

Reflections on the Information Literacy of English Teachers in the Context of China's Education Informatization 2.0

Mu He

Chongqing Normal University, Chongqing, 401331, China

Abstract: *The promulgation of "Education Informatization 2.0 Action Plan" marks that China's education informatization has entered a new historical development stage. The context, mode, content of English language teaching in Chinese middle schools are faced with radical changes, too. English teachers themselves should reshape their educational ideas and professional roles, and integrate information technology into English language teaching. They sever as constructors of teaching knowledge system, constructors of teaching information environment, integrators of teaching information resources, and guides of students' personalized learning. The external forces such as schools, education authorities and the government should cultivate English teachers' information literacy from different perspectives.*

Keywords: *Education informatization, Information literacy, English teacher, Teacher development*

1. Introduction

The Ministry of Education of the People's Republic of China issued the "Education Informatization 2.0 Action Plan" on April 13, 2018. [1] This new policy of China's education informatization is driven by three factors: the promotion of China's education informatization 1.0, the requirement of Education Modernization to 2035[2], and the response to "smart education".[3] Its main characteristics are innovation-driven development rather than technology driven development. It is committed to the expansion of digital education resources rather than the digital presentation of textbooks, so as to improve the information literacy of teachers and students instead of information application skills. The future vision of the plan includes the establishment of a new model of talent training, education services and education governance. Its development focuses are as follows.

Firstly, educational informatization is transformed from technology centered to learning centered. In the era of Education Informatization 1.0, the focus of education administrative departments is the popularization of hardware and equipment. [4] In the era of 2.0, with the further development and improvement of technology, software, hardware and other equipment resources will no longer be the main problem, and the main factors hindering the promotion of education informatization are the education and teaching ideas of all leaders, especially the front-line teachers, and the establishment of corresponding mechanism and system (including the school's teaching and research mechanism, incentive mechanism, and corresponding courses) schedule, etc. [5] From taking technology as the driving force of educational modernization to applying technology to education and teaching, it has become a factor in teaching and learning as the center, which is the prominent feature of educational informatization 2.0. Information technology will become the endogenous variable that causes the deep-seated systematic change of education.

Secondly, the transformation of education and teaching methods will be promoted. [6] In the action plan of 2.0, the sharing plan of educational resources is proposed. Traditional education and teaching mostly depended on resources presented by textbooks and their knowledge system. However, with the development of the times, students are required not only to learn subject knowledge, but also to cultivate the core quality of the subject, including improving students' ability of in-depth exploration and thinking, independent development, and enhancing the sense of social participation and responsibility. Now after the sharing of big resources, the Internet provides unlimited possibilities for resources. Teachers must reform teaching methods based on students' adaptation to the development of the future society, so that students can improve their learning and innovation ability in participation, exploration, cooperation and display.

Thirdly, education informatization will change from the integration of technology and education to the integration of innovation. At present, the focus of educational informatization is how teachers apply technology to teaching and integrate it with teaching, which is also the initial stage. With the development of educational informatization, in the era of educational informatization 2.0, with teachers' familiarity with technology and further maturity of technology, it will become a trend for teachers to creatively solve problems in teaching, learning and life with information technology.

Education informatization is the inevitable way for the education system to comply with the national informatization development strategy, and has a profound impact on the education reform. [7] Education informatization is the only way to realize the leap forward development of education and education equity. Teacher education informatization is the inevitable requirement of teacher professionalization in the information age and the inevitable result of teacher professional development in the information society. To effectively realize the informatization of teacher education, the key is to improve the information literacy of teachers, which is also the core goal of the informatization of teacher education. In a series of documents issued by the Ministry of education on the informatization construction of teacher education, such as "Opinions of the Ministry of Education on Promoting the Informatization Construction of Teacher Education", the improvement of teachers' information literacy has been put in a very important position.

