paper concludes with targeted recommendations for Chinese universities from three perspectives: educational administration, university libraries, and subject faculty.

**Keywords:** Information literacy education; TTT; Teaching model; American universities

**Chinese Library Classification:** G252

## 1 Introduction

The education of undergraduate information literacy (IL) represents one of the most enduring and compelling challenges in academic library work, with fundamental questions concerning what skills students need, who should teach them, and how instruction should be delivered [1]. To improve the quality and effectiveness of information literacy education, academic libraries have pioneered various instructional models, including credit-bearing courses, training sessions, lectures, seminars, and embedded education. Since each model possesses distinct advantages and limitations, multiple approaches currently coexist in university information literacy education, each fulfilling specific functions.

While embedded information literacy education has gained popularity in recent years, most libraries struggle to deploy sufficient teaching librarians to genuinely integrate into all courses. In the United States, budget cuts and staffing reductions have made effective embedded information literacy education increasingly difficult, compelling libraries to shift their educational objectives and seek new teaching models that transfer primary focus from students to faculty 2. The TTT (Teaching Teachers to Teach or Train-the-Trainer) model, also known as the “teaching teachers” approach, embodies this transformation. This model trains subject faculty (including professors, teaching assistants, and graduate assistants) in information literacy, enabling them to deliver IL instruction within their disciplinary courses, thereby entrusting information literacy teaching to those who actually conduct the classes 2. Moreover, since subject faculty control the learning environment and are better positioned than teaching librarians to create authentic contexts, they can more effectively frame information-seeking as an integral component of problem-solving within the discipline. Consequently, the TTT model represents a potentially scalable and sustainable approach to information literacy instruction 3. Naturally, librarians continue to play vital roles in university information literacy education, but the focus shifts from direct student instruction to training faculty—teaching teachers to teach information literacy.

The United States has long pioneered research and practice in TTT teaching models, yielding substantial scholarly output. Smith first proposed the concept of “teaching teachers to teach information literacy” as early as 1997 [4]. Cowan and colleagues similarly argued that the *Framework for Information Literacy for Higher Education* expands IL into a larger, broader, and more integrated concept, presenting an educational opportunity for faculty. By equipping faculty with the tools to teach information literacy, IL education can reach far more students 2. Jane Hammons comprehensively summarized over two decades of research and practice on TTT models in American IL education 3.

In China, searches of CNKI, VIP, and other Chinese databases reveal no existing research or practice on TTT models in information literacy education. Drawing on the wisdom that “stones from other hills may serve to polish jade,” this paper analyzes and examines the TTT teaching model in American university information literacy education to identify valuable insights and provide references for Chinese universities.

## 2 Research Objects and Methods

This study builds upon the 26 cases selected by Jane Hammons in reference [3] and supplements them with 12 additional highly relevant studies identified through searches conducted on the Blythe foreign language database platform and EBSCO using the search string: (“Teaching assistants” OR “Train-the-trainer” OR “Teaching Teachers to Teach” OR “Teaching the teachers” OR “Train the trainer”) AND “Information Literacy.” After careful screening and deduplication, these 38 cases constitute the research objects for this paper. Employing content analysis, each case was systematically examined, supplemented by web-based investigation of the policies, measures, and outcomes of the institutions implementing TTT models. Given the extensive scope of these cases, this paper focuses on three key questions: (1) What are the attitudes of American stakeholders toward TTT implementation? (2) What constitute the fundamental elements for successful TTT implementation? (3) What outcomes have resulted from TTT implementation?

## 3 Findings

### 3.1 Attitudes Toward TTT Implementation

Overall, American stakeholders maintain a positive stance toward TTT models in information literacy education, with supporting arguments focusing on several key areas.

