Information Literacy as a Factor of Developing Teaching Competency in Foreign Language Teachers in the People`s Republic of China

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ABSTRACT

The problem of developing information literacy in modern society is urgent because the ability to use information resources is one of the ways to carry out effective professional activity. The aim of our study is to analyse the development of information literacy of foreign language teachers in the PRC. The following research methods have been used for this purpose: comparative pedagogical analysis and empirical data analysis. The obtained survey results were processed using qualimetric techniques. The results of the survey allowed determining a need to develop information literacy in Chinese foreign language teachers. For deeper analysis, observation of teachers was conducted during classes, which allowed determining areas of work with them on understanding the component of pedagogical competence as an individual professional element and the value attitude towards information resources. The main conclusions of the study provide for identification of the ways to develop information literacy in Chinese foreign language teachers. At the same time, possibilities of using modern interactive methods for information literacy in Chinese foreign language teachers were identified. Promising areas of further research may be the study of the use of interactive methods in combination with collaborative technologies to develop information literacy in Chinese foreign language teachers.

Keywords: Information Literacy, Chinese Teachers, Foreign Languages, Foreign Language Teachers.

INTRODUCTION

Today's society, and especially the social group of extremely active people called millennials must solve many problems associated with the modern information space (Kolle, 2017; Shannon, Reill & Bates, 2019). This space is characterized by huge volumes of information, and therefore the task of people in the modern world is not to memorize information, but to be able to navigate and process it. When it comes to the processing procedures, we can confidently speak about the importance of the level of person's critical thinking (Smith et al., 2013). Everyone should be able to make judgments about the content of information, choose arguments for own judgements, conduct a conversation and even a civilized discussion (Walter & Shinew, 2003). Modern science attributes a set of the above features to the so-called information literacy of an individual.

Given the two important factors of society development — education and technology, where education is the priority — we decided in favour of the problem of information literacy in education (Ladbrook & Probert, 2011). If we analyse the features of public administration in countries with a high level of development, particular programs are focused on the content of the education sector (European Commission, 2020; Probert, 2008, 2009). The ambitions of the state can be determined by analysing the quality of education it provides. For example, improving the universities so that students from all over the globe choose to enter them (United Kingdom); ambitions of the best education in the world (USA); the decision to simply focus the potential of the state on memorizing information (EIT (external independent testing) in Ukraine or USE (unified state exam) in Russia); the use of educational potential for society development (South Korea); perception of education as a tool for propaganda (North Korea), etc.

The countries of the Pacific region deserve special attention: China, South Korea, Japan, Singapore (Korobili, Malliari, Daniilidou & Christodoulou, 2011). Over the past 70 years, vast majority of these countries has shown incredible indicators of the economy, education and science development (Earp, 2009). The People's Republic of China (the PRC) created a "world factory" being among the first ones to initiate reforms in the field of education and science. With the support of the public sector in the first stage of education development, it was decided to provide internships for Chinese educators in Europe and the United States, with the guarantee of their further returning to work in their native cities. The following important step taken by the Chinese government was the acquisition of world-renowned scientific periodicals with publications in English, and later in Chinese.

The given minimal description of the strong support for education on the part of the PRC leaders testifies to the state approach in this area. Given the globalization trends of the modern world, people in China are actively studying the culture, psychology, mentality, history and languages of many nations and peoples. English has always been the priority among them (Fang &Chen, 2018). For China's so-called "domestic consumers", English has been given the status of a language contributing to a successful career, which means social mobility in a densely populated country (Zheng & Adamson, 2003). Young Chinese citizens start learning English since their 3rd grade of primary school, as it is the most popular foreign language in China (Chen & Wang, 2016).