2. The connotation and composition of English teachers' information literacy

With the formation of information industry, information literacy is a comprehensive concept with wide connotation. Its connotation is constantly improved with the continuous change of people's understanding of information technology and the deepening of social informatization. At present, there is no unified definition and evaluation standard for information literacy and some related terms in the world. Currently, the most widely accepted definition of teachers' information literacy is given by Professor He Kekang of Beijing Normal University, who defined that teachers' information literacy should be the basic knowledge and practical ability related to information acquisition, information analysis, information processing and information utilization. [8] As the professional role of disseminating English scientific knowledge and cultivating English talents, English teachers should not only have the necessary traditional basic literacy such as general cultural knowledge, English professional knowledge and educational science knowledge, but also constantly develop their own information literacy to meet the new requirements of teacher education informatization. With the development of teacher education informatization and the change of English teachers' professional development, the connotation and extension of English teachers' information literacy are constantly enriched and expanded.

So far, there are still many controversies about the definition and connotation of English teachers' information literacy. From the existing expressions, the narrow meaning of English teachers' information literacy can be understood as: English teachers creatively use the information technology and information resources represented by multimedia computers and networks to obtain relevant English education and teaching information, and design, apply, evaluate and manage the English learning process and English learning resources in the information environment in order to have the ability to promote students' learning and their own professional development. As the undertaker of English education practice and the implementer of English education reform, English teachers have changed from the single imparter of English knowledge and skills to the builder of English learning module, the organizer of English learning activities and the provider of English information resources. The level of their information literacy directly affects the efficiency and effect of English education and teaching.

In addition to the general connotation of information literacy, English teachers' information literacy in a broad sense should also have the information literacy to promote their professional self-development. The so-called information literacy to promote their professional self-development can also be understood as the ability of English teachers to use information literacy to serve scientific research. Obviously, improving English teachers' information literacy is the requirement of teachers' professional development for English teachers, an important guarantee for teachers' education informatization to promote the great leap forward development of school English education, and an inevitable requirement for implementing the scientific concept of development with "people-oriented" as the core.

Combined with the actual situation of information literacy of English teachers in China, it is believed that the information literacy of English teachers includes at least four aspects: consciousness literacy at the cognitive level, cultural literacy at the knowledge level, skill literacy at the operational level, moral literacy at the ideological and attitudinal level. It is suggested that consciousness literacy is the forerunner

of information literacy, cultural literacy is the foundation of information literacy, skill literacy is the core of information literacy, and moral literacy is the guarantee of information literacy.

Consciousness literacy is the accomplishment of cognition. Consciousness literacy refers to people's understanding and reaction to the nature, status, value and function of information in social development. Generally speaking, consciousness literacy refers to people's sensitivity to information, their consciousness of capturing, searching, selecting, evaluating and using information, and the information cognitive strategy of regulating and controlling the process of information activities. [9] The strength of information consciousness will directly affect the degree and effect of people using information. Although the process of English education is different from the general education process, it also has the characteristics of information communication and dissemination. English education must take "information literacy" as a new foothold.

Cultural literacy is the level of knowledge literacy, is the integration of traditional cultural literacy and modern information knowledge. Although the network information age has improved the transmission and expression of the basic abilities of reading, writing and calculating in traditional culture, the ability of reading, writing and calculating in traditional culture is still the basis of human cultural literacy. Information literacy is the combination of traditional and modern cultural literacy of scientific and cultural literacy and the extension and expansion of traditional cultural literacy. [10]

With the wide application of information technology in the field of school English education and the rapid expansion of English information network, English teachers should not only have traditional cultural literacy, but also master information common sense, multimedia, network and other modern information technology knowledge. Information common sense includes information theory knowledge, information methods and principles, information development trends and their understanding of human impact; modern information technology knowledge includes information technology principle, information technology role, information technology development and its future, etc., which are the premise and foundation of the formation and development of information literacy.