First, the TTT model addresses the persistent challenge of insufficient library teaching personnel—a longstanding issue in traditional university IL education that would become even more acute if IL were embedded in all courses. TTT advocates argue that librarians cannot possibly provide the level and type of instruction required for full IL integration across the curriculum; training sub-

subject faculty (or graduate students) to teach information literacy proves far more effective 3. Under the TTT model, librarians concentrate their efforts on training faculty, providing resources and instructional materials needed to integrate IL into courses [5], and creating appropriate virtual or physical learning environments, while the actual instruction is delivered by a larger corps of subject faculty, enabling IL education to reach more students. Additionally, TTT initiatives allow librarians to “promote information literacy education without spending more time in the classroom” by creating “a network of advocates who can teach information literacy concepts” [6].

Second, the model increases faculty-student contact time and improves instructional effectiveness. The partnership between librarians and subject faculty in TTT models ensures that each instructor can expose students to the specific information literacy skills necessary for classroom success. Notably, subject faculty spend more time with students than librarians and are more likely to “shoulder the heavy lifting” in helping students understand what information they need and how to use it within disciplinary contexts [7]. Similarly, training graduate teaching assistants to teach information literacy in certain courses allows them to reach more students without overburdening librarians [8-9].

Third, TTT implementation enhances student motivation. Since subject faculty exercise greater control over the classroom (and grades) and have established strong relationships with students, learners are more likely to embrace information literacy instruction when it comes from familiar and trusted professors 2. Additionally, subject faculty may be better positioned to demonstrate the relevance of disciplinary content to information literacy, thereby increasing student interest. These factors collectively strengthen students’ intrinsic motivation to learn information literacy.

Fourth, participant feedback has been overwhelmingly positive. American librarians have employed various evaluation methods—including surveys, reflections, and interviews—to assess faculty responses to TTT initiatives, with evaluation reports indicating generally favorable reception [10]. This positive response may be attributed to several factors: many libraries offer faculty stipends or other incentives to encourage participation, which undoubtedly influences willingness to engage; and in many cases, voluntarily participating faculty may already be predisposed toward libraries and information literacy. Nevertheless, overall participant feedback on the TTT model remains positive.

However, the research also reveals some dissenting voices and actions regarding TTT initiatives. Some institutions, such as Washington University in St. Louis, offer TTT as an option, yet teaching staff prefer embedded instruction by librarians. The University of Boulder similarly recognized this issue when beginning its TTT pilot and concluded that librarians’ perspectives on IL instruction should be re-examined. Undoubtedly, librarians possess the skills, capabilities, and knowledge to provide higher-level information literacy instruction to students, but this comes at the cost of time and limited reach [11]. Whenever possible, librarians are better positioned as facilitators, trainers, and consultants for in-

formation literacy education rather than frontline instructors. In other words, considering overall effectiveness, the TTT model remains applicable.

### 3.2 Fundamental Elements for TTT Implementation

Successful TTT implementation in American universities comprises several essential elements.

First, subject faculty must recognize information literacy education as a core component of undergraduate teaching. Evidence suggests that deeper understanding of information literacy may increase faculty willingness to engage with libraries and integrate IL into their courses 3. Consequently, strengthening faculty awareness of information literacy constitutes the foundation for TTT initiatives. American institutions employ diverse strategies in this regard. Some approach this from a strategic development perspective, involving faculty and administrators in IL teaching and assessment to deepen understanding [12]. Others prioritize incorporating information literacy standards into general education requirements, directly involving librarians in strategic planning and initiating IL education for faculty and administrators through strategic planning committees 13. Some institutions, under the guidance of student development standards, launch collaborative projects between libraries and education research departments to integrate IL skills instruction as a means of achieving core institutional learning outcomes [14]. Still others implement information literacy ambassador programs within Quality Enhancement Plans (QEP) to maintain institutional focus on information literacy [15]. In summary, enhancing faculty recognition of information literacy's importance in undergraduate education, securing administrative support and participation, and establishing IL as an institutional priority constitute the foundation for TTT success.

