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User Relationships Enhancement in a School-Based Library

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With rapid technological advancements, academic libraries are compelled to reevaluate their mission statements and to reinmagine their roles in higher education institutions. The integration of innovative technologies in the learning and academic work has transformed user relationships with academic libraries in many ways. The paper examines the initiatives that a school-based library has undertaken to accommodate students' needs in light of emerging technologies. These initiatives involve space allocation, campus-wide programs and activities, and the provision of information-related services. The resulting benefits for academic user engagement and the current challenges and opportunities for academic libraries are discussed in the paper.

Keywords: academic libraries, space allocation, e-learning, information literacy

Introduction

Cutting-edge technologies including artificial intelligence, big data, cloud computing have a significant impact on research work and educational activities. The complexity and variability of the research process combined with the growing demand for effective personalized education are driving the adoption of artificial intelligence (AI) related technologies (Tzanova, 2024). AI in higher education encompasses emerging trends such as customized learning, tracking student performance through data analytics, the use of tutoring tools, and the rise of smart or intelligent campus (Cox, Pinfield, & Rutter, 2019).

The proliferation of technological innovations and digital resources in the pedagogical environment has a prominent effect on the apparatus of school-based libraries. The increasing dependence on technology for accessing and utilizing library resources coupled with the emergence of cooperative learning paradigms has led to the reconfiguration of both physical and information resources within academic libraries (MacWhinnie, 2003). Virtual reference service, typically linked on a library's homepage, helps users access various library resources, through e-mail, web-based forms, Frequently Asked Questions (FAQs), Bulletin Board System (BBS), or real-time online inquiry platforms (Fang, 2013). Radical transformations in the information environment incite library professionals to integrate services and practices into the teaching and learning process in higher education (Bell & Shank, 2004). Adding to the traditional role of academic library staff is learning developer, learning technologists, and skills managers with important technology and instructional design skills, as well as a set of other transferable skills including teaching and instruction with respect to new media and learning style (Tait, Martzoukou, & Reid, 2016). To this end, it is imperative to rethink the role of academic librarians and enhance the delivery of library services as user relationships continue to evolve.

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Background

The University of Shanghai for Science and Technology (USST) is a key multidisciplinary university under the direct supervision of Shanghai municipal government, specializing in applied research with engineering as its core discipline. The university upholds the fundamental educational mission of "fostering virtue through education" and continues its tradition of industry collaboration by integrating resources across industry, university, and research. It comprises 18 colleges, schools, and departments, offering a wide range of disciplines including engineering, science, economics, management, literature, law, and art. Students and faculty benefit from extensive academic resources through a network consisting of a central library and multiple school-based libraries and information centers distributed across the campus.

College of Foreign Languages of USST combines the distinctive features of foreign language disciplines with the academic strengths of a science and technology university. It plays a pioneering role in the nation in teaching and research of foreign languages for science and technology, with approximately 7,000 graduates to date. The College offers a wide range of General English and English for Academic Purposes (EAP) courses, cultivates professional talent in foreign languages, conducts academic research in language-related fields, and actively engages in social service.

The library affiliated with the College was established in 1981 and is located on the first floor of the College building, which also houses multimedia classrooms, meeting rooms, and faculty offices. It offers a rich repository of subject-specific resources tailored to the needs of the College's students and faculty. In 2024, the College of Foreign Languages celebrated its 45th anniversary. Following a year-long renovation, the library reopened for the Fall 2025 semester with updated furniture and modernized facilities.

The library is currently open on regular weekdays and operated by a single full-time librarian. Students usually reached the library between classes, bringing their laptops and course projects, while departmental faculty paid a visit after work meetings or lectures. It indicates that a comfortable study space fully equipped with electronic facilities is key to boosting library usage within the College.

Space Allocation

The library is a multifunctional place mainly dedicated to the College students' academic work and research practices. It includes a reading area with book collections in the fields of social sciences, arts, linguistics, history, and economics, as well as a study area equipped with 30 computer stations, each furnished with newly upgraded digital courseware platforms and Office software, headphones, adjustable chairs, and electrical outlets. Lighting and glass partitions are arranged to create a quiet and comfortable study environment. There are two public tables, sofas closed to the entrance, suitable for group work, and a print station for printing and scanning.

