

# *Study on the Current Status of Information Literacy of Preservice Teachers from the Perspective of Educational Informatization—A Case Study of Primary Education Major at Shangqiu Institute of Technology*

Hao Yan

*Shangqiu Institute of Technology, Shangqiu, 476000, China*

**Keywords:** Educational Informatization, Information Literacy, Preservice Teachers

**Abstract:** In the era of informatization 3.0, the information literacy of preservice teachers will be incorporated into the comprehensive quality evaluation standards for students. This study investigates the current status of information literacy among students majoring in primary education at Shangqiu Institute of Technology. It reveals that these students have a high level of information ethics but show some insufficiencies in information awareness and skills, and a lack of information knowledge. To enhance preservice teachers' ability to understand, appreciate, discern, critique, and solve information problems, this study proposes strategies including strengthening information supervision by society, adjusting the curriculum system by schools, and enhancing information literacy consciously by students.

At present, society has entered the era of informatization 3.0, where education inevitably integrates with information technology [1]. Whether it's the general public or ordinary teachers, all are surrounded by massive amounts of information. The application of artificial intelligence and AI technology in the field of education has turned information into an intangible resource, altering the way people think and behave. While information brings tremendous welfare to people's lives, its negative impacts and effects cannot be ignored.

The concept of information literacy was proposed by Paul Zurkowski in the United States in 1974. Since then, many countries and universities have advocated, framed, and planned for the enhancement of information literacy. With the development of technology, information literacy has taken on new connotations[2]. The Prague Conference in 2003 defined information literacy as "a capability to identify, find, evaluate, organize, produce, use, and communicate information effectively to solve a problem[3]." Research on information literacy in China started relatively late. Most scholars believe that preservice teachers, as future people's teachers, should not only have certain survival abilities but also possess professional capabilities. This professional capability should include the ability to use network technology to obtain teaching information and to design teaching processes using related resources. In April 2018, the Ministry of Education of China released the "Educational Informatization 2.0 Action Plan," which clearly states the shift "from enhancing the ability of teachers and students to apply information technology to comprehensively enhancing their information literacy." The plan, in its "Action to Comprehensively Enhance Information Literacy," points out

"incorporating student information literacy into comprehensive quality assessment of students," setting newer and higher standards for cultivating talents with high-level information literacy[4].

## **1. Where is the Scale: The Scope of Research on Information Literacy**

Information literacy refers to the ability of individuals to understand, appreciate, discern, and critique information during their interaction with it. It also encompasses the capacity to continuously improve oneself in the process of interacting with and utilizing media, thereby fostering societal development[5]. Information literacy education aims to cultivate people's abilities to understand, appreciate, discern, and critique information, and to adeptly use media, ultimately leading to continuous self-improvement and societal advancement. The field of research constructed around teachers' information literacy should integrate information management, communication, psychology, sociology, and cultural studies, forming a multidisciplinary domain of interrelated disciplines.

Information literacy includes information ethics, knowledge, awareness, and skills. Information ethics, the baseline of information literacy, encompasses the sum of awareness, behaviors, and norms that people generate in their interactions with information, guided by traditional customs and social concepts. Information knowledge forms the foundation of information literacy, wherein possessing theoretical knowledge is essential for better understanding information technology. Information awareness, the prerequisite of information literacy, involves discerning useful information from a vast and complex array, necessitating a certain sensitivity towards information. Information skills, the core of information literacy, play a crucial role in its enhancement. These skills include the abilities to collect, disseminate, process, innovate, and evaluate feedback on information.

## **2. Unaware of Being Wet: The Current Status of Normal Students' Information Literacy**

Shangqiu Institute of Technology began enrolling students in the Primary Education major in 2019 and currently has about 1,500 students enrolled. As a normal (teacher training) major, the institute developed its talent training program with reference to the "Professional Ability Standards for Normal Students in Primary Education (Trial)," "Teacher Education Curriculum Standards (Trial)," and "Accreditation Standards for Primary Education Major," incorporating information literacy as a crucial part of the program. This study aims to understand the current state of information literacy among students in the Primary Education major at Shangqiu Institute of Technology and to offer suggestions for enhancing the information literacy of students in normal majors.

Based on the connotation of information literacy, this study used a modified "Normal Students' Information Literacy Status Questionnaire" to investigate and analyze the students' information awareness, knowledge, skills, and ethics. The study targeted 920 third- and fourth-year students in the Primary Education (normal) major at Shangqiu Institute of Technology, using random sampling for the survey. Out of 350 questionnaires distributed, 331 were returned, yielding a return rate of 94.57%. The number of third- and fourth-year students was roughly equal. The following is an analysis of the survey results.