Skill literacy refers to the operational level of literacy, which refers to the ability of English teachers to effectively use information tools and information resources to obtain information, process information and generate new information. [11] It requires English teachers to have the ability to collect and select information, to understand and judge information, to use information tools and to develop information resources. English teachers should apply information technology to study practical teaching problems, improve learning and work efficiency, and carry out cooperation and communication. Information skill literacy is the core of information literacy, which directly affects the efficiency and quality of English language teaching. English teachers should be able to use the latest information technology to effectively interpret, obtain and evaluate English information according to the needs of the integration of English language teaching and curriculum. Combined with solving the practical problems of English language teaching, they should effectively choose and use information technology and other teaching media to design and organize the English language teaching process, effectively integrate information technology with English language teaching elements and curriculum, and create a new type of English language teaching environment. It can make use of information technology to accurately and quickly evaluate and reflect on students' English learning activities and teachers' English language teaching process from different angles, and carry out English language teaching cooperation and communication with the help of network information technology, so as to continuously improve personal information teaching ability.

Moral literacy is the quality of ideology and attitude, which refers to the compliance with moral requirements, moral norms and the ethics formed on this basis in the process of obtaining, utilizing, processing and disseminating information. [12] Information ethics is to grasp the direction of information literacy, whose maintenance mainly depends on the power of public opinion and people's beliefs, habits, traditions and education. Compared with traditional morality, information morality pays more attention to moral self-discipline characterized by "cautious independence". Whether as a member of the society or as a professional role, English teachers should abide by the culture, laws and regulations and ethics related to information technology, respect knowledge, pay attention to the protection of intellectual property rights, and jointly improve the network moral quality.

3. The necessity of English teachers to construct educational information literacy

English teachers' information literacy plays an important role in their future career. [13] First of all, it broadens the development space of English teachers. English teachers use micro media teaching tools such as mobile phone network and WeChat official account to develop micro video teaching, so that

English teachers can walk from confined classrooms to a wider teaching platform, promote English teachers' scientific guidance in English learning, teach language learning skills, and inject more powerful help to inspire and develop students' interest in English learning. Secondly, it improves the professional quality of English teachers. English teachers integrate their professional knowledge and broad subject knowledge into education informatization, which can improve their ability to obtain and use information quickly. Through various information means, it can help English teachers improve their critical thinking ability, identification ability and analysis ability, broaden their horizons of knowledge, and promote scientific research and teaching. Finally, the education information literacy of English teachers can promote English teachers to keep pace with the times, constantly update their knowledge structure, spur English teachers to constantly contact with new teaching methods and means, study and explore new ideas.

Secondly, information technology provides a wide range of teaching tools for English language teaching in school. [14] Good education information literacy can help English teachers to optimize lesson preparation by locating teaching materials. Secondly, good education information literacy means good information operation ability, and the ability to use rich information resources to stimulate students' interest in learning. For example, teachers can find the information materials needed in advance on the Internet, intersperse various multimedia music and videos in classroom teaching, and use information materials to replace teachers' explanation, so as to make students pay attention and stimulate students' interest, and make boring language learning full of vitality, so as to improve the quality of teaching.

Thirdly, for English language teaching, education informatization is not only a precious resource, but also a method of thinking. It will pay more attention to the combination of informatization and English language teaching, by storing and classifying effective information into a unified database. For example, the quality class competition held by schools every year can be recorded and archived as a resource library. At the same time, using the characteristics of education informatization, intelligence, digitization and sharing to track and scientifically evaluate students' English achievements from enrollment to graduation can save teachers' workflow, find the basis to guide students' learning from tedious data, and improve teaching efficiency.

Fourthly, information technology provides a broader knowledge base for English teachers, and helps them constantly update and optimize their knowledge reserves. Information literacy is the ability of English teachers to use modern information technology, which can help them optimize classroom organization, improve English language teaching mode, and broaden the breadth and depth of knowledge. It is one of the necessary literacies for English teachers' lifelong learning. English teachers with good information literacy will be keenly aware of social change and the development trend of the times, actively explore the law of development, consciously learn and dare to practice. At the same time, the era of big data provides a more comprehensive evaluation system for teachers. Intelligent information technology helps teachers objectively collect information, and provides teachers with scientific teaching and learning data to guide teaching.

