Research on Information Literacy Education in Universities in the "Internet +" Era

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Keywords: Internet+, Information Literacy Education, Framework for Information Literacy.

Abstract. In the "Internet +" era, the wide application of various new technologies and the change of information environment have put forward new requirements for information literacy education. The article interprets the definition and connotation of "Internet +" and information literacy, and on this basis analyzes the shortcomings of information literacy education in universities and the impact of "Internet +" on information literacy education. Proposes the strategy of information literacy education in universities based on "Internet +".

Introduction

With the increasing development and application of information technology and Internet technology, the arrival of big data era, people use the Internet to make full use of big data in order to improve their quality of life and work efficiency. In November 2012, Mr. Yu Yang, the chairman of Analysys International, proposed the concept of "Internet +" for the first time. In March 2015, Ma Huateng, chairman of Tencent, put forward the proposal of "Internet +" to promote the development of Chinese economic and social innovation, again referring to the "Internet +". March 5, 2015, Premier Li Keqiang put forward "Internet +" Action Plan in "2015 Government Work Report". So far, the strategy of "Internet +" has risen to a national strategy that has given rise to special social concerns and has had a huge impact on all sectors of society. In the "Internet +" era, the traditional information literacy education model has become inadequate. The traditional information literacy education can not keep up with the readers' information needs and social development, it faces many difficulties.[1] Therefore, it is an important task for every information literacy educator to adapt to the development of the times, change ideas, innovate educational content, form and mode, and make the information literacy education glow with new vitality.

Overview of the"Internet +" and Information Literacy Education in Universities

Internet +

On July 4, 2015, the State Council issued the Guiding Opinion of the State Council on Actively Promoting “Internet +” Action. It mentioned that “Internet +” refers to the deep integration of Internet innovation with various fields of economy and society to promote technological progress, efficiency improvement and organizational change, enhance the innovation and productivity of the real economy and create a broader new form of economic and social development that based on the Internet as an infrastructure and innovation element. Ma Hua Teng thinks that the "Internet +" refers to the creation of a new ecology in the new field by combining the Internet with all walks of life including traditional industries, using the Internet platform and information and communication technology. "Internet +" is regarded as a new form of Internet development under Innovation 2.0 and a new form of economic and social development promoted by Knowledge-based Society Innovation 2.0. In generally speaking, "Internet +" is "Internet plus all traditional industries", but this is not a simple combination. Instead, it uses information and communication technology as well
as Internet platforms to integrate the Internet with traditional industries deeply and create new development ecology. Achieve the effect of 1+1>2.

**Information Literacy**

With the increasingly abundant information resources, the wide application of advanced technologies such as big data, cloud computing and mobile Internet have changed the way and way of solving human problems. Lifelong learning has become an important capability for individuals to keep up with the development of the times. The promotion of lifelong learning ability requires active inquiry spirit, more importantly, has a solid information literacy. Paul G. Zurkowski coined the term "Information Literacy" in 1974 when he was president of the Information Industry Association. He wrote that training in application of information resources led people to learn techniques and skills for utilizing the wide range of information tools and primary sources in applying information solutions to their problems. In 1989 the American Library Association (ALA) defined "information literacy" in its final report. It said: “To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.”[2] In 2000 Association of College and Research Libraries (ACRL) published its “Information Literacy Competency Standards for Higher Education”. Information literacy was defined as a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information".[3] Information literacy can be applied to various subjects, learning environments and educational levels. It allows learners to master the content, expand the scope of the research, and have more initiative and autonomy. An expanded definition of information literacy was given in Framework for Information Literacy in Higher Education, which was filed by the ACRL Board on February 2, 2015. Information literacy is defined as “the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning”.[4]

**The Deficiency of Information Literacy Education in Chinese Universities at Present**

An important content of higher education is to cultivate and improve university students' information literacy. University libraries play a very important role in information literacy education. At present, Chinese university libraries mainly use lectures on information retrieval and library resources, such as freshmen entry education, reference consultation, regular or irregular special database lectures, online library teaching, etc. These models play a certain role in improving university students' level of information literacy and lifelong learning ability. However, in this "universal network" Internet era, the existing mode gradually reveals a lot of problems: (1) Relative to the huge user group of teachers and students, information retrieval and use of library resources as the main ways for traditional information literacy education have a small proportion of audiences. (2) Students lack initiative. The freshmen do not pay attention to the library entry education, and the attendance rate of the information retrieval course is low, etc. (3) The content of information literacy education is limited to the use of library resources. (4) Education for most people, did not take into account the individual needs of students is not conducive to inspire students’ enthusiasm for learning. (5) The existing online teaching mode is basically the network of traditional classroom teaching. It has the function of online learning, submitting homework and testing, and has certain interactivity. However, it is difficult to attract students to learn actively and systematically because of their separated teaching framework and restrictions on students’ learning environment. [5](6) The overall teaching quality of library teaching staff needs to be improved. They are lack of communication with specialized teachers and students.

**The Influence of "Internet +" on Information Literacy Education in Universities**

"Internet +" brings the educational environment into the information age. It is changing the traditional paradigm of education: cooperation, personalization, mobility, digitization and other learning methods become normal teaching. [6] It also has a huge impact on information literacy
education. The Framework of Information Literacy in Higher Education explains the content of information literacy education in universities newly and puts forward new requirements for information literacy education in universities.

First, the content of information literacy education is more extensive. An information literate person in modern society should have the ability to use information tools, acquire information, process information, generate information, create information, benefit from information, information collaboration and information immunization. Therefore, while improving students’ information literacy, educators must also pay attention to improving the abilities of "media literacy", "computer literacy" and "digital literacy" which closely related to information literacy so as to improve students’ adaptation to information age.

Second, information literacy education places more emphasis on evaluating the application of information and the ability to create information. In the era of "Internet +", information resources are mixed and people are easily interfered and eroded by spam and harmful information. People need to have the ability of information identification, evaluation and analysis, so as to obtain value-added information that is authentic and applicable from the vast ocean of information. Information society is an innovative society. It is of great significance to create information for the development of information society.

Finally, information literacy education is diversified."Internet +" has brought the education environment into the information age. The university students’ information behavior habits have also changed. Information access and information exchange methods are networked, mobile and virtualized. They are highly dependent on the Internet and search engines and prefer to use electronic resources. Therefore, the university library is not only through the classroom, special knowledge lectures and other forms of information literacy education, but also the use of various data mining and information management technology to carry out a variety of online information literacy education services. [7]

Strategy of Information Literacy Education in Universities Based on "Internet +"

With the progress of Internet technology, university students are no longer passive to accept information, but use various multimedia tools to obtain resources actively, and even become the producer and publisher of information. [8] Traditional information retrieval courses can not adapt to the current ubiquitous and open information environment. How to change the information literacy education and adapt to the "Internet +" era is an important issue that needs to be discussed in depth by the education departments and educators.

Expand Education Approaches

In 2015, the State Council clearly put forward the requirement of strengthening intellectual construction in its "Internet +" plan of action. And gave guidance from four aspects: strengthening training on application ability, accelerating the training of compound talents, encouraging joint training and utilization of global intellectual resources. The information literacy education in universities in the age of "Internet +" can learn from the above opinions, explore new ideas and integrate the characteristics of the new era into the traditional information literacy education. The university libraries can change the traditional teaching mode such as lectures and information retrieval courses, use existing resources and infrastructure, and expand the education way with intellectual construction.

Expand, Deepen and Professional Teaching Content

The Higher Information Literacy Education Framework extends the meaning of information literacy to include cross-media literacy, media literacy and data literacy. It puts forward higher requirements on the ability to use information to solve problems. In view of this, the information literacy education is constantly increasing in how to use multiple media to obtain information, data retrieval and utilization, and so on. In response to the needs of university students, educators should expand the teaching content and deepen the use of information retrieval to solve the problem.
According to the specialities carry out information literacy education with different contents, pay attention to the combination of information literacy education and course objectives, carry out embedded information literacy education. It is helpful to improve students' interest in learning and improve teaching effectiveness.

**Innovative Teaching Forms**

In the process of carrying out information literacy education, university libraries need to pay more attention to students' independent thinking and problem solving ability, establish a "student-centered" teaching philosophy, and adopt a multi-level and diversified teaching approach. The main target of information literacy education in universities is the students in school. The teaching process can be graded and set according to the different abilities and the needs of students, such as their grade, specialties and so on. The content of information literacy education for undergraduates is universal education. The information literacy education for graduates should focus on cultivating the comprehensive abilities of using information to create new knowledge, participating in learning groups, participating in academic activities and academic exchanges. Help them to actively develop their own information evaluation and utilization, information ethics, professional resources understanding and access, writing norms and other information literacy ability. In short, the information literacy education should be combined with extracurricular activities such as students' specialized courses learning, innovation and entrepreneurship, make full use of various advanced technical means, adopt various forms of mixed teaching. Change from teacher indoctrination, student acceptance learning mode to teacher and student coinnovative of learning style.

**Improve Teachers' Self Literacy**

The openness of "Internet +" made the contents and forms of teaching in universities spread multi-dimensionally, and realized the "Internet + Education" model in the new age. As the main organizer and implementer of teaching activities, information literacy educators need to adopt modern information and communication technologies such as mobile Internet, cloud computing, big data and Internet of things to transform their original education methods and promote them to a higher level automation, intelligent, personalized direction. This put forward higher requirements on them and require them to continuously study and update their own knowledge structure, enhance their awareness of innovation and enhance their own literacy. The information literacy educators should not only need to learn the knowledge of library, information, education and psychology, but also have the modern information technology, such as cloud information, cloud computing, big data and data mining technology, so as to improve the ability of information teaching.

Universities should regularly provide relevant teachers opportunities to improve their qualities through professional training, academic exchanges and special training. Teachers themselves should make full use of network platforms and other channels to enhance learning. It is also necessary to strengthen cross-disciplinary cooperation between professional teachers and librarians and to participate in the teaching design according to their respective professional backgrounds so as to realize the integration of teaching administration departments, libraries, information literacy teachers and relevant professional teachers. [9]

**Conclusion**

Nowadays, information literacy has become one of the basic skills required by the society. Especially under the influence of "Internet +", libraries constantly change the traditional service mode. Information literacy education also ushers in new opportunities and challenges. In the era of "Internet +", the social demands for information literacy are constantly increasing. University students are the hope of the future, education departments, universities and libraries should explore and practice the implementation plan of information literacy education in Chinese universities, establish more suitable information literacy education model, actively promote information literacy education, constantly improve the teaching effectiveness and improve the quality of education.
References