### **2.1. Information Ethics: The Baseline of Information Literacy**

91.12% of respondents agreed with all practices required by information ethics, with an average score of 3.66 (out of 4). Students in the Primary Education major at Shangqiu Institute of Technology have formed certain beliefs, values, and worldviews to a certain extent, which can regulate their information behavior based on their judgment. However, the survey found that some students held negative attitudes towards issues like citing sources, expressing views under real identities, or browsing others' files without permission. A recent popular online topic about whether video

platforms and mobile apps should charge fees (not discussing the reasonableness of APP charging standards here) revealed that some netizens and students participating in the survey did not recognize intellectual property rights.

## **2.2. Information Knowledge: The Foundation of Information Literacy**

Students' information knowledge was slightly lacking, with an average score of 2.33 (out of 4). In the questionnaire survey on information ethics, knowledge, awareness, and skills, the average score for students' information knowledge was 2.33 (out of 4), while the scores for the other areas exceeded 3.0. In the information knowledge questionnaire, two questions scored below 2 on average, and seven questions scored below 3. For instance, 46.83% of students reported complete lack of knowledge in using database software; 55.29% of students claimed basic mastery of text and table processing software, with 6.95% having no knowledge at all, indicating a lack of basic information knowledge.

Knowledge is the foundation of technology; only with relevant knowledge can technology be better applied. Since the 1980s, various teaching technologies such as slides, projections, recordings, and videos have been used, and since the 1990s, with the application of computer technology, multimedia teaching has replaced various teaching media. Teachers need text, sound, and image resources to conduct teaching activities. Text and table processing includes PowerPoint, Excel, Word, or WPS, etc., and students need to be proficient in these software to better use multimedia teaching in future teaching processes.

## **2.3. Information Awareness: The Premise of Information Literacy**

Students' information awareness was above average, scoring 3.03 out of 4. With the vast amount of information surrounding people, some valuable and some useless, discerning useful information requires a certain level of awareness. Information awareness is the premise of information literacy, necessitating awareness of using information technology to solve problems. The survey found that students in the Primary Education major at Shangqiu Institute of Technology, while possessing some information awareness, were slightly lacking. The level of concern for daily information and the ability to filter information should be improved. With the prevalence of unverified and unreliable information online, students need sufficient awareness to distinguish between truth and falsehood. Additionally, information overload may cause confusion and helplessness among students. In the teaching process, students should be taught to filter and organize information, sourcing from the most valuable and reliable sources.

## **2.4. Information Skills: The Core of Information Literacy**

Students had a high recognition of their information skills, scoring an average of 3.14 out of 4. Information skills are the core aspect of information literacy, including the abilities to collect, transmit, process, and evaluate feedback on information, directly impacting the enhancement of information literacy. Students must have strong information skills to keep pace with the development of the information society. The survey revealed that students in the Primary Education major had average abilities in acquiring and processing information, with nearly 10% unable to filter or process information. Some students even struggled to verify the reliability, legality, correctness, and authority of information. Using illegal or incorrect information in classroom teaching could negatively impact students' values. As future primary school teachers, students in the Primary Education major should focus more on enhancing their information skills literacy.

### **3. The Internet Era and Literacy: Strategies for Enhancing Normal Students' Information Literacy**

Normal students, as future teachers, are a unique social group with high status, creators, and disseminators of information, acting as guides for students and playing the role of opinion leaders. The level of teachers' information literacy is not only relevant to themselves but also impacts the information literacy level of students.

#### **3.1. Educational Informationization and the Need for Information Ethics in Society**

In 2017, the Association for Educational Communications and Technology (AECT) defined educational technology as follows: "Educational technology is about enhancing knowledge through the strategic design, management, and application of teaching and learning processes and resources, and the ethical application of theory, research findings, and best practices." In this definition, AECT specifically emphasizes the issue of ethics. Moreover, the excessive reliance on mobile apps like mobile games and TikTok has negatively impacted students' learning and life. Addressing these issues requires stronger government regulation of online information and strict screening of harmful content, leveraging the guiding role of mainstream media and opinion leaders, and maintaining online order through public opinion and legal regulations. Similarly, the virtual world of the internet, mirroring and impacting reality, also requires robust moral and legal constraints.