According to the Chinese government, knowledge of English should contribute to the positive image of the country in the world community. Until 2016, native speakers, foreigners, and Chinese teachers could teach foreign languages in China. It should be noted that English level of common Chinese citizens is not very high, but it can be explained by the fact that Chinese language belongs to a special language group, that has nothing in common with English from the point of phonetics, grammar and vocabulary (Qin & He, 2009). This condition creates some difficulties for the Chinese citizens in learning a foreign language. Therefore, according to the law introduced in 2016, English can only be taught by native speakers or Chinese teachers.

As the giant financial, industrial and research companies are mostly based in China, the need to learn the international language is becoming more and more urgent. Thus, foreign languages, particularly English, are taught daily in common Chinese schools. The higher education system in China is a rationally established system of full-cycle education with its own traditions, requirements and rules. Foreign languages in higher educational institutions in China are mostly taught by Chinese teachers, and this requirement is also formulated by the country's top leaders. According to various rankings, Chinese higher educational institutions are among the best in the world, and therefore university principals require their research and teaching staff to have a high level of professionalism, experience and competence (Ministry of Education of the People's Republic of China, 2018).

Given the level of education in Chinese universities, the number of foreign students (estimated as at least 300 thousand), as well as the provision of information technology equipment, we can conclude about China's huge investment in higher education, which is a prerequisite for high demands on research and teaching staff (Li. 2015).

In our article, we rely on the results of research by such scholars as Mundy, Kupczynski and Kee (2012), Probert (2008, 2009), Henkel (2015) etc. It was these scholars who emphasized the importance of developing critical thinking as an individual's ability to process the information flows. This is one of the aspects of information literacy development (Morales Campos, 2006). Chinese teachers have been also experiencing changes in the educational environment and realizing the improvement in their social status. Students can find information on any topic using online resources, but the teacher's purpose is to share their personal experience (Alba & Trani, 2018).

The works of Hu and Hu (2020) who studied the theoretical aspects of informatisation of foreign language education for the last 70 years, were also used in the article research. Wang (2018) analysed the level of information literacy of Chinese foreign language teachers in Guangzhou. Yang (2018) studied the problem of application of information technologies by Chinese foreign language teachers. Pan (2020) identified the ways to develop information literacy; the models for training English teachers in some provinces of China were proposed by Siri (2017); and the relationship between foreign language teaching and current events in the world was identified by Li and Chen (2016).

Thus, the scientific literature provides a lot of research on the problems of information literacy of teachers. However, the main aim of our study is to analyse the development of information literacy of foreign language teachers in the PRC.

Our research objectives have been formulated as follows:
- analyse the literature related to the problem of teachers' information literacy;
- determine the level of development of information literacy among foreign language teachers in China;
- identify acceptable forms and methods of the information literacy development.

MATERIALS AND METHODS

The process of researching the level of information literacy of foreign language teachers in China was carried out based on such higher education institutions in Jiaxing City, Zhejiang Province, as:
1. Jiaxing University.
2. Nanhu College.
3. Zhejiang College of Tongji University.
4. Jiaxing Vocational & Technical College.

These higher educational institutions were chosen because they represent a wide range of specialities. For example, Jiaxing University provides training in Economics, Administration, Technologies, Design, Linguistics with the research and teaching staff up to 1500 people. Colleges of the city have a smaller teaching staff, but strong facilities and resources for the educational process. Stratified sampling was used as a two-step method.

The general number of the staff (2,500 people) was first divided into subgroups (strata) — 5 strata, and then the elements were randomly selected from each stratum. The variables used to divide them into strata are called stratification variables. Elements belonging to one stratum were the most homogeneous, and those belonging to different strata — the most heterogeneous.

The study of the level of information literacy of foreign language teachers in China was conducted by means of organising a survey. The questionnaire contained 26 single choice questions. The sample size included 129 different research and teaching staff members (teaching assistants, lecturers, associate professors, professors). We used a random sampling, which provides equal opportunities for all participants in the experiment. The sample was formed in compliance with the requirements of the methodology of pedagogical research, namely: representativeness of the sample (compliance of the sample with the characteristics of the general number of respondents); taking into account the peculiarities of this study — the level of information literacy of foreign language teachers in China).

