

# **Research on the Improvement Path of Digital Literacy of Teachers in Higher Vocational Colleges**

**Lijun Shi**

*Kaifeng Vocational College of Culture and Arts, Kaifeng, China*

**Abstract:** With the rapid development of information technology, the digital literacy of teachers in higher vocational colleges affects the quality of education and teaching effect, and has become a key factor to improve the quality of education and teaching and to cultivate high-quality technical talents needed by the society. This study focuses on the in-depth research on the improvement of digital literacy of teachers in higher vocational colleges. Through questionnaire survey and case study, the existing problems and influencing factors of digital literacy of teachers in higher vocational colleges are deeply analyzed and studied. The study found that the digital literacy of teachers in higher vocational colleges is generally low, mainly due to the lack of learning motivation, and the lack of training and support. On this basis, a set of effective ways to improve teachers' digital literacy, including making personalized learning plans, strengthening professional development training, creating learning organization and culture, and teachers' self-learning and other strategies and measures. This will be conducive to optimizing teachers' teaching mode, changing teaching methods, improving teaching effect, and is of great value to improving the digital literacy of teachers in higher vocational colleges.

**Keywords:** Teachers of Higher Vocational Colleges; Digital Literacy; Promotion Path; Learning Motivation; Learning Organization

## **1. Introduction**

In the current information society, digital literacy has become an important indicator to evaluate the vocational skills of higher vocational college teachers, and even a key factor affecting the quality of education and teaching effect. Recent research shows that the higher the digital literacy of teachers, the better the teaching effect and students' learning effect.

However, the current situation of digital literacy of teachers in higher vocational colleges in China is not optimistic, and the digital literacy of most teachers is low. This phenomenon makes higher vocational colleges greatly limited in the training of high-quality technical talents needed by the society. The core of the problem is how to effectively improve the digital literacy of higher vocational college teachers. Scholars have put forward many strategies and methods to improve teachers' digital literacy, such as making personalized learning plans, strengthening professional development training, creating learning organizations and culture, and teachers' self-learning. There is no doubt that these methods do work, but do they really work? Based on the ultimate goal of improving the quality of education and the forward-looking perspective, this study carries out the research on the improvement of digital literacy of teachers in higher vocational colleges, especially whether the improvement methods and paths meet the actual needs of teachers. It is hoped that through in-depth research, feasible and operable methods and strategies to improve the digital literacy of teachers in higher vocational colleges can be given, so as to truly improve the teaching quality of higher vocational education in China.

## **2. Digital Literacy and Higher Vocational Education**

### **2.1 The Concept and Characteristics of Digital Literacy**

Digital literacy, also known as digital literacy, refers to the individual's ability to effectively acquire, understand, apply and exchange information in a digital environment<sup>[1]</sup>. With the rapid development of information technology, digital literacy has become one of the essential qualities for citizens in modern society. It includes not only the basic ability to operate digital technology, but also the ability to think critically about information, be creative in

problem solving and adapt to the changing digital environment.

Digital literacy has multiple characteristics. It is a dynamically evolving concept, and the specific requirements for digital literacy are constantly changing as the technology advances and its applications change. Individuals must continuously learn and update their skills to meet new numerical challenges. Digital literacy is interdisciplinary. It not only involves computer science, information technology and other fields, but also involves pedagogy, psychology, sociology and other multidisciplinary knowledge. Improving digital literacy requires a collaborative effort.

In the field of education, especially in higher vocational education, digital literacy is particularly important<sup>[2]</sup>. The digital literacy of teachers in higher vocational colleges is directly related to the teaching quality of education and the cultivation of students' professional ability. Teachers have a high level of digital literacy, which can not only effectively apply modern educational technology and improve the teaching effect, but also stimulate students' interest in learning and independent learning ability through innovative teaching mode.

