The Current Situation of Foreign Language Teachers' Information Literacy in Colleges and Universities in the "Internet Plus" Era and Its Countermeasures for Improvement

Based on the Investigation in Heilongjiang Province*

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Abstract—**"Internet plus" has spawned the transformation of educational informationization, and the information literacy of foreign language teachers in colleges and universities has become one of the essential elements in carrying out information education. The survey of information literacy finds that foreign language teachers in colleges and universities highly recognize the role of information technology in teaching and scientific research, but their information abilities are below average, and their information research abilities are poor; the age difference of information awareness is obvious, and the gender, teaching age and overseas experience of information abilities are significantly different; male teachers' overall information abilities are higher than that of female teachers. Schools need to strengthen policy guidance at the management level, digital intelligent campus construction and teacher training; qualified teachers need to raise awareness, form Internet thinking, and join the learning community in order to promote teachers' information literacy.**

Keywords—foreign language teachers; information literacy; current situation; countermeasures

I. INTRODUCTION

The universal application of the Internet, especially the development of big data, cloud computing and mobile interconnection technology, is profoundly changing the face of education, which promotes the development of education towards informatization, networking and intelligence. In the process of "Internet plus" and education continuous integration, foreign language education is undergoing unprecedented changes. This trend not only brings about innovation in educational technology, but also impacts on foreign language learning, teaching and organizational mode, which challenges foreign language educators' information literacy. Information literacy generally refers to the ability to reasonably and legally use various information tools to determine, acquire, evaluate, apply, integrate and create information, and use information resources to solve problems, to critically think, to make decisions and to innovate and other high-level thinking activities. [1] CAUL (2008) believes that information literacy is an important prerequisite and component of modern citizens' independent and lifelong learning. If teachers want to cultivate students to be a person with good information literacy, they themselves should have good information literacy [2]. Foreign language teachers from colleges and universities should keep pace with the times: constantly improve awareness and ability of using information technology. At the same time, they should integrate and rationally use information technology elements in the design and implementation of classroom teaching.

II. CONNOTATION OF INFORMATION LITERACY

The concept of "information literacy" was first proposed by Paul Zurkowski in 1974 [3]. At present, it is generally accepted that "information literacy" refers to the ability of people to comprehensively realize when they need information and to gain, evaluate and effectively use it [4]. UNESCO (2008) pointed out that the elements of information literacy include: understanding information needs; acquiring and evaluating information quality; storing and extracting information; efficiently and morally using information; applying information to create and disseminate knowledge, and elucidating the standards of information literacy in education. [5] Information literacy of colleges and universities teachers can be summarized as information consciousness, information ability, and information knowledge and information morality through literature research [6]. Information knowledge and information ability cross each other and information morality level has become a basic consensus. Therefore, this paper focuses on the information awareness and information ability of foreign language teachers in colleges and universities.

Information consciousness is the sum of people's cognition, concepts and demands in information activities. [7] Consciousness determines action. Only with higher level of information awareness can colleges and universities foreign language teachers make full use of information technology in foreign language scientific research, change their teaching concepts and conform to the trend of college English teaching reform. Information competence is the core of information literacy, which relates to how teachers apply information technology. Qin Meijuan and He Guangkeng (2009) refined the information ability of college English teachers into seven categories: information acquisition, information evaluation, information processing, information management, and information integration, communicate by using information technology and information technology research on the basis of summarizing the work of predecessor. Such classification method not only integrates the generality but also takes into account the characteristics of foreign language teaching and scientific research, which is easy to quantitatively examine. This paper also focuses on the seven kinds of information competence research of foreign language teachers in colleges and universities.