The study involved the following methods: survey for the research and teaching staff (a questionnaire with a total of 26 single choice questions, created in Google Forms and shared among the respondents via e-mail), interview with the research and teaching staff (basic topics related to the problem of information literacy), and observational method (observation of research and teaching staff during classes) in order to assess the level of information literacy of the Chinese foreign language teachers.

Qualimetric techniques and expert assessment methods were used to determine the level of information literacy, which allowed calculating a quantitative assessment for a qualitative indicator, such as the level of information literacy. All questions were divided into 6 groups. The experts determined the weight ratios according to the level of significance for each of the groups. Each question received an individual weight ratio. According to the answers, the average score for each question was calculated on a 5-point scale. For that purpose, each answer was assigned a corresponding score ("Strongly disagree" — 1 point, "Disagree" —2 points, "Not sure" — 3 points, "Agree" — 4 points, "Completely agree" — 5 points). The overall score for the level of information literacy was further calculated according to the principles of qualimetry, with the higher score indicating the higher level of information literacy.

RESULTS OF RESEARCH

Distribution of the respondents by social and individual characteristics has been made as follows (Table 1-6):

Table 1: Distribution of Respondents by Gender

Options	Subtotal	Percentage
Male	41	31.78%
Female	88	68.22%
Number of valid entries for this question	129	

Table 2: Educational Institution Where the Respondent Teaches

Options	Subtotal	Percentage
Jiaxing University	83	64.34%
Nanhu College	22	7.05%
Zhejiang College of Tongji University	7	5.43%
Jiaxing Vocational & Technical College	17	13.18%
Number of valid entries for this question	129	

Table 3: Level of Education and Scientific Degree of Respondents

Options	Subtotal	Percentage
Bachelor's degree	25	19.38%
Master's degree	89	68.99%
PhD	15	11.63%
Number of valid entries for this question	129	

Table 4: Teaching Position of Respondents

Options	Subtotal	Percentage
Teaching assistant	9	6.98%
Lecturer	97	75.19%
Associate Professor	19	14.73%
Professor	4	3.1%
other	0	0%
Number of valid entries for this question	129	

Table 5: Distribution of Respondents by Age

Options	Subtotal	Percentage
Under 30 years old	11	8.53%
31~40 years old	52	40.31%
41~50 years old	46	35.66%
Over 50 years old	20	15.5%
Number of valid entries for this question	129	

Table 6: Distribution of Respondents by Teaching Experience

Options	Subtotal	Percentage
Less than 3 years	15	11.63%
3~5 years	7	5.43%
6~10 years	13	10.08%
More than 10 years	94	72.87%
Number of valid entries for this question	129	

According to the expert assessments, these groups of questions received the following weight ratios (Table 7).

Table 7: Weight Ratios of Question Groups

Item No.	Question group	Numbers of questions from the questionnaire	Weight ratio
1	Level of knowledge of the issue	1–4	0.1
2	Level of knowledge of information technology	5–7	0.15
3	Level of Internet skills proficiency	8–14	0.15
4	Level of data processing skills	15–18	0.1
5	Level of skills of working with students	19–22	0.25
6	Level of readiness to improve own skills	22–26	0.25

Let us consider the results of the survey for each of the question groups. In the first group the situation depicted in Table 8.