The library subscribes to approximately 50 national leading journals annually, covering the areas of foreign language education, foreign literature studies, linguistic sciences, and regional studies. These resources provide students and faculty with access to cutting-edge research trends and scholarly developments. Visitors can browse the current issues displayed on racks, while past issues and bound volumes are stored in closed stacks and can be retrieved by the librarian upon request. Paper books and other materials are classified by subjects and can be located through their call numbers.

At the digital level, the courseware platforms subscribed to by the institution provide English major students with supplementary materials in science and engineering contexts for extracurricular reading and after-class

practice. Users with a valid student ID can log onto platforms using the library computer stations, which are equipped with full internet access. The Ubiquitous Learning platform consists of three modules, each offering course-related materials and exercises. The Academic English Listening and Speaking module is designed to develop students' ability to understand and communicate effectively in academic contexts. It focuses on enhancing their comprehension of academic listening materials and their ability to engage in communication using appropriate academic language. The Academic English Reading and Writing module focuses on academic writing. It draws on the structural and stylistic features of academic discourse combined with practical examples, to help develop students' fundamental research skills, critical thinking, and independent learning abilities. Built on the self-developed "Corpus of Written English for Chinese Science and Engineering Majors" and "Comparable Corpus of English and Chinese Journal Articles", the Vocabulary Bank module is designed to help students achieve fluent reading of academic English texts and develop flexible, accurate use of academic vocabulary.

The Transcorda platform is a teaching and training system designed for translation majors and the Master of Translation and Interpreting (MTI) program at the College. It provides in-depth performance analytics across the entire instructional process. The platform encompasses high-quality English-Chinese aligned corpus, curated and reviewed by frontline faculty from research departments at over a dozen of leading "985" and "211" universities in Shanghai. Instructors can also import their own corpora using build-in templates. The system classifies common translation errors into categories, such as consistency, accuracy, formatting, and context based on industry-standard error taxonomy models. It generates comparative performance data that compare individual outcomes with the class average, offering instructors a clear understanding of both individual student performance and overall class progress. By seamlessly integrating with mainstream computer-assisted translation (CAT) tools, such as Trados and Wordfast, the system enhances the quality and effectiveness of translation instruction within the College.

To support scholarly research in various fields, students have access to a broad range of academic resources and services through the university library website. These include 36 full-text foreign language journal databases and eight abstract databases, either subscribed to by the university or remain open-access. Major foreign-language academic platforms, such as Elsevier ScienceDirect, EBSCO, and Web of Science provide access to peer-reviewed journal articles, research papers, and citation indexes, which support academic writing, literature reviews, and research project. Conference proceedings and an electronic dissertation repository can also be accessed.

Furthermore, the university collaborates with an array of online platforms to support the research endeavors of students, researchers, and scholars. For example, the Artificial Intelligence Knowledge Service platform provides knowledge services in fields, such as artificial intelligence, big data, the Internet of Things (IoT), and the industrial internet, featuring high-quality digital resources from both domestic and international sources. It is built on a comprehensive disciplinary framework for the information industry, encompassing computer science, electronic communications, and intelligent manufacturing, providing support for undergraduate education. The NeoSCI Research Support database is an integrated research service system that uses natural language processing and visual analysis technologies powered by AI to help researchers access essential resources for literature searches and grant proposal preparation. The Global SIM Application Resource platform consists of four sections: academic disciplines, industry backgrounds, technological applications, and software tools; it provides comprehensive knowledge of Computer-Aided Technologies (CAx) encompassed in various activities within the

product development and manufacturing process. Featuring practicality, innovation, and professionalism, the platform offers a comprehensive range of learning pathways designed to support students and educators in relevant fields.

By incorporating modernized facilities and updated digital resources alongside its traditional book-lending function, the library serves as a communal space for e-learning, collaborative study, and academic research, catering to the diverse needs of both students and faculty.