Second, libraries must provide comprehensive information literacy training for subject faculty, primarily through several formats. Workshops represent the main approach, such as those conducted by librarians at the University of Nevada, Las Vegas during orientation seminars to introduce IL concepts and skills, helping faculty design assignments that enable students to locate credible sources and prevent plagiarism [16]. At the University of South Carolina Aiken, all librarians conduct a series of practical, discipline-based workshops that lay the groundwork for integrating IL concepts into general education, with most faculty attending at least one workshop before year's end 13. Seminars serve as another important training method; for instance, the University of South Carolina Aiken Library collaborates with relevant departments to regularly host open seminars on various IL topics for all faculty, staff, and students [17], while information literacy seminars for faculty at James Madison University led to the development of a TTT program for laboratory instructors in biology courses [18]. Workshops constitute a third format, such as the series developed collaboratively by Florida International University Library and the College of Arts to explore topics including IL and campus culture, campus initiatives, partnership strategies, faculty development models, and FIU's information literacy framework

[19]. At Hanover College, librarians restructured their workshop series based on faculty interests [20]. Fourth, establishing information literacy learning communities provides dedicated space for faculty development, as implemented at Westminster College [21]. Training delivery includes both face-to-face and online formats, with institutions selecting approaches based on audience needs. Southeast University represents an exception, requiring all faculty and staff to complete an online information literacy course developed by librarians as part of a broader campus initiative to ensure technological literacy [22].

Third, librarians must commit to collaboration with faculty and support their professional development. To facilitate TTT implementation, American academic librarians prioritize diverse collaborative approaches. At Eastern Washington University, librarians partnered with multidisciplinary faculty to ensure each instructor could expose students to specific IL skills needed for classroom success, resulting in increased student confidence, improved research skills, and enhanced research papers [23]. Ohio State University librarians collaborated with subject faculty to promote faculty development programs supporting IL instruction [24]. At Western Michigan University, librarians worked with faculty to co-create assignments, develop teaching strategies, and establish criteria for integrating IL content into courses while achieving faculty teaching objectives [25]. Throughout these collaborations, librarians aim to expand faculty IL knowledge, redesign assignments or course structures to teach IL, and provide necessary training and resources for faculty and graduate assistants to assume responsibility for IL instruction in specific courses. For example, the University of Montana teaching librarians partnered with English department writing faculty to develop a program where librarians taught graduate assistants responsible for composition instruction and provided necessary information resources, enabling TAs to deliver effective IL guidance to students [26]. Additionally, evidence suggests that facilitating faculty professional development should be considered a viable role for librarians [27].

Fourth, libraries must continuously improve both physical and virtual environments for information literacy education. This includes providing IL teaching resources that supply the material foundation for faculty implementing TTT. For instance, Western Michigan University librarians created information literacy micro-courses that can be seamlessly integrated into disciplinary courses, equipping students with skills to locate, evaluate, and use reliable information sources [28]. These micro-videos are also provided to faculty to enhance their IL knowledge and more effectively integrate IL into disciplinary curricula. Additionally, libraries develop faculty IL resources to support both faculty learning and teaching of IL, such as the multiple IL modules—including collection, evaluation, application, and information ethics—developed by Northern Kentucky University librarians in collaboration with faculty to assist IL instruction in disciplinary courses [29].

Fifth, institutions must develop information literacy education programs to drive TTT implementation. American universities emphasize program-based

approaches, such as Grossmont College Library's first-year information literacy experience program, which creates new behavioral patterns between faculty and students to promote collaboration and foster deeper learning, greater engagement, and increased student success [30]. At the University of Kentucky, librarians created an IL program in introductory biology laboratories, training biology teaching assistants who each led two lab sections to teach scientific database searching and Endnote Online; librarians provided only the TA training, with all subsequent IL instruction delivered by TAs encouraged to develop personalized teaching styles [31]. Northern Kentucky University librarians established an information literacy ambassador program to support faculty implementation of TTT models [32].

### 3.3 Implementation Outcomes

American practice demonstrates several effects of TTT implementation.