Table 8: Distribution of Responses and Overall Score for the First Group of Responses

Question	Answers to the question					Qualimetric indicators					
	Strongly disagree	Disagree	Not sure	Agree	Completely agree	Average score for the question	Weight ratio within the group	Score for the answer within the group	Group score	Weight ratio of the group	Contribution of the response
Group 1. Level of knowledge of the issue											
1. I studied such documents on the national language education policy	16	25	40	34	14	**3.04**	0.3	0.91	**4.05**	0.1	0.40
as Handbook on Educational and Technological Competence of Teachers of the National University and Regulations on the Qualification of Teachers											
2. I realize that modern information technology has become an indispensable method of teaching foreign languages in colleges and universities	0	0	6	46	77	**4.55**	0.3	1.37			

	Strongly disagree	Disagree	Not sure	Agree	Completely agree	Average score	Weight	Score
3. I think that foreign language teachers should improve their ability to deeply integrate modern information technology with foreign language teaching	0	0	10	52	67	**4.44**	0.2	0.89
4. I think that modern information technologies will contribute to my lifelong learning and will be useful for my personal professional development	0	1	11	53	64	**4.4**	0.2	0.88

The table shows that Question No. 2 (4.55) received the highest score, which indicates that respondents are highly aware of the need to use information technology in modern learning and teaching. Questions No. 3 and No. 4 also received very high scores, that is the respondents understand the great potential of the use of information technology in the educational process. However, Question No. 1 received a mediocre score, which indicates that respondents aren't aware of the content of the state educational program documents. In general, this group of questions received a score of 4.05 points, which indicates a fairly high level of awareness of the problems in this area.

The second group of questions obtained the scores shown in Table 9.

Table 9: Distribution of Responses and Overall Score for the Second Group of Responses

Question	Answers to the question					Qualimetric indicators					
	Strongly disagree	Disagree	Not sure	Agree	Completely agree	Average score for the question	Weight ratio within the group	Score for the answer within the group	Group score	Weight ratio of the group	Contribution of the response
Group 2. Level of knowledge of information technology											
5. I am well versed in multimedia teaching equipment and platforms such as computers, projectors, video display desks, and other learning equipment such as cameras	1	3	21	66	38	4.06	0.3	1.22	3.69	0.15	0.55
6. In line with current teaching concepts and learning needs, I can use information resources such as images, videos and animation that promote teaching foreign languages to help students understand and develop their knowledge and skills	0	7	20	79	23	3.91	0.3	1.17			
7. I am free to use software (such as Microsoft Office, image processing software, animation software, video and audio editing software, etc.) to design, develop, process and present foreign language learning resources	3	26	46	44	10	3.25	0.4	1.30			

We noted that the overall score for these questions (3.69) is at a satisfactory level, indicating that respondents are not very skilled in information technologies. According to the results of the answers to Question No. 5 (score 4.06) and No. 6 (3.91), the respondents are generally skilled in the application of multimedia equipment and information technology resources for teaching, but the score for Question No. 7 (3.25) indicates that respondents cannot use software for teaching at a high level.

According to Table 10, we can assess the level of skills of the Internet use.

Table 10: Distribution of Responses and Overall Score for the Third Group of Responses

Question	Answers to the question					Qualimetric indicators					
	Strongly disagree	Disagree	Not sure	Agree	Completely agree	Average score for the question	Weight ratio within the group	Score for the answer within the group	Group score	Weight ratio of the group	Contribution of the response
Group 3. Level of Internet skills											
8. During an epidemic, I am free to use multimedia devices (such as computers, tablets, cell phones, cameras, etc.) to prepare educational videos on the Internet	1	16	23	54	35	3.82	0.1	0.38	3.65	0.15	0.55
9. During an epidemic, I am free to teach online through online learning platforms (such as Tencent Classroom, DingTalk, Wisdom Tree, Micro Teaching Assistant, etc.) and online communications tools (WeChat, QQ, email, etc.)	2	3	7	75	42	4.18	0.2	0.84			
10. It is convenient for me to use the equipment and information technologies for teaching on the Internet, and I have no difficulties in their use	3	18	40	50	18	3.49	0.1	0.35			
11. I can use the software to prepare assignments competently and assess the degree of students' ability to learn independently in a network environment	3	22	44	44	16	3.37	0.1	0.34			
12. I can actively analyse students' attitudes to learning, learning motivation and learning style in the development of blended courses	1	14	45	53	16	3.53	0.2	0.71			
13. I can choose the appropriate information technology tools and develop learning resources according to a particular subject	1	14	51	54	9	3.43	0.15	0.51			
14. I can flexibly implement in-class teaching methods based on information technology tools in accordance with the developed curriculum	2	15	43	56	13	3.49	0.15	0.52			