Digital literacy also includes perceptions of information ethics and security<sup>[3]</sup>. In today's society where information flooding and privacy protection are increasingly important, teachers need to have the correct concept of information ethics, guide students to use network resources reasonably, protect personal privacy, and avoid problems such as information abuse and network fraud. This is also an important part of digital literacy.

As a new type of quality, digital literacy has complexity and multi-dimension. For teachers in higher vocational colleges, improving digital literacy is not only the need of personal development, but also the inevitable requirement to adapt to education informatization and improve teaching quality. Through systematic learning and training, teachers can comprehensively improve their digital literacy, so as to better serve the education and teaching work.

## **2.2 Characteristics and Needs of Higher Vocational Education**

As an important part of vocational education, higher vocational education has a unique need of cultivating application-oriented and skilled

talents. Its characteristics are mainly reflected in the following aspects: higher vocational education pays attention to the cultivation of practical skills, emphasizing the improvement of students' practical ability and practical operation ability. Teachers not only need to have solid theoretical knowledge, but also need to master and apply modern information technology to adapt to the changing needs of the industry. The curriculum of higher vocational education is flexible and diversified, which requires teachers to have strong ability of curriculum development and teaching design, and can timely update the teaching content according to the development trend of the industry and the needs of enterprises, so as to ensure the practical and forward-looking teaching. Higher vocational education requires teachers to have good communication and cooperation ability, so as to play a positive role in school-enterprise cooperation, the combination of industry, university and research, and promote the close combination of teaching and production practice. These characteristics and needs of higher vocational education determine that higher vocational teachers must constantly improve their digital literacy, so as to better support teaching innovation and the improvement of education quality, and then cultivate high-quality technical talents who meet the needs of the society and enterprises.

## **2.3 The Importance of Digital Literacy in Higher Vocational Education**

Higher vocational education aims to cultivate high-quality skilled talents with professional technology and practical ability. Digital teachers, as the key ability to adapt to the information teaching environment and improve the teaching effect, digital literacy is directly related to the teaching quality and students' comprehensive quality<sup>[4]</sup>. Teachers with a high level of digital literacy can flexibly use modern educational technology, innovate teaching models, provide personalized learning support, and enhance students' interest in learning and practical ability. Digital literacy also promotes teachers to constantly update their knowledge structure, adapt to the rapidly changing educational needs, and lay a foundation for the society to provide technical personnel who meet the requirements of The Times.

## **3. Current Status and Influencing Factors of Digital Literacy of Higher Vocational**

## Teachers

### 3.1 Survey on the Status Quo of Digital Literacy of Higher Vocational Teachers

The digital literacy of higher vocational teachers is one of the important links to improve the quality of higher vocational education. Through questionnaire survey, the literacy of teachers in the application of information technology, utilization of digital resources and mastery of digital teaching tools is studied. The survey results show that most higher vocational teachers perform better in the basic digital skills, such as the use of office software, simple data processing, etc. However, there are still obvious deficiencies in higher levels of digital skills, such as in the integration of educational technology, the application of network teaching platform, and the development and use of multimedia teaching resources.

Specifically, higher vocational teachers are relatively weak in the acquisition and evaluation of digital resources, data analysis and application, information security awareness and other aspects. The survey also found that some teachers, despite their certain digital skills, have not been fully applied and improved due to the lack of systematic training and learning opportunities<sup>[5]</sup>. Due to the heavy teaching tasks and the high pressure of scientific research, teachers have a relatively limited time and energy investment in the improvement of digital literacy.

Teachers with different subject backgrounds differ in the level of digital literacy. Teachers in IT majors have relatively high digital literacy and can skillfully use various digital tools in teaching and research activities, while they have large gaps in digital literacy, especially in the application of complex digital tools and platforms.