4. Misunderstandings in the cultivation of English teachers' information literacy

With the expansion of information network and the development of education informatization, the traditional knowledge transmission mode between teachers and students has been transformed into the education mode of cultivating students' autonomous learning ability (information literacy), which has become a hot issue in the education field. Although leaders of education departments at all levels and schools in China have realized the importance of improving English teachers' information literacy, and put forward corresponding requirements and training for English teachers, there is still a big gap between their training ideas and strategies and the requirements of educational informatization. Some misunderstandings or defects basically include the following aspects.

Firstly, more attention is paid to the training of technology than the cultivation of consciousness literacy and attitude. At present, the cultivation of English teachers' information literacy is mainly carried out through various technical training, such as the teaching of animation, web page, courseware making and so on. It seldom involves the training of thematic information skills in English education and research, while the cultivation of English teachers' consciousness literacy and attitude is relatively lacking. On the one hand, it is due to the misunderstanding of the meaning of information literacy among the leaders in charge of educational administrative departments at all levels, teaching administrators and some English teachers; on the other hand, the main reason is that the implementation of technical training is simple and immediate, and the "effect" is obvious. However, it has been proved that the information technology

training without consciousness literacy and attitude training can help English teachers improve their information technology level in a short time, but it has limited effect on improving their information literacy and solving the problem of how to effectively use information technology in teaching practice. Therefore, we must not pay too much attention to the cultivation and training of information technology and neglect the cultivation of consciousness literacy, attitude, strategy and other aspects, and fall into the misunderstanding of technicalism.

Secondly, the training is out of the line with the actual teaching and research practice. At present, the information technology training is mostly implemented by off-campus training institutions or school information technology professionals. Most of the trainers are lack of in-depth understanding and real experience of English language teaching and research, ignoring the characteristics of English teachers' ability and quality. In addition, the lack of explanation of excellent English language teaching cases in the training process makes it difficult to effectively integrate the knowledge learned in the training with English language teaching practice, which affects the realization of training objectives. Although it is an important means to improve English teachers' information technology level by organizing and implementing information technology training, it cannot be the fundamental purpose of information literacy training, nor should it be the whole of information literacy training for English teachers. Information literacy training should wake up the subject consciousness of English teachers through effective means, enhance the sense of urgency of improving information literacy, guide English teachers to combine information literacy training with personal teaching practice and personal professional development, and realize the self-cultivation and sustainable improvement of information literacy.

Thirdly, there is a lack of continuous and effective training evaluation and feedback mechanism. Training is a dynamic, constantly adjusted and non-linear development process. Therefore, the implementation and management process of training must be a process of timely understanding of feedback information and dynamic adjustment of training courses. At present, the information technology training for English teachers is mostly organized by departments at all levels. Due to some teachers' lack of understanding of the actual level and needs of English teachers' information technology, they put too much emphasis on the theoretical knowledge teaching of modern information technology in the training, resulting in that what teachers learn in the training cannot be used in teaching practice. There are many reasons for the lack of effectiveness of information technology training for English teachers. One is that there is no process evaluation on the application of information technology in the English language teaching process. After the training, there is no extensive collection of feedback from English teachers on the training content and training program, and there is no stable and smooth feedback mechanism between the training department and English teachers. The lack of process evaluation and feedback mechanism not only affects the way but also the effect of training. Therefore, we should take the application of information technology in English teachers' teaching as the basic yardstick to evaluate the training effect, and use the feedback of English teachers to adjust the training methods and contents, so as to help English teachers obtain the strategies and methods of applying information technology to English language teaching.