Engagement Programs and Activities

A variety of lectures, programs, and activities are organized in each semester to broaden students' knowledge of the information environment and enhance their ability to effectively use library resources. For example, industry experts were invited to deliver lectures on the concept of the new ecological library, which focused on the construction of library ecosystems, the integration of metaverse technologies, and the application of AI technologies in resource management and the information service in libraries. Through real-life examples and in-depth discussions with the speakers, students gained valuable insights into the topic.

Promoted as an "academic competency incubator", the university library, partnered with Beijing Souzhi Data Technology Co., Ltd., launched the "Compete With Data, Enlighten the Future" database search competition. By participating in the online practice questions, students gained hands-on experience in information retrieval and improved the research skills essential for navigating the contemporary information environment.

The summer online research program, jointly organized by the Sino-German College, the Business School, and several external institutions, is open to undergraduate, master's, and doctoral students from diverse academic backgrounds during the summer break. Library staff, collaborated with subject faculty, assisted students in developing personalized research plans through online literature review, data analysis, experimental design, and academic discussions. Weekly online discussions were held to ensure steady progress on students' respective projects. Each student was paired with a peer from a different discipline, fostering mutual support and collaborative learning throughout the program. Cross-disciplinary interactions help expand the scope of research by introducing alternative research tools and methods.

The annual book reading event takes place in local areas including Shanghai Gongqing Forest Park where students participate in groups to share their reflections and insights on selected books or articles. The reading-sharing event facilitated by departmental faculty fosters cultural literacy, critical thinking abilities, and communication skills in an engaging and supportive setting. In line with the theme of 2025 World Book and Copyright Day—Reading: A Bridge to the Future, the university library, in collaboration with Zhejiang Xinhua Media and the College of New Students at USST, launched a special book-hunting event. The activity offered a wide selection of classic and popular titles for students to borrow on-site, along with themed e-book collections on topics, such as "Reading in the AI Era: Leading Innovation", accessible through QR codes.

Additional themed activities organized by the university library association, such as "Meet the Library: A Guided Library Tour" and "Accompany the Library: Library Channel Promotions", engaged students with the rich cultural heritage of the century-old library and the university. These activities also provided hands-on opportunities for students to participate in the professional work of librarianship, including giving library tours, cataloging materials, managing official library channels, and handling other day-to-day tasks.

The Librarian

With emerging technologies and increasingly dynamic learning environments, traditional information skills are insufficient to meet the evolving information needs of higher education. Students become consumers and creators of information in collaborative learning spaces, which extends the scope of information literacy (Association of College and Research Libraries [ARCL], 2016). The expression of information literacy abilities derived from the Framework for Information Literacy for Higher Education is "the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning" (ACRL, 2016, p. 3). It offers conceptual guidance for librarians, faculty, and other institutional partners in higher education. The difference between how novice and experts handle information literacy tasks were compared in the Framework, emphasizing the importance of strategic information literacy program planning.

Some empirical studies have found that information literacy training based on academic library resources has positive effect on students' information literacy skills. One study employed an online survey based on a modified version of the Beile Test of Information Literacy for Education (B-TILED) and found that a set of information literacy skills among graduate students, objectively assessed in the study, were improved from library training, including one-time instruction sessions (Zhao, Luo, Sabina, & Pillon, 2023). Another study used a pre-tests and post-tests method and administered three tests to assess their informational literacy skills, the disposition of critical thinking and selecting and processing information skills among fourth-year students. The study result showed that educational activities focused on the use of library resources (physical and digital) effectively improved these essential skills (Liu, 2025).

Library information service models and programs that were already applied in comparable academic institutions are inspiring. The model of research life cycle created by Duke University librarians categorized common digital research needs at different stages of research process. Based on the model, the library partnered with other departments organized workshops and instructional training sessions that fit well with students' academic agenda and were conducive to their academic growth (Shaw, Milewicz, Madden, & Boers, 2020). The "Thesis Research 101" seminar series launched by Booth library at Eastern Illinois University consist of three librarian-led seminars: "Researching the Literature", "Organizing Your Reference", and "Present Your Thesis". These seminars were conducted in lecture style, hands-on activities, or student-centered style depending on the context of the topic. The library program designed to develop foundational research skills for research and scholarly activities can be tailored to other institutions (Brantley, Corrigan, & Duffin, 2020).

