Journal of Contemporary Educational Research, 2025, Volume 9, Issue 5
http://ojs.bbwpublisher.com/index.php/JCER
ISSN Online: 2208-8474
ISSN Print: 2208-8466

Strategies for Enhancing the Digital Academic Service Capacity of Librarians in Vocational Colleges under the Background of New Quality Productivity

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Abstract: With the rapid development of new quality productivity and the in-depth advancement of digital transformation, vocational college libraries, as important supporting institutions for teaching and research, are facing the dual challenges of service model transformation and capacity improvement. Based on the changes in the demand for digital academic services under the background of new quality productivity, this paper systematically analyzes the current situation and problems of the digital academic service capabilities of librarians in vocational colleges, constructs a capability model including four dimensions: cognitive attitude, knowledge reserve, skill application, and communication and sharing, and proposes capability improvement strategies from aspects such as organizational incentives, professional training, service innovation, and technical support. Research shows that librarians in vocational colleges need to comprehensively enhance their digital academic service capabilities through paths such as concept renewal, skill strengthening, service transformation, and environment optimization, in order to adapt to the demands of educational reform in the era of new quality productivity.

Keywords: New quality productivity; Vocational colleges; Librarian; Digital academic services; Ability improvement

Online publication: June 4, 2025

1. Introduction

In the context of the rapid development of new quality productivity, digital transformation has become the core driving force for the high-quality development of vocational education [1–3]. As the center of knowledge services in vocational colleges, libraries are undergoing a profound transformation from traditional literature services to digital academic services. Digital academic services refer to a new service model in which librarians utilize digital technologies, tools, and methods to provide full-process and multi-dimensional support for teaching and

research, covering multiple fields such as data management, digital publishing, open science, and academic collaboration [4,5]. With the in-depth advancement of industry-education integration in vocational colleges and the increasing demand for scientific research, the demands of teachers and students for digital academic services have shown the characteristics of personalization, precision, and full-cycle [6].

However, there is a significant gap between the current digital academic service capabilities of librarians in vocational colleges and this demand. Most librarians remain at the traditional service level, lacking data thinking, technological application, and interdisciplinary collaboration capabilities, making it difficult for them to effectively support the digital teaching and research activities of teachers and students. This problem not only restricts the exertion of the service efficiency of libraries, but also affects the quality of talent cultivation and scientific research innovation in vocational colleges. Therefore, exploring the improvement path of digital academic service capabilities of librarians in vocational colleges under the background of new quality productivity has important theoretical value and practical significance.

2. Changes in the demand for digital academic services under the background of new quality productivity

The core features of the new quality productivity are digitalization, networking, and intelligence. This trend has profoundly changed the ecosystem and scientific research paradigm of vocational education. Against this backdrop, the demands of teachers and students in vocational colleges for digital academic services have undergone significant changes.

From the perspective of service content, teachers and students are no longer satisfied with simple literature retrieval and delivery, but need comprehensive services covering the entire cycle of scientific research. In the initiation stage of scientific research, trend analysis, hot topic exploration, and topic selection support are needed; During the research process, the support of data collection, processing, and analysis tools is required; During the outcome production stage, services such as open publishing, intellectual property rights, and influence assessment are required. These demands require librarians to possess multiple capabilities such as data literacy, technology application, and disciplinary knowledge.

From the perspective of service methods, teachers and students tend to prefer personalized and proactive services. The traditional passive response mode can no longer meet the demands. Librarians need to go deep into the front line of teaching and research, understand the specific needs of teachers and students, and provide customized solutions. For instance, providing embedded data management services for research teams and developing digital teaching resources for teaching teams, etc.

From the perspective of technological application, the demand of teachers and students for new technological tools is increasing day by day. The application of technologies such as artificial intelligence, big data analysis, and virtual reality in vocational education is constantly deepening. Teachers and students hope that libraries can provide relevant technical training and tool support. For example, text mining technology is utilized to analyze industry trends, and visualization tools are employed to display scientific research achievements.