III. RESEARCH QUESTIONS AND METHODS

The study plans to reflect the current situation of information awareness and information ability of foreign language teachers in colleges and universities by investigating specific information behaviors, and to understand such differences as gender difference of information literacy of foreign language teachers in colleges and universities, which provides references for the improvement of information literacy of foreign language teachers and the promotion of foreign language teaching reform. The object of study are 254 foreign language teachers from 10 universities in Heilongjiang, including 53 male teachers and 201 female teachers; 59 undergraduates, 167 masters and 28 doctorates; 26 assistants, 152 lecturers, 56 associate professors and 20 full professors; 23 teachers with teaching age less than or equal to 5 years, 73 teachers with teaching age of 6-10 years, 77 teachers with teaching age of 11-15 years and 44 teachers with teaching age of 16-20 years. The research mainly uses questionnaire survey and online teacher interviews. The questionnaire is divided into three main contents. The basic information includes seven factors: gender, age, professional title, educational background, teaching age, school level and overseas experience; 10 items of information awareness; 62 items of information ability. The examination is carried out from two dimensions of use frequency and use ability, and the five-level system of very good, good, general, poor and very poor is adopted to test the use ability.

IV. CURRENT SITUATION OF INFORMATION LITERACY OF FOREIGN LANGUAGE TEACHERS IN COLLEGES AND UNIVERSITIES

A. Current Situation of Information Consciousness of Foreign Language Teachers in Colleges and Universities

Through the analysis of the information collected above, it is found that the information awareness of foreign language teachers in colleges and universities is strong. Most of the foreign language teachers in colleges and universities (87.5%) highly recognize the role of information and communication technology in foreign language teaching, and are keenly aware of the value of in-class and out-class information to foreign language teaching and scientific research (78.1%). Foreign language teachers can objectively view their own technological level. 68.8% of them think that their information technology level is general, and they can only basically meet or not meet the needs of foreign language teaching and scientific research (71.2%). The demand awareness of information technology is much higher. 87.5% of teachers think that they should improve their information technology level.

B. The Current Situation of Information Ability of English Teachers in Colleges and Universities

1) Information acquisition ability: Information acquisition ability includes information retrieval and download. Whether information can be acquired quickly, efficiently and accurately is an important indicator of information acquisition ability. The data show that 97.5% of teachers think that their search ability is very good, but their advanced search ability is low; the domestic teaching resources network such as Baidu Library is used more frequently, while the foreign similar websites are used less frequently; the utilization rate of online download tools such as Xunlei is much higher, but the utilization rate of non-networked resources acquisition tools such as scanning image recognition and picture tools is very low. To sum up, the information acquisition ability of foreign language teachers in colleges and universities is below the average level.

2) Information evaluation ability: Whether the acquired information meet the needs of foreign language teaching and scientific research needs, which is evaluated from five aspects: accuracy, authority, applicability, objectivity and modernity [8]. The data show that the vast majority of teachers think that their ability to evaluate information in these five aspects is medium or better, and most of them think that their evaluation ability is medium. It can be seen that the overall information evaluation ability of foreign language teachers in colleges and universities is above-average.

3) Information processing ability: Text, pictures, audio, video and other information obtained on the network are all non-contextual [9], which can become an ideal teaching material after processing. The analysis shows that the frequency of using text editing and translation software by foreign language teachers is very high, while the frequency of using audio, video and image software to edit, cut and format conversion of multimedia resources is very low. To sum up, the development of information processing ability of foreign language teachers in colleges and universities is not balanced, and the processing ability of different types of resources is quite different.

4) Information management ability: Information management ability is the ability to preserve and manage

information. The data show that the frequency of teachers using U-disk and others to storage or backup materials is very higher and have good ability to use them; the frequency and ability of using network collectors and public mailboxes to share or manage information are at a moderate level; teachers seldom use Baidu cloud and other new cloud storage tools; the frequency of establishing teaching and scientific research websites or databases is very low with poor ability.