#### **3.2. Diversified Information Environment Promotes Information Knowledge**

Currently, mobile apps like games and TikTok attract attention, causing addiction and impacting learning and life. Normal students need to maintain a unique sensitivity and attention to information while mastering the latest educational information trends and proactively learning information technology. They should actively acquire information knowledge, proficiently use online search tools and platforms for teaching information, and understand the integration of information technology in education and teaching to improve their information application skills. As future teachers, normal students should strengthen their information knowledge, consciously adhere to relevant laws, regulations, and rules during information acquisition, use, and dissemination, and have awareness of intellectual property rights to protect their and others' legal rights. Shangqiu Institute of Technology currently uses an academic management system where students can query timetables, exam results, and provide teaching feedback. However, for library resource queries, online information, and campus information queries, different online platforms are needed. Similarly, online elective courses require platforms like Zhihuishu and Chaoxing. The school should integrate these platforms to meet students' diverse needs for information collection, course learning, teaching feedback, and daily life. Strengthening the campus information environment will enhance students' information literacy in its application.

#### **3.3. Educational Cognition and Individual Differences Affect Information Awareness**

Normal students, a special group, need targeted improvement in information literacy, especially in information awareness.

Educational technology reform has always evolved with technological advancements, from a book, blackboard, and chalk to projectors in the 1930s; from broadcast, film, television teaching to computer multimedia teaching; from "electrified teaching" to "modern educational technology" concepts. As future teachers, normal students should familiarize themselves with educational technology, especially staying alert to cutting-edge technological developments. The current concept of the

"metaverse" provides many possibilities for future education, such as VR technology creating virtual classrooms for teacher-student interactions in various scenarios. Such teaching environments demand higher information literacy from teachers. Normal students, as future teachers responsible for knowledge dissemination, convey not only knowledge but also values, worldviews, and perspectives. Teachers, as both disseminators and receivers of information, need to be cautious about selecting and using network information to enhance their teaching.

### 3.4. Information Literacy Education Enhances Normal Students' Information Technology

Higher education institutions offering normal programs should establish and improve the information literacy curriculum system, integrating information technology enhancement into all courses.

Shangqiu Institute of Technology's Primary Education major has a four-year program, aiming to produce comprehensive primary school teachers with good communication and collaboration skills. Students must complete 160 credits over four years. Courses include public basic, elective, professional foundational, major, elective, and practical courses. Courses like "Microteaching" in the fifth semester and "Modern Educational Technology" in the sixth semester strictly implement the "Professional Ability Standards for Normal Students in Primary Education (Trial)." Students learn new technologies, enhance information awareness, improve information technology application skills, familiarize themselves with multimedia teaching tools and common teaching equipment, and conduct practical activities for effective teaching design, enhancing their abilities in information resource acquisition and processing. Other courses like "Educational Research Methods," "Primary School Language Curriculum and Teaching," and "Primary School Science Curriculum and Teaching" also include courseware production and teaching design, meeting information literacy training requirements. The school also offers a variety of online courses for self-study.

In summary, normal students will face many challenges in their future work. Making information literacy a part of their professional capability is essential to confidently handle complex network issues in the future. Teachers, as future disseminators of information, should possess the ability to discern, filter, and process information. Society and schools should provide a favorable environment for normal students to receive positive value-laden information for their students. Therefore, the concept of enhancing normal students' information literacy in the context of educational informationization must be fully implemented in society, schools, and especially normal higher education institutions, to improve normal students' information technology and literacy levels.

### Acknowledgement

Supported by the Key Scientific Research Project Plan of Higher Education Institutions in Henan Province (Project Number: 22B880030).

### References

- [1] Qu Manqi, Li Baomin. *The Path to Strengthening Teachers: The Progress, Changing Features, and Prospects of China's Primary and Secondary School Teacher Training System*. *Journal of Chinese Education*, 2023, (11): 79-84.
- [2] Li Xiaoning, Li Guangtong. *A Review of Information Literacy Education for Minors in Public Libraries*. *Journal of Library Science*, 2023, 45 (06): 97-101.
- [3] Li Zhuoying. *Research on Core Competencies and Cultivation Strategies of Adult Students in China*. Chengdu: Sichuan Normal University, 2017.
- [4] Ministry of Education of the People's Republic of China. *Action Plan for Educational Informatization 2.0 [Z]*. 2018-04-18.
- [5] Zhao Jianqing, Song Zhenshi. *Research and Practice on the Implicit Integration Path of Curriculum Ideology and Politics and Information Literacy Education: Taking the Information Literacy Education of East China Normal University Library as an Example*. *Library Magazine*, 2023, 42(03): 107-113.