A Study on the Educational Model of Information Literacy in China

Xue PAN 1,* and Ya CHEN 2

1,2 Nanjing University, China

*Corresponding author

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Abstract: [Purpose/Significance] Based on an analysis of the evaluation index system of information literacy education in Chinese universities, this paper aims to provide theoretical Reference for Information literacy Education [Method/Process] This paper analyzes the status quo of domestic and foreign information literacy education and the current situation of research [Result/Conclusion] This paper constructs the evaluation index system of information literacy education in colleges and universities from five aspects: Educational subject, educational object, educational form, educational content and educational effect.

Introduction

Affected by the arrival of big data era, how to effectively and efficiently collect, arrange, analyze and use data appears to be particularly important. Good information literacy is the basis of smooth expansion of learning and research activities, which is the safeguard of prosperous follow-up process. Against this background, in order to cultivate professionals, colleges and universities in all aspects have valued information literacy education. All colleges and universities carry out practice of information literacy education through colorful forms, actually improving students’ information literacy capability. Through starting from the conclusion and analyses specific activities of information literacy education at home and abroad in a large number of literatures, the model, which is suitable for information literacy education in China, attempts to be established. Construction of reasonable and scientific information literacy educational model is beneficial for colleges and universities to improve the existing educational pattern, further promoting students’ information literacy.

Information Literacy Education and Information Literacy Education

Currently, there are still certain disputes about demarcation between connotation and extension of information literacy concept. Some scholars maintain that information literacy is a part of "information literacy" concept. For instance, as mentioned in What Information Literacy Education Can Bring to Information literacy Education, "information is the basic ability of scientific research; information literacy, as one of the key element of information literacy, also becomes a necessary new skill of scientific research". However, more scholars believe that information literacy is the product of new development of the era as well as the extension based on information literacy; information literacy is different from information literacy. Information Literacy, Statistical Literacy and Information literacy discusses the concept of information literacy, statistical literacy and information literacy as well as the relations between them. It points that information literacy indicates a kind of capability to obtain, operate and conclude data from different data sources in order to satisfy the needs of scientific researches and draw conclusions. On this basis, this paper claims that information literacy education cannot be equal to information literacy education. The extension of information literacy education can be broader. There are certain gaps between emphasis points. Information literacy education attaches great importance to the training the capability of retrieval evaluation and information utilization, while information literacy education emphasizes individual competence. Information literacy not only includes the requirements of information literacy, but also values the cultivation of information literacy consciousness and data
ethics. This paper also takes the investigation of information literacy education into account, when inspecting information literacy education, in that numerous information literacy education is formed and further developed on the practice basis of information education. Understanding the situation of information literacy education can help understand information literacy education better, and also provide a more solid foundation for the establishment of education evaluation system for the subsequent information literacy.

**Research on Information Literacy Education and Analysis on Practice Situation**

Information literacy serves as one of the hot research hotspots of recent years. Some high-quality researched achievements and practical achievements occur in relevant fields at home and abroad. This paper teases domestic and foreign practice situation through document analysis method and network survey method. Taking Chinese Journal Full-text Database as the data sources, this paper adopts cite space to conduct correlation analysis of the research results of information literacy in recent five years, making inductions from the aspects of current situation and theoretical research situation, providing a realistic foundation for the construction of education evaluation system for the following pages.

**Analysis on Information Literacy Education Practice**

Colleges and universities are the main positions for information literacy education. Education departments of colleges and universities as well as university libraries carry out a large number of information literacy education practice activities independently or through various kinds of cooperation. Some countries like America and England have accumulated considerable experience in information literacy education. (1) Diversification of education forms: Library staffs in University of Minnesota create an online asynchronous training course system to train graduate students’ data capabilities. Through the combination of offline practical classroom teaching and online learning, graduate students with heavy academic tasks can also accommodate this education form of information literacy well. Many colleges and universities adopt embedded information literacy education model, introducing information literacy education into daily teaching. For example, School of Nuclear Engineering in Purdue University attempts to invite library science personnel to teach relevant professional data acquisition skills. (2) Diversification of education subjects: teachers and subject librarians of “Science and Major Social Events” course in Purdue University pull together to strive for the improvement of students’ information literacy. (3) Information literacy education is targeted: current information literacy education practice attaches great importance to individual variation. For instance, an Information literacy Advisory Team (DLAT) was founded in Virginia Tech University’s Library in 2013. Relevant personnel who work on data management, reference service and discipline service with interdisciplinary and cross-domain background constitute this team. The Composition of information literacy reference service team can persistently meet the needs of teachers, students and other researchers, providing targeted and dynamic information literacy education.

Colleges and universities in China also conduct beneficial explorations in information literacy education. For instance, Tsinghua University Library carries out the training activity of “primary SPSS statistical analysis of questionnaire survey” in view of students and researchers. In the research process, research data can be obtained through questionnaire survey. Lecture introduction uses SPSS to perform primary statistical analysis method and operation of data generation, statistical analyses of multiple questions, statistical analysis of Richter scale and diagram production, so as to improve students’ professional information literacy. Dalian University offers management data analysis course. Some contents teach students to use software like excel to process data, which improves students’ data management and analysis capabilities to a certain extent. However, compared with relevant foreign information literacy education practice activities, information literacy education in China still has great defectiveness. For one thing, the forms are relatively single; most of them are lecture models. The idea of flipped classroom and MOOC form have been introduced into foreign information literacy education. For another, overall understanding
of information literacy education is still in want. Although some current activities or courses really improve students’ information literacy in some respects, relevant educational practical activities cannot be carried out with project modes of certain scales from a macroscopic perspective due to the extremely insufficient overall recognition on the importance of information literacy education.

Analysis on Research Situation of Information Literacy Education

This paper adopts Chinese Journal Full-text Database as the information sources, when analyzing the research achievements in fields relevant to domestic information literacy education. “Information literacy” and “education” are the index words. The search time is June 16th, 2017. This paper mainly investigates recent results. In this connection, the time should be limited between 2013 and 2017. The research results are 69 literatures in total. This paper adopts cite space software to carry out co-word analysis and obtain co-occurrence network of subject terms, as shown in Figure 1. In the clustering analysis of knowledge network based on the construction of subject terms, Mean Silhouette equals to 0.739 (the value is within the interval of 0~1; higher value indicates higher similarity within same cluster). This result mirrors a significant feature of information literacy education research: the involved aspects of research topic are relatively centralized.

As can be seen in Figure 1, discussion on information literacy education means the extension of information literacy education to a certain degree, which also accords with the logic relationship between information literacy and information literacy concept. Relevant frequently-used words mainly appear in the following aspects: (1) subjects of information literacy education (library, university library and educators); (2) Era background of information literacy education (big data era, big data and Internet plus); (3) ways of information literacy education (MOOC and online education); (4) contents of information literacy education (information retrieval and data management). After summarization and analysis, it can be found that relevant researches of information literacy education in China are relatively comprehensive. Comparatively deep researches are conducted in the entire process from education design phase to later implementation. The main positions of information literacy education are university libraries. In view of this current situation, domestic researches mainly see big things through small ones through selecting typical cases and summarize the typical models of information literacy education, in order to provide certain reference significance for the launch of information literacy education in China. For example, “Research on Science Information literacy Education of Foreign University Library” summarizes information literacy education of foreign university information literacy education in to three models on the basis of expounding the contents and features of science information literacy: (1) using Libguides to establish science data management resource navigation; (2) general education of information literacy; (3) subject information literacy education. Numerous articles combine the background of era development to explore the significance of information literacy education based on practical and theoretical analyses. Yet, with regard to researches on evaluation, there are only articles about personal information literacy ability evaluation currently. Researches
on evaluating information literacy education are not available at present. In effect, favorable and sound evaluation systems can guarantee education better, thus ensuring the improvement of information literacy ability.

Specific Construction of Information Literacy Education Evaluation Indicator System

Relevant Basis of Evaluation Indicator Construction

**Theoretical Foundations.** Lasswell Formula is also known as “5W” model. Lasswell, an American scholar, proposed five basic elements which constitutes communication process in *The Structure and Function of Communication in Society*. The five basic elements are the first letters of five interrogative pronouns in English respectively, namely Who Says What in Which Channel to Whom with What Effect. This paper improves 5W model and applies it into the evaluation of information literacy education according to the four major influence factors of information literacy education obtained from the analyses in the preceding part of the paper. Who stands for education subject? Subjects’ qualifications and competencies of information literacy education should be assessed from all aspects. The second W refers to What, representing the contents of information literacy education. The third W is Which, indicating the methods of information literacy education. Whom refers to objects of information literacy education, namely college students. The fifth W means the effect of information literacy education. The fundamental objective of information literacy education lies in improving students’ information literacy, enabling students to effectively use data to make decisions, implement scientific research activities and fulfill schoolwork assignments on the basis of obtaining data in such aspects as work and study. In this connection, social feedback of university students’ information literacy ability must be gave timely. Students should adjust the existing information literacy education after accepting information literacy education, in order to combine students’ humanized characteristics better and accommodate social demands for students’ data information capabilities dynamically. Improved information literacy education 5 W model is adopted. This paper attempts to construct specific university information literacy education evaluation system.

**Practical Basis.** In order to construct overall and scientific information literacy education evaluation system, the influence factors which exert impacts on information literacy education should be fully analyzed. It should be regarded as the practical basis of constructing evaluation indicator; reasonable and systematic evaluation planning should be performed on this basis, representing the microscopic and macroscopic high congruence of this evaluation system.

Through combining the practical and theoretical researches on domestic and foreign information literacy education, it can be found that the main influence factors of information literacy education have the following aspects:

1. Subjects of information literacy education: university teachers and university libraries are mainly responsible for information literacy education. The purpose of information literacy education is to improve students’ information literacy, so as to enhance students’ adaptability under the background of big data era. Data executors’ capabilities and literacy exert fundamental impacts on the actual implementation of future information literacy education. If colleges and universities desire to improve information literacy education quality, a significant tong is to improve educators’ capabilities, including the original education knowledge level investigation and the training of data competency. In today’s information-based society, if relevant educators would like to provide relevant data service and guidance better, they must be familiar with the utilization of all data process software to a certain degree and master theoretical knowledge relevant to data collection and analysis, in order to provide theoretical and practical education supports. Besides, educators can carry out cross-border cooperation, offering information literacy education with interdisciplinary features to students.

2. Contents of information literacy education: information literacy mainly include data capability, data understanding ability and capability of transforming data into knowledge for utilization and decision-making. To fully cultivate students’ information literacy, education contents
should be integrated. Along with the continuous differentiation and integration, all disciplines are increasingly interinfiltrated. On one hand, the specific forms of data capability in different disciplines are different; on the other, the intersection and combination of data ability and all subjects is also a new development orientation. Combining previous analyses, the humanistic information literacy competency mainly include the possession of data consciousness, data acquisition and management, data processing and analysis abilities for data utilization and decision-making. After the main contents of information literacy are discussed, corresponding range of information literacy education should also cover these aspects.

(3) Forms of information literacy education: in information literacy education, education forms also exert education effects to a large extent. Conceivably, it is difficult for students to arouse interests in information literacy education course continuity of boring forms. At the moment, the main education forms of information literacy education of embedded routine teaching forms, special lectures and practice projects of information literacy. The information literacy education of embedded routine teaching forms can be combined with students’ professional background, providing specific and pointed help for students’ day-to-day study and scientific researches, but this kind of ways is relatively monotonous. Thematic lecture is a type of form with high adoption rate at present. Each lecture has a special theme, which can invite experts in different fields to give lectures. Nevertheless, the internal connection between lectures is exceedingly insufficient, which goes against students’ systematic cultivation of information literacy. At last, the practice project of information literacy theme can be said to be a kind of education form which can arouse students’ learning interest mostly. Through a special form, students get involved in it. They can perfect their information literacy through certain practice, while studying theories. The three kinds of forms have their own advantages and disadvantages. However, in the specific practice process, they can be combined. The form of flipped classroom can be added into daily teaching with online and offline combination. The practical activities of information literacy theme and coupled routine teaching of lectures should be coordinated and united with each other.

(4) Objects of information literacy education: a significant aspect which affects information literacy education is the object of information literacy education. Through the analysis of students’ personal features and combination of collective characteristics, certain division can be carried out and information literacy education can be provided specifically.

Conclusion and Prospect

On the basis of analyzing the current situation, this evaluation system utilizes improved “5W” models for evaluation methodologies. The comprehensiveness and dynamics of information literacy education as well as objective evaluation system are considered in the evaluation process, provides information references for universities and relevant education management departments to make decisions.

When specifically evaluating information literacy education, it can refer to the information literacy education model in this paper and the evaluation system in this paper, collect relevant data for evaluation and obtain the evaluation results. It can also consult all weight results in this paper, challenging information literacy education. Within limited financial resources, material resources and time, the information literacy education which links work at selected spots with that in entire areas and combines depth and breadth can be carried out.

Concerning the quality improvement of information literacy education in China, there are inspirations from the following aspects: (1) the overall understanding of information literacy education should be improved. At present, the unified information literacy education program at a university or college level is insufficient in China; only scattered information literacy activities carry out, lacking integrity and systematicness. This paper also draws support from the evaluation system of information literacy education, in order to provide certain references for the construction of information literacy education system in universities and colleges. Information literacy education needs macro and micro combination, practically improving and strengthening students’ data capabilities. (2) Active information literacy education should be introduced into evaluation
mechanism. In the practical process of information literacy education, evaluation mechanism should be introduced, promoting construction with evaluation and promoting the formation of virtuous competitive relations. Timely and dynamic evaluation is conducive to students’ self-reflection in learning, teachers’ revisions of educational practices as well as universities and colleges’ adjustments of information literacy education strategies.

Reference