5) Information integration ability: Information integration ability is the ability to display information effectively by using information technology. According to the data, 92.8% of foreign language teachers often or always use PPT with moderate use ability. Mind mapping plays an active role in improving structured writing, promoting critical reading and cultivating critical thinking. However, few foreign language teachers in colleges and universities use mind mapping, 81.6% of them have never used it with poor use ability. Foreign language teachers can often or effectively use information technology to improve the dimensions of foreign language classroom and students' information literacy in such link as teaching preparation, implementation and evaluation.

6) Information communication ability: Information communication ability is the ability to use information technology to exchange, communicate and collaborate with others across time and space. Data show that 75.2% of foreign language teachers often or always use QQ, Wechat, Weibo and other online communication tools to communicate with others, and they can also use such tools more skillfully. 61.3% of teachers use social networks to arrange homework, publish news or answer questions after class.

7) Information research ability: Foreign language teachers in colleges and universities should not only complete teaching tasks, but also undertake research tasks, which require teachers to have the ability to use information and communication technology for research. The data show that foreign language teachers in colleges and universities have poor ability to use information technology to conduct teaching and scientific research. The main sources of their access to teaching and research literature and materials are domestic network databases with medium use ability; they seldom use foreign network journals and databases with poor use ability; they hardly use corpus; foreign language teachers seldom use information technology to record teaching process and reflect the teaching; foreign language teachers seldom collect and analyze teaching and scientific research data through information technology; a small number of foreign language teachers sometimes or often use SPSS, Excel and other data analysis software, but the use ability is poor.

C. Difference Analysis

The results of questionnaires and interviews show that, firstly, in terms of information awareness, young teachers have received a more systematic information technology education during their study period, and they learn and grow up in the information society, with open-minded and strong information awareness. Secondly, in terms of information competence, the gender differences of information competence of foreign language teachers in colleges and universities are extremely significant. Male teachers' information competence is significantly higher than that of female teachers, which is mainly reflected in acquisition ability, evaluation ability, processing ability, management ability and research ability. Thirdly, the information ability of foreign language teachers in colleges and universities is different with their teaching age. Teachers of 16-25 years' teaching age are in the golden period of career development. At the same time, their pursuit of teaching and scientific research urges them to use more information technology, which forms the information ability that is more than the teachers of more than 26 years' teaching age. Fourthly, in terms of information research ability, the information ability of foreign language teachers with overseas learning experience is higher than that of teachers without overseas experience. Visiting abroad helps to enhance teachers' scientific research ability [9]. Fifthly, age has no significant effect on the overall information ability of English teachers, and it is not a yardstick to distinguish the level of information technology use. The time of contacting and using information technology is an important indicator [10]. Sixth, educational background, professional title and school level have no significant impact on the overall information ability. But the information research ability of teachers with doctoral degree is higher than that of teachers with bachelor's degree and master's degree, which is inseparable from the rigorous and systematic scientific research training that they received during their doctoral study. To sum up, the information literacy of foreign language teachers in colleges and universities is in a state of "awareness is enough, ability is inadequacy and difference is diverse".

V. WAYS TO IMPROVE INFORMATION LITERACY OF FOREIGN LANGUAGE TEACHERS IN COLLEGES AND UNIVERSITIES

There are many reasons for the generation of the current situation of information literacy of foreign language teachers in colleges and universities. Professional awareness, fundamental dynamic, personality, technical sensitivity, policy system, network construction, software and hardware configuration, etc. affect the development of teachers' information literacy to some extent. Therefore, it is necessary to take effective measures.

A. Continuouly Improving the Information Awareness of Foreign Language Teachers

Information awareness should not be confined to the recognition of the importance of information technology. More importantly, it is necessary to change teaching concepts, improve information sensitivity and enhance the initiative and consciousness of using information technology. Teachers should make a clear judgment on their information literacy level and set up the normalization idea of information technology-assisted language learning. Foreign language teachers in the information environment are not only the leaders of teaching activities, but also the designers of individualized teaching; they are not only the guides of information resources, but also the organizers of high-quality

teaching resources; they are not only the assistants of students' learning, but also the creators of autonomous learning situations and the trainers of students' autonomous learning ability, so as to realize the improvement of the dual goals of teachers' educational information literacy and effective teaching.