In general, although the digital literacy of teachers in higher vocational colleges has a certain foundation, the overall level is low and cannot fully meet the needs of the development of modern higher vocational education. Teachers' lack of learning motivation and lack of effective training and support mechanism are the main factors affecting the improvement of digital literacy. The investment and policy support in the construction of digital education resources and the improvement of teachers' digital literacy also directly affect the level of teachers' digital literacy. To improve the digital

literacy of higher vocational teachers, it is urgent to formulate systematic improvement strategies and measures from various aspects.

### 3.2 The Main Factors Affecting the Digital Literacy of Higher Vocational Teachers

The main influencing factors of teachers' digital literacy in higher vocational colleges include the following aspects: Teachers' own lack of motivation for learning is an important reason. Many teachers lack sufficient interest and enthusiasm in learning digital technology, making it difficult for them to apply these skills effectively in their work. The lack of training and support also restricts the improvement of teachers' digital literacy. Existing training programs often lack the systematization and pertinence to meet the diverse needs of teachers. The lack of schools in resource allocation and policy support is also a key factor. Many higher vocational colleges have obvious shortcomings in the investment of digital resources and the construction of supporting facilities, which leads to the difficulty of teachers to implement digital teaching. Teachers' heavy workload makes it difficult for them to find time out to learn and improve their digital literacy. The combined action of these factors restricts the improvement of the digital literacy of higher vocational teachers, which needs to pay enough attention to it and take effective measures to solve it.

### 3.3 Case Analysis Analysis of the Causes of Low Digital Literacy

Case analysis shows that the reasons for the low digital literacy of higher vocational teachers mainly focus on the following aspects: teachers lack of motivation and interest in learning. Some teachers, due to their heavy teaching tasks and scientific research pressure, find it difficult to invest enough time and energy to improve their digital literacy. Inadequate training and support systems. At present, higher vocational colleges have limited resources in the digital literacy training of teachers, and the training content is not systematic and in-depth enough, which makes it difficult for teachers to obtain continuous and effective professional development support. Teachers' own cognition and application ability of digital technology is insufficient, and many teachers' understanding of emerging digital technology remains at a shallow level, unable to make full use of these technologies to improve teaching. School

management and policy support are insufficient, and some schools lack systematic planning and incentive mechanism for digital literacy improvement, which makes teachers lack necessary guarantee and incentive in the process of digital literacy improvement. The combination of these factors leads to the low digital literacy of higher vocational teachers, which affects the teaching quality and educational effect.

#### **4. Suggestions on Improving Path of Digital Literacy of Higher Vocational Teachers**

##### **4.1 Make a Personalized Study Plan**

Making a personalized learning plan is one of the key steps to improve the digital literacy of teachers in higher vocational colleges. The personalized learning plan should fully consider the existing digital literacy level, professional background, teaching needs and personal interests of each teacher to ensure the pertinence and effectiveness of the training content. It is necessary to conduct a comprehensive assessment of teachers' digital literacy through systematic evaluation tools, and to identify their specific needs and deficiencies in technology application, digital resource utilization and information security awareness. The evaluation results will provide a scientific basis for a customized and personalized learning plan.

When making a learning plan, the learning content and progress should be reasonably arranged in combination with teachers' daily teaching tasks and career development goals. The specific contents can include basic information technology skills training, the use of advanced data analysis tools, the operation of online teaching platform, the application of educational software and the practice of emerging technologies (such as artificial intelligence, virtual reality, etc.) in teaching. Digital literacy training related to majors should also be provided, such as engineering teachers who can strengthen the application of CAD software, and nursing teachers who can improve the use ability of electronic medical record system.

In order to ensure the implementation effect of the personalized learning plan, flexible and diverse learning forms should be adopted, including online courses, offline workshops, expert lectures, practical operations, case studies, etc., so that teachers can learn and apply them in

different situations. Full-time tutors or technical support personnel should be provided to provide teachers with individual guidance and technical support to timely solve the problems encountered in the learning process.

The formulation and implementation of the learning plan should also pay attention to the continuity and dynamic adjustment. