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Research on the Information Literacy Cultivation for Liberal Arts Majors in Application-Oriented Universities

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Abstract: In the context of the New Liberal Arts initiative and digital transformation, the cultivation of information literacy for liberal arts majors in application-oriented universities faces new requirements. This paper examines the current situation and challenges in this process. It highlights that while some progress has been made in policy support and practical teaching conditions, there are still serious problems. For example, the curriculum lags behind technological development, practical teaching does not match industry needs, teachers lack practical skills, and the evaluation method is too simple. To address these issues, comprehensive improvement measures are suggested. The curriculum should be restructured by combining technology with real-world scenarios. Cooperation between universities and industries should be strengthened to build practical platforms. "Industry-academia integrated" teaching teams should be created, and a multi-dimensional evaluation system should be established. The goal is to train application-oriented liberal arts talents who can integrate information across different fields, make critical evaluations, make data-driven decisions, and possess a sense of ethical responsibility, thereby better serving regional economic and social development.

Keywords: Cultivation of Information literacy; Application-oriented Universities; Liberal arts majors

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1. Introduction

In today's fast-changing digital world, information literacy is of great significance. China is promoting the New Liberal Arts initiative, which focuses on integrating different disciplines, setting the right values, and using technology to aid education. Its goal is to train versatile talents for the new era. This is especially crucial for liberal arts majors in application-oriented universities. These universities are designed to match the needs of local industries and emphasize practical skills. Information literacy has become a key ability for professionals in all fields. For liberal arts majors, information literacy is not just about traditional information search skills. It now encompasses a range of abilities, such as integrating information from different fields, processing and analyzing big data, thinking critically, applying knowledge innovatively, and understanding information ethics and responsibility.

The core of cultivating information literacy for liberal arts majors in application-oriented universities is to meet the needs of local industrial development. It is essential to integrate the development of information skills into professional

education and practical training[1]. There needs to be a shift from merely imparting knowledge to developing abilities, and from just using tools to cultivating the right mindset. This paper aims to explore the current situation and challenges in cultivating information literacy for liberal arts majors in application-oriented universities. It also proposes practical ways to improve and provides references for training application-oriented liberal arts talents who possess sound humanistic knowledge, keen information awareness, and strong practical abilities.

2. Current Status of Information Literacy Cultivation for Liberal Arts Majors in Application-Oriented Universities

In recent years, application-oriented universities have made notable progress in cultivating information literacy for liberal arts majors. The main aspects are as follows:

2.1. Policy Support and Curriculum Development

Thanks to national and local policies encouraging the New Liberal Arts initiative and the cultivation of application-oriented talents, many universities have increased their focus on information literacy education. New courses such as Information Retrieval and Fundamentals of Data Analysis have been added to the liberal arts curriculum. Some universities have also integrated information application modules into specific major courses. These efforts have established a basic curriculum framework for information literacy education, laying a foundation for further development.

2.2. Improved Practical Teaching Conditions

Some universities have invested more in facilities and resources for practical teaching. They have built Comprehensive Business Simulation Centers and Digital Humanities Laboratories[2]. These centers are equipped with basic information systems and data analysis software, allowing students to use these tools and technologies in realistic situations. The investment in practical teaching conditions has enhanced the learning environment, providing students with practical experience in a controlled setting[3].

2.3. Industry-University Collaboration

An increasing number of universities are collaborating with local companies and industry organizations. They jointly develop courses, incorporate real business cases into the curriculum, and organize short-term internships[4]. These actions aim to introduce real industry information needs into teaching, enabling students to start tackling practical problems and gain real-world experience. This cooperation helps bridge the gap between academic learning and industry requirements.

2.4. Enhanced Student Competencies

Due to these efforts, students' basic information tool skills have significantly improved. Through courses and extracurricular activities, liberal arts students have become more proficient in using common office software, database retrieval, and basic data analysis tools[5]. These improved skills form a solid basis for further developing their information abilities and preparing them for more advanced learning and practical work.

3. Problems in Information Literacy Cultivation for Liberal Arts Majors in Application-Oriented Universities

Despite the achievements, several problems remain that hinder the effective cultivation of information literacy for liberal arts majors in application-oriented universities:

3.1. Lagging Curriculum

The current curriculum often fails to keep pace with technological and industrial development. Courses predominantly focus on theory and basic tool introduction, with information literacy goals not well-integrated into core major courses. The course content updates slowly and does not cover emerging technologies like big data, artificial intelligence, and business intelligence. Consequently, a significant gap exists between what is taught in schools and what the rapidly evolving digital industry demands[6].

3.2. Disconnection from Industry Needs

Practical teaching does not align well with real industry needs. On-campus training frequently employs outdated, static, or overly simplified data. Simulated scenarios do not reflect the complexity of actual business situations. Although some university-industry collaborations exist, most are superficial, with few in-depth cooperative projects[7]. Students rarely gain access to core business data or have opportunities to address real information problems[8]. As a result, the "applied" and "practical" aspects of teaching are nominal, and students do not acquire the real-world experience they require.

3.3. Insufficient Faculty Capabilities

Faculty members generally lack practical information skills. Many liberal arts teachers have limited knowledge and experience in data analysis and emerging information technologies[9]. This deficiency makes it challenging for them to guide students in advanced information analysis and complex problem-solving. Additionally, recruiting "dual-qualified" teachers with substantial industry experience is difficult, and their numbers are insufficient[10]. The shortage of qualified faculty is a significant bottleneck that affects the quality of information literacy cultivation.

3.4. Singular Evaluation Mechanism

The current evaluation method relies heavily on traditional written reports and exam scores. It does not comprehensively assess crucial abilities such as the rationality of information acquisition methods, the rigor of data analysis processes, the application of critical thinking, consideration of information ethics, and the practical value of solutions[11]. This approach fails to accurately measure students' capabilities to use information to solve real-world problems, thereby limiting the effectiveness of the overall education process.

4. Improvement Measures for Information Literacy Cultivation

To address these issues, application-oriented universities need to implement comprehensive measures to reform the cultivation of information literacy for liberal arts majors. The following suggestions are proposed:

4.1. Curriculum Restructuring

The curriculum should be restructured through the deep integration of technology with real-world scenarios. Rigid course barriers need to be dismantled, and core information literacy competencies should be explicitly embedded into the teaching objectives and content of each liberal arts major's core courses[12]. Application-oriented courses that combine cutting-edge technologies with liberal arts disciplines should be introduced. Additionally, a modular and stackable "tool-chain" micro-credential system should be established. This will enable students to master the data processing, analysis, and visualization tools that the industry requires, providing them with a more practical and industry-aligned education.

4.2. Strengthening Industry-Education Collaboration

The cooperation between universities and industries should be deepened to construct practical talent development platforms. Universities should establish regular mechanisms for researching enterprise information needs and design teaching projects based on real-world pain points. Models such as the "Enterprise Data Clinic" could be created, where

faculty-student teams provide real data analysis services for local small and medium-sized enterprises[13]. Graduation projects and theses should be linked to actual corporate information analysis projects, giving students hands-on experience in solving real-world problems. Meanwhile, on-campus training centers should be upgraded by introducing enterprise-level information systems and real-time industry data streams. This will create more realistic information application environments and better prepare students for the workplace.

4.3. Faculty Development

Faculty transformation is essential to build "industry-academia integrated" teaching teams. Universities should implement mandatory systems for regular faculty internships in enterprises. This will allow teachers to participate in corporate information processing workflows and enhance their practical skills and understanding of industry needs. Universities should also actively recruit industry professors who possess both sector experience and technical expertise[14]. Interdisciplinary teaching teams could be formed by pairing liberal arts faculty with technical teaching assistants. Moreover, targeted training for faculty on digital skills and industry applications should be conducted to tangibly improve their practical information teaching capabilities. This will enable them to effectively guide students in advanced information analysis and problem-solving.

4.4. Multi-Dimensional Evaluation System

A multi-dimensional and value-added evaluation system must be established. Industry mentors should be involved in assessing the practicality of project outcomes, data analysis quality, and compliance. "Competency portfolios" should be implemented to document students' key decisions, methodological choices, and ethical reflections throughout the information processing workflow. Additionally, the credit value of industry-recognized information skill certifications should be acknowledged. This will shift the evaluation focus from mere knowledge recall to the practical application of information capabilities and students' career development potential. This comprehensive evaluation approach will more accurately measure students' abilities to use information to solve real-world problems.

Disclosure statement

The author declares no conflict of interest.

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