Fourthly, the information infrastructure and resource construction are lag behind. To provide a good information infrastructure for English teachers is the fundamental guarantee to improve their information literacy and realize the informatization of English education. The allocation of information technology hardware equipment will be affected by the school economic conditions, leadership attention and other factors. At present, a considerable part of the school's information infrastructure is lagging behind in terms of hardware. There are certain restrictions on the allocation of modern teaching facilities for English teachers, which objectively restricts the improvement of English teachers' information literacy. Abundant information resources are the prerequisite of cultivating good information literacy, and the construction of information resources is directly related to the improvement of teachers' information literacy and the development of educational informatization. In order to give full play to the role of information technology in English language teaching, only hardware facilities are not enough. Great importance should be attached to the construction of English information resources. At present, there are still bottlenecks in the construction of English language teaching information resources, which are mainly reflected in four aspects: the integration of resources, the availability of resources, the renewal of resources and the lack of successful resources. There is a serious shortage of English language teaching information resources that can really meet the concept of English curriculum reform, meet the needs of English classroom teaching and adapt to the characteristics of the network.

5. Strategies for improving English teachers' information literacy

Effective training of English teachers' information literacy is an important way to train English teachers and improve their teaching quality. [15] It is also an inevitable requirement for the development of English teachers in the current school English education reform. All education departments and schools should pay attention to and advocate the training of English teachers' information literacy. At the same time, by carrying out multi-level and multi form training and expanding the construction of information resources and other ways, we can create an information literacy education system in which English teachers learn actively, improve themselves and strengthen external conditions.

Firstly, the understanding of education informatization and strengthen the consciousness literacy should be improved. Correct understanding of informatization and improvement of consciousness literacy will greatly improve the information literacy of middle school English teachers and lay a good foundation for improving the quality of teaching. English teachers should be aware of the role and importance of information technology in English language teaching, and have a deeper and more comprehensive understanding of the function and value of information technology, which is the most fundamental requirement of education information literacy. In teaching, whether English teachers can master all kinds of information technology, whether they can use information technology to find useful information in the vast ocean of information, whether they can consciously excavate the hidden information of various educational phenomena, and find ways to solve educational problems are the comprehensive embodiment of consciousness literacy, which is the educational information literacy that English teachers should have.

Secondly, the government and schools should increase the investment in the software and hardware facilities of education informatization to create a good basic environment. The software and hardware of educational informatization is the foundation of the formation of English teachers' information literacy, and also the urgent need of English language teaching. The application and processing of information depend on information equipment, which is the most effective means to improve information literacy. Therefore, in order to meet the requirements of English language teaching, strengthen the information application ability of English teachers, and achieve the requirements of application practice, the government and schools should pay attention to the construction of English language teaching software and hardware, create a good information environment for English language teaching, meet the requirements of educational informatization in the new era, and create favorable conditions for cultivating and improving the educational informatization literacy of English teachers. After years of integration of information technology and education and teaching, many information technologies have been integrated into the campus. Multimedia classroom, network center, wireless network, campus radio, digital library and other hardware, database and other software have become indispensable auxiliary tools in the campus. In the process of education informatization, many schools attach importance to the establishment of multimedia classrooms, use various networks and media to spread knowledge for students, help teachers record teaching videos, find and solve problems. However, in the process of information equipment construction, many schools ignore the information equipment of English subject, and do not equip relevant multimedia teaching equipment for English language teaching, and also ignore the construction of network English language teaching platform.

Thirdly, the competent departments and schools should build the mechanism of English education informatization literacy training and learning. Improving English teachers' education information literacy can make English teachers adapt to the development requirements of education information, and achieve the purpose of skillfully using information tools to serve English education and improve the quality of English language teaching. This requires the cooperation of relevant government departments and schools to build an information-based learning and training platform for middle school English teachers and form a long-term communication mechanism. The competent department can carry out various practical activities of educational informatization, organize the most cutting-edge information technology training, enable English teachers to learn and master the latest information technology and theoretical knowledge, promote the exchange of educational informatization in various disciplines, and open up the informatization vision of English teachers. According to the needs of its own information construction, the school can carry out corresponding school-based information literacy training, invite experts to train English teachers, actively organize all kinds of information teaching competitions, and encourage teachers to actively participate in English information literacy teaching and scientific research activities, display scientific research achievements, fully mobilize the enthusiasm of middle school English teachers in education information learning, and improve the quality of teaching high use of information technology to solve teaching problems.

6. Conclusion

The essence of English teacher's information literacy is that English teachers use information and communication technology to "transform" subject knowledge into a kind of knowledge structure effectively obtained by students in the real teaching situation, and its purpose is to realize technology-based learning. The key to improve the teaching quality and classroom efficiency is to enhance English teachers' information-based teaching ability, which is characterized by distinct context, integration and generation. It is related to and different from information technology ability and educational technology ability. Therefore, in the future research, it is worth further exploring to improve the information literacy training system of English teachers, strengthen the organizational support and construct the network teaching platform.

Acknowledgements

This paper is one of the achievements of the Doctoral Start Up Fund/Talent Introduction Project (No. 17XWB012) of Chongqing Normal University.

References

- [1] Ministry of Education of China. *Education Informatization 2.0 Action Plan*. (2018). http://www.moe.gov.cn/srcsite/A16/s3342/201804/t20180425_334188.html.
- [2] The State Council of the CPC Central Committee. *Education Modernization to 2035*. (2019). http://www.gov.cn/zhengce/2019-02/23/content_5367987.htm.
- [3] The State Council of the CPC Central Committee. *The 13th five-year plan for the development of national education*. (2017). http://www.gov.cn/zhengce/content/2017-01/19/content_5161341.htm.2017-01-19.
- [4] Ministry of Education of China. *Outline of national medium- and long-term education reform and development plan (2010-2020)*. (2010). http://www.moe.gov.cn/srcsite/A01/s7048/201007/t20100729_171904.html.
- [5] Zhu, Z.T., & Peng, H. C. *The practical path of technology enabled wisdom education*. (2020). *Chinese Journal of Education*, 10.
- [6] *People's Daily*. *The report of the 19th National Congress of the Communist Party of China*. (2017). <http://cpc.people.com.cn/19th/1/2017/1027/c414395-29613458.html>.
- [7] Ministry of Education of China. *Opinions of the Ministry of Education on promoting the Informatization Construction of Teacher Education*. (2020). <https://www.edu.cn/20021119/3072463.shtml>.
- [8] He, K. K. *The great influence of the new information technology on the deepening reform of education since the 21st century*. (2019). *E-education Research*, 40(3). DOI: 10.13811/j.cnki.eer.2019.03.001.
- [9] Xu, X.D. *Promote the education of information culture, media culture and digital cultural literacy through practice*. (2010). *Information Technology Education in Primary and Secondary Schools*, 2010(09), 23-25.
- [10] Xu, J. *A review of the research on teachers' information consciousness in the information age*. (2019). *Vocational Education*, 2019(4), 61-62.
- [11] Liu, Y. *Investigation and promotion strategy of preschool education teachers' Information Literacy under the new normal of Internet plus education*. (2018). *China Educational Technology*, 378, 90-96.
- [12] Song, J. S. *On the cultivation of teachers' information literacy*. (2009). *Research on Education Management*, 2009(8), 49-52.
- [13] Chen, B. S. *Speech at the National Conference on education in 2018*. (2018). http://www.moe.gov.cn/jyb_xwfb/moe_176/201802/t20180206_326931.html.2018-02-06.
- [14] Ministry of Education of China. *Notice of the Ministry of Education on printing and distributing the 13th five-year plan of educational informatization*. (2016). http://www.moe.gov.cn/srcsite/A16/s3342/201606/t20160622_269367.html.2016-06-07.
- [15] Wei, F. et al. *Construction of micro certification system based on educational design research -- taking teachers' information technology application ability as an example*. (2019). *Research on Open Education*, 2019(2).