It is obvious from the table that the overall score of the level of Internet skills is not very high — 3.65 points. Again, respondents admit that the weakest point is the ability to use software to organize the learning process, the score for this question is 3.37, satisfactory level. In general, almost all the questions received a score below the "good" level. Only the level of skills of working with students by means of using Internet platforms received a high level — 4.18.

The responses to the next group of questions give us understanding of the level of respondents' data processing skills. The results are presented in Table 11.

Table 11: Distribution of Responses and Overall Score for the Fourth Group of Responses

Question	Answers to the question	Qualimetric indicators

	Strongly disagree	Disagree	Not sure	Agree	Completely agree	Average score for the question	Weight ratio within the group	Score for the answer within the group	Group score	Weight ratio of the group	Contribution of the response
Group 4. Level of data processing skills											
15. I have mastered the methods of searching for information resources in network databases and can use a variety of network database searches to obtain academic information to help me in foreign language teaching and research	3	20	47	51	8	**3.32**	0.3	1.00	**3.17**	0.1	0.32
16. I can use domestic and foreign online journals and databases (such as CNKI, Web of Science, etc.) to obtain resources for teaching foreign languages and research	5	23	34	56	11	**3.35**	0.3	1.01			
17. I am familiar with the project application system and management platform, and can apply for various training programs/projects at all levels on the Internet	5	37	52	30	5	**2.95**	0.2	0.59			
18. I can use technical means for statistical analysis of research data (such as SPSS, EXCEL, etc.), as well as use statistical methods for quantitative research	12	39	39	31	8	**2.88**	0.2	0.58			

The obtained results indicate that the respondents don't have a high level of data processing skills (the overall group score is 3.17 points). The ability to use the software was assessed at the lowest level, as evidenced by the responses to Question No. 18 — 2.88 points. The understanding of the project application system is also very low (2.95), in this case one of the probable reasons may include a lack of information from governmental documents, which has already been noted in the answers to the first group of questions. Respondents rate their level of ability to find the necessary information (3.32) and the ability to use information from various Internet resources for their teaching activities (3.35) slightly higher.

The next group of questions is directly related to the teaching activities of the respondents. Table 12 shows the results of the survey on skills of working with students.

Table 12: Distribution of Responses and Overall Score for the Fifth Group of Responses

Question	Answers to the question					Qualimetric indicators					
	Strongly disagree	Disagree	Not sure	Agree	Completely agree	Average score for the question	Weight ratio within the group	Score for the answer within the group	Group score	Weight ratio of the group	Contribution of the response
Group 5. Level of skills of working with students											
19. I actively help to develop students' knowledge of online learning and improve their ability to self-learn and research	1	12	25	70	21	3.76	0.25	0.94	3.74	0.25	0.93

Question	Strongly disagree	Disagree	Not sure	Agree	Completely agree	Average score for the question	Weight ratio within the group	Score for the answer within the group	Group score	Weight ratio of the group	Contribution of the response
20. I implement information-based learning tools in teaching (such as information request and search, remote login, information browsing, downloads, integration, etc.) to help students expand their learning abilities.	1	21	41	51	15	3.45	0.35	1.21			
21. In teaching, I actively develop students' skills to integrate and process information in a networked environment to help them improve their learning performance.	1	16	35	68	9	3.53	0.15	0.53			
22. I communicate with students through online communication software (e.g. WeChat, QQ, e-mail, etc.) to effectively motivate students to learn and interact after class	0	2	7	77	43	4.25	0.25	1.06			

It's obvious that the overall group score (3.74) is close to the "good" level, but it should be noted that this is due to the answers to Question No. 22, which received a relatively high score — 4.25, indicating that respondents believe that they can effectively teach students online. The scores for other questions indicate that these aspects of respondents' work are not well developed and need to be improved. This is especially related to Question No. 20, which received a rather mediocre score of 3.45 points, and Question No. 19 to a lesser extent (3.76).

The last group of questions concerns the willingness and desire of respondents to improve their professional level (Table 13).

Table 13: Distribution of Responses and Overall Score for the Sixth Group of Responses

Question	Answers to the question					Qualimetric indicators					
	Strongly disagree	Disagree	Not sure	Agree	Completely agree	Average score for the question	Weight ratio within the group	Score for the answer within the group	Group score	Weight ratio of the group	Contribution of the response
Group 6. Level of readiness to improve skills											
23. I think that learning information technology has a great impact on improving my information literacy and teaching skills	0	3	19	59	48	4.18	0.15	0.63	4.11	0.25	1.03
24. I hope that experts can be invited to give lectures on improving information literacy and learning opportunities for Chinese foreign language teachers	0	6	13	66	44	4.15	0.15	0.62			
25. I hope to participate in domestic high-level seminars on information literacy for Chinese foreign language teachers for systemic learning	0	8	17	63	41	4.06	0.35	1.42			
26. As a Chinese foreign language teacher, I hope to participate in online training to improve the teaching through the online learning platform	0	8	12	66	43	4.12	0.35	1.44			

The group score for the survey results (4.11) is quite high, which indicates that respondents have a strong desire to improve their skills. Within the group, the scores of all questions are almost equally higher than the "good" level. This indicates that respondents consider all areas of self-improvement to be equally important and helpful in reaching new levels of their skills development.

The overall score for information literacy was calculated based on group score considering the weight ratios for each group (Table 14).

Table 14: Calculation of the Overall Score for Information Literacy

Item No.	Question group	Group score	Weight ratio	Contribution of the response	Overall score for information literacy
1	Level of knowledge of the issue	4.05	0.1	0.40	3.78
2	Level of knowledge of information technology	3.69	0.15	0.55	
3	Level of Internet skills	3.65	0.15	0.55	
4	Level of data processing skills	3.17	0.1	0.32	
5	Level of skills of working with students	3.74	0.25	0.93	
6	Level of readiness to improve skills	4.11	0.25	1.03	

Figure 1 clearly illustrates the distribution of the scores:
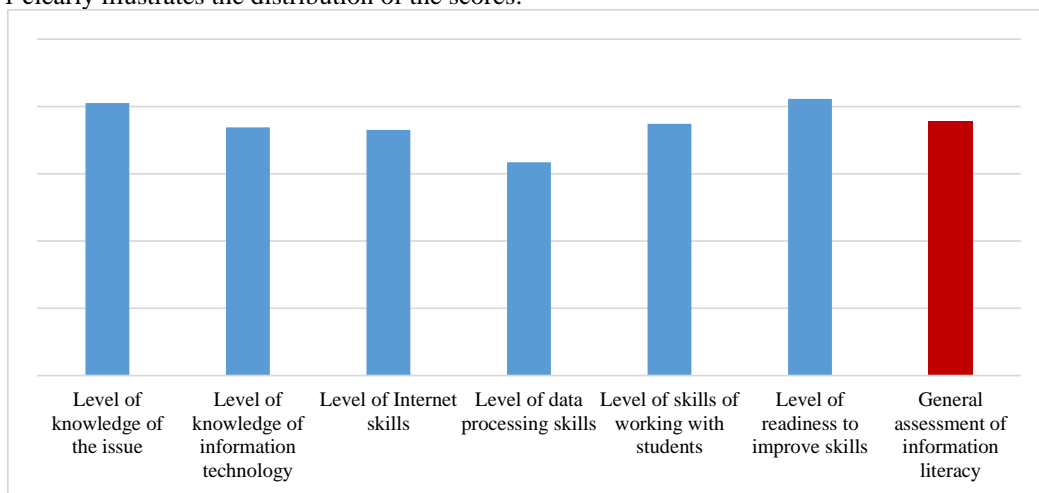
Fig.1: The correlation of group score and the overall score for information literacy

The obtained overall score indicates that the general level of information literacy has not reached the "good" level yet.