3. Current situation and problems of digital academic service capabilities of librarians in vocational colleges

Through the analysis of relevant literature and field research, it is found that the digital academic service

capabilities of librarians in current vocational colleges have the following prominent problems:

Insufficient professional ability is the primary bottleneck. Most librarians lack a systematic professional background in library and information science and have limited mastery of the theories and methods of digital academic services. In terms of professional skills, the mastery level of core digital academic skills such as data management, text analysis, and visualization is generally low. Weak technical application ability is a common phenomenon. Although most librarians have basic computer operation skills, their application ability of professional software and tools is insufficient, and the lack of subject knowledge is an important constraint.

The professional settings of vocational colleges usually have distinct industry characteristics, and the demands of teachers and students are highly specialized. However, librarians have limited knowledge of the relevant industries and find it difficult to accurately grasp the actual needs of teachers and students.

The lagging service concept is a deep-seated obstacle. Some librarians still adhere to the traditional service concept and have an insufficient understanding of the necessity and value of digital academic services. In terms of service attitude, there is a lack of initiative and innovation, as well as awareness of going deep into the front line of teaching and research. This conceptual lag is often more difficult to overcome than technical shortcomings.

The imperfect training system is an important issue. Libraries in vocational colleges generally lack a systematic training plan for librarians. The training content is fragmented, the methods are monotonous, and the effect is limited. In particular, specialized training for digital academic service capabilities is seriously insufficient, and there is a lack of effective support for the improvement of librarians' capabilities.

4. Construction of the digital academic service capability model for librarians in vocational colleges

Based on the analysis of the demand for digital academic services and the characteristics of vocational college libraries, this paper constructs a digital academic service capability model for vocational college librarians consisting of four levels.

The cognitive attitude layer is the foundation of ability development, including four dimensions: digital awareness and thinking, cognition of digital academic value, cognition of digital academic needs, and awareness of digital skill reconstruction. This level emphasizes librarians' understanding of the necessity of service transformation in the context of new quality productivity and their willingness to proactively adapt to changes. Librarians in vocational colleges need to establish a "user-centered" service concept and understand the profound impact of digital transformation on vocational education.

The knowledge reserve layer serves as the support for capability development, encompassing four dimensions: digital academic knowledge, library and information science knowledge, computer network knowledge, and specialized knowledge in specific disciplines. Librarians in vocational colleges not only need to master the basic knowledge of library and information science, but also need to understand the development dynamics and technological trends of related industries, and form a compound knowledge structure of "library and information science knowledge + disciplinary knowledge + digital knowledge."

The skill application layer is the core of capabilities, encompassing four dimensions: the application of digital technology, the creation of digital content, problem-solving and innovation, as well as digital learning and development. In terms of technology application, it is necessary to master skills such as data collection, cleaning, analysis, and visualization. In terms of content creation, it is necessary to be capable of developing

digital teaching resources, building thematic databases, etc. In terms of problem-solving, innovative thinking and practical ability are required. In terms of learning and development, it is necessary to maintain a continuous learning attitude and ability.

The communication and sharing layer is about capability expansion, encompassing five dimensions: teaching and training, project management, collaborative communication, dissemination and marketing, and security protection. Librarians in vocational colleges need to have the ability to train teachers and students and be capable of organizing digital academic activities. It is necessary to master project management methods and coordinate multiple resources. It is necessary to be good at communicating with teachers and students and accurately grasp the demands. It is necessary to promote the service achievements and expand the influence. Attention also needs to be paid to data security and intellectual property protection.

5. Strategies for enhancing the digital academic service capabilities of librarians in vocational colleges

In view of the current situation and problems of the digital academic service capabilities of librarians in vocational colleges, combined with the capability model, this paper proposes the following improvement strategies.

