Research on the Path of Information Literacy Competence Enhancement for College Students

Xiu Zhang *
School of Information, Yunnan Normal University, Xiu Zhang, China.

Abstract. With the continuous development of information technology, the Internet has become an important way for college students to obtain information and make interpersonal communication, especially in today's era of high human rights and comprehensive informatisation, what is the information literacy level of college students, and how to effectively improve the information literacy of college students is a problem that needs to be solved in the digital era of the present time. Of course, this also puts forward higher requirements for college students' information literacy education, and also highlights the importance of information literacy. Based on the above background, this paper analyses the current evaluation index system related to information literacy through the literature research method, and designs and develops a suitable information literacy assessment system for college students based on the evaluation index system, so as to provide scientific and accurate assessment for college students' information literacy ability, which is more conducive to the enhancement of college students' information literacy ability.

1. Introduction

With the rapid development of information technology and the increasingly changing and rich information society, information literacy as a basic literacy requirements, every social citizen should have basic information literacy skills, and in the development of a nation, college students are the main force for the future development of a country, is the mainstay of the future information-based society, so it is particularly important to strengthen the information literacy of college students.

However, the information literacy ability of college students is generally low, which not only affects their study and life, but also restricts their future career development. Therefore, it is of great theoretical and practical significance to study the information literacy ability enhancement path of college students to improve their information literacy ability and promote their overall development. In this paper, we will start from the current situation of college students' information literacy ability, analyse the evaluation index system of college students' information literacy through the literature research method, and construct a college students' information literacy assessment system based on the index system, in order to provide guidance for the improvement of college students' information literacy ability.

2. Interpretation of the study

Information Literacy, as a complex comprehensive ability literacy, traces its concept from "media literacy" - "digital literacy" - "network literacy". -Network Literacy", and the three are superimposed on each other to form a relatively independent and general conceptual category of Information Literacy[1].

Bill. Gates once pointed out that aggregating, managing and using information are the necessary abilities in the information age [2]. With the arrival of the information age, information literacy has gradually become a basic literacy that college students must have. Compared with other literacy, information literacy is inseparable from the information environment, rooted in the information-based educational environment and resources, and is a unique product of the information and digital era.

Combining the development history and current situation of college students' information literacy at home and abroad, this paper defines college students' information literacy as the ability of college students to comprehend the huge and complicated information in the information ecosystem, to select the information needed for the collection of society and their own development, and to apply the acquired information in a creative and responsible way. The key is the formation of college students' information literacy competence, which focuses on the development of positive information awareness and information social responsibility through digital learning and innovative thinking training, the ability to integrate new information with the existing information knowledge structure in the process of understanding, selecting and applying information, evaluating the accuracy of information content in an autonomous, open and interactive environment, thinking critically about information content and The ability to use highly interactive technology to creatively carry out cooperative
problem solving, and in the whole process, the social responsibility and information ethics of university students as social citizens are fully and comprehensively reflected through information competence.

3. Current status of information literacy research among university students

Information literacy, as a complex and comprehensive competence, has been the focus of researchers' attention for scientific and effective assessment. By analysing the relevant literature on information literacy and information literacy assessment at home and abroad, it is found that the relevant foreign studies have mostly mentioned the attention to "skills", while the relevant domestic studies have more descriptions of "competence", and relatively speaking, the foreign studies are more specific than the domestic ones, and have more detailed classification of different competence levels[3]. Comparatively speaking, foreign studies are more specific than domestic ones and have a more detailed classification of different levels of competence, and foreign countries are relatively rich in assessment based on contextualisation or task-based assessment, while domestic assessment of students' information literacy is mostly based on questionnaires and examinations, which are single and fragmented in assessment methods, without continuity, and only play the role of measurement, which is not of substantial help to the enhancement of information literacy competence[4]. Therefore, in view of the above shortcomings, this study designs and develops an information literacy platform that focuses on the function of evaluation and assessment, and at the same time has the function of resource learning, through which the process of "test-evaluation-feedback-learning" is continuously carried out. For students, it is not only a test, but also a learning process, not only a one-time diagnosis, but also a stage-by-stage summary of their assessment results to improve their learning in a targeted manner.