First, the model liberates librarians from burdensome and potentially ineffective teaching responsibilities, allowing them to dedicate more time to improving library instruction and research guides and providing appropriate training for graduate teaching assistants (GTAs) [33]. However, implementing TTT initiatives does not automatically reduce the volume of direct instruction librarians provide to students. In some cases, having subject faculty teach information literacy actually increases demand for librarian-led instruction rather than decreasing it. Nevertheless, in certain contexts, the TTT model does enable librarians to provide less direct instruction while reaching more students with IL education, particularly in initiatives where librarians train graduate assistants or instructors to assume IL teaching responsibilities in specific courses.

Second, TTT implementation enhances the information literacy skills of participating faculty, particularly enabling GTAs to gain valuable experience and refresh their own IL competencies. Moreover, GTAs familiar with IL skills can lead courses and continue sharing these skills with undergraduates throughout the semester, allowing students to learn information literacy in more personalized and sustained ways [33].

Third, because information literacy is relevant to every discipline and provides a valuable foundation for navigating, understanding, and engaging with the evolving information environment [34], TTT initiatives that encourage faculty across disciplines to integrate IL education into all professional courses substantially expand student exposure to information literacy education. For example, Northern Kentucky University's information literacy ambassador program aims to integrate IL concepts into courses to improve student learning; over 30 faculty members from nearly 20 departments participated, modifying individual courses with new learning experiences and assignments to enhance IL for all students [35].

Fourth, students benefit significantly from TTT models. Learners gain not only from content relevant to research assignments but also from the classroom envi-

ronment itself 26. While definitive statements about TTT's impact on student learning remain difficult, evidence suggests the model can positively affect student learning or, at minimum, does not appear to harm it compared to librarian-led instruction. Indications show that IL instruction by subject faculty or course instructors can positively influence student performance and learning. However, based on the cases studied, insufficient evidence exists to definitively claim that TTT implementation improves student information literacy 3.

## 4 Recommendations

Multiple teaching models for information literacy education coexist in universities, each serving necessary functions. Although TTT's impact on student performance and learning remains uncertain, American practice demonstrates that the model achieves at least partial success 3. Therefore, Chinese universities should actively explore TTT model research and implementation, paying attention to several issues across three levels.

### 4.1 Educational Administration Level

First, administrators must update their conceptual frameworks. While multiple Chinese policy documents—including *Regulations on University Libraries*, *Guiding Opinions on Further Strengthening Information Literacy Education in Higher Education*, *Education Informatization 2.0 Action Plan*, and *Specifications for Digital Campus Construction in Higher Education Institutions (Trial)*—mandate information literacy education, the enormous target audience of all faculty and students makes it impossible for a small number of teaching librarians to complete the required instruction. This reality requires educational authorities (including national, provincial, and institutional management departments) to recognize that responsibility for information literacy education must be shared across the entire institution, all faculty, and libraries, rather than being limited to libraries alone.

Second, administrators should provide comprehensive support through policy, programs, funding, and personnel. Although TTT models hold tremendous potential for expanding IL education, their development and implementation require substantial time, energy, and financial resources 3. Educational authorities must therefore offer tangible support from policy, programmatic, financial, and personnel perspectives, ensuring effective implementation through institutional and policy frameworks, particularly by providing financial support or stipends for faculty participating in TTT initiatives.

Third, authorities should innovate support models. The core concept of “curriculum ideology and politics” involves integrating ideological and political education into disciplinary courses taught by subject faculty—a model that has proven highly effective in Chinese higher education. The TTT teaching model similarly integrates information literacy education into disciplinary courses taught by subject faculty, making the two approaches highly analogous. Drawing on

this concept, we can propose the notion of “curriculum information literacy” as an innovative support model: establishing special reform and research projects for “curriculum information literacy” at national, provincial, and institutional levels; creating provincial and institutional “curriculum information literacy” exemplary teaching teams (or grassroots teaching organizations) and demonstration courses; and actively conducting training for faculty teaching these demonstration courses. Simultaneously, authorities should conduct inspections and evaluations of relevant research projects, construction initiatives, and demonstration courses according to regulations and procedures, ensuring through this innovative support model that TTT implementation does not become merely formalistic.