5.1. Fostering a digital academic service culture

Conceptual guidance is the prerequisite. The leadership of the library should fully recognize the importance of digital academic services, incorporate them into the library's development strategy, and convey the necessity and vision of service transformation to librarians through various means. Special topic seminars can be organized to analyze the challenges and opportunities of new quality productivity in vocational education and help librarians establish a digital service mindset.

Stress relief is the key. The improvement of digital skills may bring anxiety and stress to librarians. Libraries should establish support mechanisms, such as setting up a technical mentorship system to provide one-on-one guidance for librarians; establish mutual assistance groups to promote the sharing of experiences; allocate work tasks reasonably to avoid overburdening librarians.

5.2. Building a systematic training system

The training content should cover all dimensions of the capability model. At the cognitive attitude level, carry out training on digital academic concepts. At the knowledge reserve level, organize training on professional knowledge of library and information science, industry knowledge, and digital technology knowledge. At the level of skill application, the focus is on strengthening practical skills training such as data analysis, visualization, and digital content creation. At the level of communication and sharing, enhance the teaching and training, project management, and communication and coordination capabilities of librarians.

The training methods should be diversified. In addition to traditional lectures and courses, more emphasis should be placed on practical training methods. Project-based learning can be carried out to enable librarians to master skills through actual projects. Organize workshops and conduct practical skills training. Establish a digital academic laboratory to provide a platform for technical experience and practice.

Training resources should make full use of both on-campus and off-campus resources. Joint training can be carried out in collaboration with the information technology department and teaching and research units within the school. Off-campus, one can participate in training activities organized by industry alliances and the Library

Working Committee. Digital learning resources such as MOOCs and online courses can also be utilized to provide flexible learning opportunities for librarians.

5.3. Promoting the transformation of service models

Embedded services are an important direction. Librarians should go deep into departments and research teams to understand the actual needs of teachers and students and provide customized services. For instance, participate in the data management of scientific research projects, support the teaching team in developing digital resources, and provide information support for skills competitions, etc.

Data service is the core content. Vocational college libraries should establish a scientific research data service system, including services such as consultation on data management plans, support for data storage and sharing, and training on data analysis tools. A school-based data warehouse can be built to store and manage the research data of teachers and students.

Open science services are an emerging field. Libraries should promote the concepts of open access and open data, and assist teachers and students in sharing research results in compliance. Build an institutional knowledge base to centrally display the academic achievements of the school. Provide intellectual property consultation to help teachers and students protect their innovative achievements.

5.4. Optimizing the digital service environment

The tool platform is the fundamental support. Libraries should be equipped with necessary software tools such as data analysis and visualization, build digital academic service platforms, and integrate functions such as resource retrieval, data analysis, and achievement display. It is possible to cooperate with industry enterprises and introduce digital tools that meet the needs of vocational colleges.

The practice community is an important carrier. Establish a digital academic service practice community to promote experience sharing and collaborative innovation among librarians. The community can regularly organize activities such as technical salons and case sharing to create a good learning atmosphere.

The cooperative network is an expansion approach. Strengthen cooperation with libraries of other institutions, public libraries, and industry enterprises, and share resources and experiences. Participate in regional or national digital academic service alliances, learn advanced practices, and enhance service capabilities.

6. Conclusion

Against the backdrop of the rapid development of new quality productivity, enhancing digital academic service capabilities has become an inevitable choice for librarians in vocational colleges to adapt to the demands of the times. The implementation of these strategies requires the attention of the library leadership, the policy support of the school, and the active participation of librarians. Through paths such as concept renewal, skill enhancement, service transformation, and environment optimization, librarians in vocational colleges will be able to comprehensively improve their digital academic service capabilities, better support the teaching and research work of the schools, and make greater contributions to cultivating high-quality technical and skilled talents.

Funding

China Transportation Education Research Society Educational Science Research Topic "Research on Improving the Quality of Part-time Teachers in Transportation Vocational Colleges under the Background of New Quality Productivity" (JT2024YB245)

Disclosure statement

The authors declare no conflict of interest.

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