4. Research on Information Literacy Evaluation Indicator System for College Students

With the continuous development of the information age, people are increasingly aware of the importance of information. After the basic theoretical research on the concept and content of information literacy, researchers from all over the world gradually began to pay attention to the research and formulation of information literacy standards, and many countries and regions have successively introduced indicators for its measurement and evaluation [5].

The United States started earlier and developed more comprehensively in the development of information literacy evaluation standards and index system for college students. As early as 1998, the American Association of School Librarians (AASL) and the Association for Education Communications and Technology (AECT) jointly proposed nine criteria for student information literacy [6], proposed nine criteria for student information literacy, which evaluate the information literacy skills of primary and secondary school students in terms of information literacy, independent learning and social responsibility [7].

In 1999, the Information Literacy Working Group of The Society of College, National and University Librarians published Information Literacy in Higher Education, which has since been followed by educators in the UK to develop students' information skills. In 2011, SCONUL interpreted the content published in the concept of seven pillars of information literacy to establish a core paradigm for higher education and argued that information literate people are able to perceive how they access, use, manage, and evaluate information and comply with socio-ethical norms to create information and produce something. The process of developing information literacy is not a fixed linear development, but rather a dynamic and resilient process of growth and learning [8].

In 2015, ACRL revised and released the Framework on the basis of the Information Literacy Competency Standards [9], which has made great changes compared with the old standards in both structure and content, which draws on the research results of the Threshold Concepts in its structure, and arranges the information literacy according to the six Threshold Concepts; and permeates the theory of Meta-Literacy in its content, with special emphasis on Meta-Cognition. In the structure, it draws on the research results of "threshold concepts" and arranges the information literacy according to six threshold concepts; in the content, it penetrates the theory of "meta-literacy" and puts special emphasis on "meta-cognition"[10].

The Professional Committee on Information Technology Education of the China Association for Educational Technology released the Basic Education Information Technology Curriculum Standards, which aims to cultivate and improve students' information literacy. The curriculum standards are set according to different school age groups and are divided into primary school age, junior high school age, and senior high school age standards. The curricula for the elementary and junior high school age groups consist of basic modules and extension modules, the basic modules include hardware and system management, information and processing expression, and network and information communication, and the extension modules vary according to school age, with the primary schools section including introductory algorithms and programming and introductory robotics, and the junior high school section including algorithms and programming and robot design and production. The high school portion of the programme includes Networking Technology Applications, Multimedia Technology Applications, and Programming.

To sum up: (1) Foreign information literacy standards focus on practical expressions, while domestic ones focus on theoretical expressions. On the one hand, this is closely related to the different ways of
information transmission, education and habits of mind in acquiring knowledge at home and abroad. Teaching in foreign countries focuses on discovering knowledge from practice and cultivating students' ability to do things on their own, find problems and solve them. While domestic teaching fails to transform from simple knowledge transfer to practical hands-on aspect, on the other hand, it is related to the different research characteristics at home and abroad. Most of the foreign research on information literacy is practical research, while the domestic research on information literacy is more theoretical and less practical.

(2) The evaluation standards of information literacy published so far are more or less the same, with two to three levels of evaluation indexes, and the core contents of the evaluation standards are more or less the same, generally evaluating from the four aspects of information demand, information awareness, information competence and information ethics and morality. The evaluation standards are basically divided into four types according to the subject or scope of examination, namely, basic education information literacy evaluation standards, higher education information literacy evaluation standards, regional information literacy evaluation standards and general information literacy evaluation standards. Among them, foreign research on information literacy is more mature than domestic research, and most of the assessment items in foreign countries are based on the selection of highly recognised information literacy assessment standards or frameworks for college students, and comprehensively evaluate college students' information literacy through a combination of multiple-choice, short-answer, simulated real-world operational tasks and other diversified test question formats. This paper mainly focuses on college students as the research object, i.e., the evaluation standard of information literacy in higher education should be used as the standard specification for the evaluation index system of college students' information literacy.