The responses for each of the 26 questions provided an opportunity to create a holistic view of the problem of information literacy of foreign language teachers in the PRC: a conscious need for Chinese foreign language teachers to develop information literacy; perception of information literacy as a component of teacher competence and acquired personal traits and lifestyles; information literacy allows for a wider and more successful fulfilment of an individual in modern society. At the same time, such problems in the information literacy development as the need to improve skills of working with office software products, the need to increase information literacy through training, learning best practices, seminars, etc. have been analysed through the survey.

DISCUSSION

The introduction of new, promising forms and methods of teaching, education and development of students is always an effective stimulus to the creative search of teachers. Achieving learning outcomes defined in the state documents of the People's Republic of China directly depends on the competence of teachers, and their information literacy becomes not only an integral part of competence, but also one of the main tools of professional growth and competitiveness (Symonenko et al., 2020).

The development of information literacy of foreign language teachers in the PRC, who are subjects of professional pedagogical activities, should be perceived as positive changes in the elements of information literacy, which are possible due to innovations, updating information potential, etc. The results of our observation show the similarities with the analytical data presented in the works of Behrens (1994) and Wang, Wei and Zhao (2017). The research of these scholars revealed the problems of development of information literacy competencies, the evolution of this phenomenon in modern society.

According to the research results, most of the teachers pay much attention to preparing and conducting their classes, which becomes an excuse for the lack of time to participate in seminars, training sessions or round tables aimed at improving teaching ability. However, one of the purposes of our survey was to determine which forms and methods are interesting to Chinese foreign language teachers for developing their information

literacy. According to the real experience and results of our survey of the professional activities of Chinese foreign language teachers, it is possible to develop their information literacy by means of innovative methods. Therefore, an important task for the development of information literacy is the teachers' understanding of this component of pedagogical competence as a phenomenal individual and professional element that combines theoretical knowledge and information management as well as the awareness of the value of information resources (Hsu, 2010).

Another important conclusion is that the development of information literacy of Chinese foreign language teachers is possible only within creative teaching activities. None of the reviewed sources mentioned the creative activity of teachers as a factor of the development of information literacy. This conclusion is possible to make upon observing foreign language teachers' activity during their classes. For instance, in the process of conducting the class on the topic "Project Management in the World" as a part of the subject "English for Economists" in Jiaxing University, it's necessary to explain the tools of modern information business management, which is impossible without the skills of information resources application. Therefore, the main suggestions to solve the problem of information literacy of Chinese foreign language teachers are the organisation of educational activities aimed at showing the importance of information literacy, and further participation in trainings, workshops, seminars, and other forms of scientific cooperation on information literacy (Hu & Wang, 2018).

CONCLUSIONS

Information literacy is the challenge of the current society. China is a country with modern achievements, which applies a large number of technologies, primarily in the field of education. Therefore, Chinese teachers need to catch up with the country's rapid development, adopt to the gradually changing teaching environment and obtain the optimal level of information literacy.

The scientific novelty of this research is the determination of the level of information literacy of foreign language teachers in the PRC in order to find effective ways to improve its level. Analysis of the results of the research provides the grounds for developing a methodological framework for the active use of modern interactive methods in the development of information literacy of Chinese foreign language teachers (seminars, trainings, round tables, workshops, etc.).

RECOMMENDATIONS

Promising areas for further research include the application of interactive methods in combination with collaborative technologies for the development of information literacy of foreign language teachers in China and abroad.

ACKNOWLEDGMENTS

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