At the College, information literacy training led by the librarian is incorporated into the school orientation sessions at the start of each semester. During the orientation, incoming students are introduced to a wide range of library resources and research tools, including the library website and catalog, online learning platforms, the information retrieval system, the novelty search system, and various databases and e-resources subscribed to by the university. The librarian provides a demonstration on how to submit interlibrary loan and book recommendation requests, and how to access to library databases and other open-access resources related to students' majors. In addition to the orientation program, information literacy instruction is typically offered on an ad hoc, drop-in basis to address students' particular research needs. The majority of students' inquiries concern basic research techniques, including advanced and cross-database search, note-taking, and citation management.

In response, the librarian provides individualized guidance along with relevant research tools and software to support their research work.

Conclusions

In a digitalized and mediated era, information and resources are disseminated and accessed beyond the limitations of time and space, given the ubiquitous use of electronic devices and communication media. The digital transformation precipitated by the global lockdown in response to the pandemic foregrounded the ongoing need for digital practices and the cultivation of digital literacy, including key social and transversal competencies such as teamwork and collaboration, digital communication, critical thinking and autonomous learning in student-centered learning environments in higher education (Otto et al., 2024). New learning paradigms have transformed the needs and expectations of academic library users. The professional capacity of academic librarians is increasingly expected to encompass pedagogy, academic liaison, and technical support, in addition to the traditional management of collection repositories.

The initiatives undertaken by the library of College of Foreign Languages at USST are effective in view of these disruptive changes. The combination of physical and digital resources creates technology-enhanced learning environments. Collaborative programs and activities engage students in peer learning, multidisciplinary exploration, and the development of transferrable skills, such as communication, collaboration, problem-solving, and leadership-skills that are crucial for their future professional careers. The library's information literacy training addresses students' research needs and develops common research skills, such as searching literature databases, saving citations, and using bibliographic management tools. Library practitioners in comparable institutions who are in search of new ways of service delivery may find these practices useful.

However, many challenges continue to confront the role of academic librarians. One obstacle to library education is the lack of knowledge of pedagogy and instruction skill set among many library staff members (Bell & Shank, 2004). The acquisition of general knowledge of emerging technologies must be commensurate with a relevant focus on both technical and subject-specific areas, along with the ability to provide precise and targeted referrals (Halbert, 1999). Moreover, in the daily operations of a medium-sized, school-based library like the one discussed in the paper, staffing remains a critical issue. The limited number of personnel often has to juggle among clerical tasks, providing support for students and faculty and performing administrative work.

Recognizing these ongoing challenges and obstacles, the College library has proposed some measures. To better reach out to students and avoid working in silos, the library should take a more proactive role in collaborating with campus organizations and departments and partnering with the central library for additional training and support. The librarian should engage in close consultations with instructional designers and department heads to strategically develop a systematic and comprehensive information literacy program that aligns with the school curricula and supports students' academic work as part of co-curricular facilitation. Additionally, the librarian should make continuous effort to improve pedagogical and instructional skills, gaining deep disciplinary knowledge in relevant fields, pursuing ongoing professional development, and staying current with advancements in educational technologies.

By integrating into the academic fabric of their institutions, academic libraries serve not only as conduits for information, but also as facilitators of scholarly endeavors. As technology continues to advance, academic libraries are evolving in response to new trends and making continuous efforts to foster collaborative learning environments with high-quality information resources, state-of-the-art facilities, and specialized academic

expertise to support study and research needs. In alignment with the overarching goal and mission of cultivating talent, academic librarians, faculty and staff must equip themselves with comprehensive knowledge and skills to guide students toward achieving their academic goals and succeeding in their future scholarly and professional career. Through strategic collaboration with campus departments and institutional partners, academic libraries are believed to forge meaningful and enduring relationships with academic users.

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