5. Purpose and Significance of Information Literacy Competency Assessment for College Students

The purpose of the Information Literacy Competency Assessment for University Students is to assess the level of competency of university students in the areas of information acquisition, information assessment, information application and information creation. The purpose and significance of the assessment are as follows:

(1) To assess the information literacy level of college students. Through the assessment, we can understand the specific performance and competence level of college students in information literacy, which can help to assess the effect of education and teaching, and provide a basis for education reform and teaching improvement.

(2) Discovering the shortcomings and deficiencies of college students. Through the assessment, we can find out the weaknesses of college students in information literacy, help them recognise their own deficiencies, and make targeted enhancement and improvement in order to improve their information literacy ability.

(3) Cultivate college students' information literacy ability. Through the results of the assessment, targeted training and guidance can be provided to college students to help them improve their abilities in information acquisition, information assessment, information application and information creation to enhance their information literacy level.

(4) Adapting to the development needs of the information society. Information literacy is one of the basic abilities to adapt to the development of the information society, and the results of the assessment can provide guidance for college students to live, study and work better in the information society and improve their competitiveness and adaptability.

In conclusion, the purpose of information literacy competence assessment for college students is to assess, discover, cultivate and improve the information literacy competence of college students so as to adapt to the development needs of the information society and improve their competitiveness and adaptability.

6. Initial structure of the information literacy assessment platform for university students

In order to explore the effective path of cultivating college students' information literacy competence, firstly, we review the relevant literature, collate the relevant problems and put forward the corresponding solution strategies, and determine the content of the study and evaluation indexes. Secondly, the questionnaire survey is used to get the students' willingness to use the information literacy competence platform, functional demand and resource demand. Then, design the online functional model based on the existing research according to the students' needs and evaluation indexes. Finally, the platform is developed for use and relevant data are collected for analysis and verification.

According to the design of demand analysis, the assessment platform is divided into the student side and the administrator side. The student side is mainly the main interface of the platform for learners to assess and study, while the administrator side is for the management of the platform and the update of resources.

The functional structure is shown in Fig1.
(1) Analysis of student functions

The student learning function diagram is designed by combining the previous analysis and the results of the survey of student platform requirements. Learners’ learning functions are divided into the interconnected aptitude test function and resource learning function. Aptitude test is the core of this platform and the starting point of learners’ learning. Learners determine the learning objectives through the feedback results of the aptitude test. Learning resources function, learners according to the learning objectives, independent learning mode and learning resources, but also according to the system recommended learning resources for learning. Its resource learning module includes the theoretical learning of information literacy, in which there are retrieval techniques, information resources, academic resources, writing tools, scientific research tools, as well as resource learning modules such as test questions, courseware/cases, lectures/training for information literacy. Resource recommendation function, which recommends learning resources to learners based on learners’ ability test and learners’ behavioural data.

(2) Administrator Function Analysis

Administrator is a specialised person who manages and monitors users, resources and functions. The administrator is mainly responsible for updating the resources, dealing with learners’ feedback on learning exchanges, and maintaining and updating the system.

7. Conclusion

In the era of information technology, people's demand for information literacy is getting higher and higher, and information literacy is the foundation for citizens to stand in the information society, college students as an important part of higher education, to strengthen the cultivation and improvement of their information literacy is the inevitable requirement of higher education.

The development of the information literacy assessment platform in this paper provides a good platform for college students, accurately assesses the information literacy of college students, helps learners to find their own deficiencies, meets the needs of learners so as to effectively promote the enhancement of their information literacy ability, enriches the research on the path of college students’ information literacy enhancement, broadens the academic field and improves the effectiveness of human education.

Acknowledgments

This work was supported by the Research and Innovation Fund of Yunnan Normal University (Grant No. YJSJJ23-B169) for financial support.

References