B. *Improving the Mechanism of Encouragement and Training*

Educational authorities at all levels should strengthen policy support and encouragement for the use of teachers' information technology, make the training of foreign language teachers' information literacy in colleges and universities is institutionalization standardization and humanization, and incorporate teachers' information literacy into the routine assessment in order to form a good learning atmosphere that encourages, promotes and competes each other, thus promoting the improvement of teachers' information literacy. As for colleges and universities at all levels, especially general local colleges and universities should increase fund investment, strengthen the construction of computer network in school, update the configuration of software and hardware, and provide external basis for teachers' information technology application. In addition, it should promote the networking, individualization, pertinence and continuity of teachers' information literacy training. Individual differences in information literacy, such as gender, age and teaching age, are quite large, so the training plan should be as meticulous as possible, at the same time, training should be conducted in batches and in small scale; emphasis should be placed on introspective training to cultivate the autonomous awareness of the development of information literacy of foreign language teachers in colleges and universities, and promote teachers' spontaneous research and study behavior; give the trainees real experience opportunities in training, such as letting teachers learn how to develop and manage by themselves foreign language learning platform, how to carry out on-line network to assist students in learning and evaluate of students' self-learning effect, etc. The theory is promoted through practice.

C. *Constructing a Community of Teachers' Independent Learning and Cooperative Research*

Constructing a community of autonomous learning and collaborative research for university foreign language teachers can ensure that teachers can get real-time assistance, resource sharing, interaction and collaboration and other a series of guarantees in the process of learning and exploration. It emphasizes that the power of groups should be used in the learning community to stimulate teachers' autonomous awareness and ability of the development of information literacy. In the construction of the network community, it should fully consider such factors as teachers' existing knowledge structure, discipline background information literacy, learning style, teaching status, research direction and learning needs, so as to form different kinds of communities that is suitable for various groups to meet the development demands of teachers' information ability and scientific research literacy of different types and levels [11]. Diversified network resources and open and shared resource environment, necessary technical support, lively and interesting activity

design, extensive and in-depth communication and cooperation among members of learning community, the launch of timely and systematic reflective activities on learning goals, learning tasks, learning methods and learning outcomes are all effective ways to enhance teachers' learning motivation in the network learning community, thus achieving the goal of effectively improving the literacy of foreign language teachers in colleges and universities.

D. *Correct Treatment of the Dialectical Relationship Between Information Technology and Classroom Teaching*

For foreign language teachers in colleges and universities, one of the important manifestations of information literacy ability is information-based teaching ability. Information-based foreign language teaching is important, but at the same time we should realize that information technology is only a means of assistant teaching, and it is not a purpose. Therefore, in foreign language teaching activities, we should not excessively use information technology, not to use information technology for the purpose of "showing" information technology. At the same time, we should reasonable view "the teaching effect after the application of technology". Information-based teaching is not suitable for the whole process of foreign language teaching. At present, it is still compatible with classroom teaching, paying equal attention to and complementing with each other. Some contents and links that are not suitable to use the information-based teaching, such as oral conversation and other language practical output, because of the logicality, situationality and communicative characteristics of language, teaching activities cannot be separated from the guidance of teachers and the interaction between teachers and students. Therefore, teachers should adopt appropriate teaching methods according to different course contents and teaching requirements, and give full play to their respective advantages in order to get the best teaching effect.

VI. CONCLUSION

The theory and practice of "Internet plus education" in the field of foreign language disciplines has been widely developed. Excellent information literacy plays an important role in improving the information teaching ability of foreign language teachers, realizing the integration of information technology and foreign language courses, and promoting their professional development. To improve the information literacy of foreign language teachers is a long-term and arduous task, which can only be accomplished step by step through the joint efforts of subjective and objective.

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