#### 4.2 Library Level

First, teaching librarians must transform their mindset. Teaching librarians have played prominent roles in developing information literacy education, serving as primary providers of IL instruction and undertaking long and arduous efforts to gain institutional recognition for IL education, achieving a certain degree of success [36]. Naturally, some librarians feel proprietary about information literacy and their role in providing direct instruction to students and may be reluctant to relinquish this responsibility. Since the TTT model transfers frontline IL instruction to subject faculty, it may be perceived by some teaching librarians as a significant challenge to their professional expertise and envisioned professional roles 3. Therefore, teaching librarians must shift their focus toward subject faculty, enabling more disciplinary instructors to become the main force in IL education, striving to integrate IL into as many courses as possible, and fostering student development of information literacy in appropriate environments and contexts so that students view IL as an integral component of problem-solving within disciplines.

Second, libraries must strengthen information literacy training for subject faculty. Before widespread TTT adoption, librarians must employ all possible communication channels to convey the potential benefits of this strategy to faculty while simultaneously using various methods to enhance faculty IL competencies, ensuring they master essential information knowledge, skills, and ethics. This includes understanding basic document types, fundamental information retrieval techniques and common tools (databases), basic methods of information organization and evaluation, common citation formats, and distinctions between citation and plagiarism. Training formats should be flexible based on content, including workshops, symposia, seminars, and individual consultations. Engaging with faculty in their own learning and research spaces to demonstrate a more comprehensive perspective on information literacy and provide examples of how librarians can support their teaching and research will further motivate them to impart IL skills to students.

Third, libraries must equip subject faculty with necessary teaching resources and tools for TTT implementation. These resources may be developed by librarians

themselves or sourced from third parties, such as resources from the “University Information Literacy Education Database” or the Founder Apabi university information literacy learning platform. Whether self-developed or third-party, libraries should provide personalized recommendations based on different disciplines and individual faculty needs to truly facilitate TTT implementation.

Fourth, libraries should enhance publicity and incentives. To increase faculty acceptance of the TTT model for IL education, libraries must strengthen promotion of its value, demonstrating to subject faculty how IL contributes to disciplinary teaching and showcasing successful cases of IL integration into professional courses [37]. Simultaneously, libraries should employ various incentives—such as project support and teaching stipends—to encourage faculty participation in TTT practice.

### 4.3 Subject Faculty Level

First, subject faculty must change their mindset. Although many faculty members recognize the importance of information literacy and express concern about student deficiencies, most have not integrated IL into their courses or do so only in limited circumstances (e.g., courses with research papers) [38]. Therefore, effective TTT implementation requires transforming faculty perceptions so that they recognize information literacy as a core component of undergraduate teaching and grant it appropriate emphasis.

Second, faculty must enhance their understanding, actively explore, and continuously develop. Since subject faculty serve as the key agents for implementing TTT models and achieving student IL learning outcomes, only when they recognize IL’s importance, incorporate IL into course syllabi as teaching content, and understand how to teach IL can information literacy truly be integrated across the curriculum and TTT objectives be realized. Additionally, during TTT implementation, only through continuous analysis and reflection on processes and outcomes, exploring success factors, and applying lessons learned can faculty promote sustainable and healthy TTT development. Furthermore, faculty’s proactive pursuit of their own professional development, particularly actively and voluntarily improving their own information literacy, holds significant meaning for effectively implementing TTT models in IL education.

## 5 Conclusion

As a teaching model for information literacy education, TTT has undergone years of research and practice in the United States, yielding certain scholarly achievements. Although the model’s validity requires further research and practice, and no definitive evidence currently demonstrates its positive impact on student IL learning, American research nevertheless indicates that TTT merits investigation and implementation in university information literacy education.

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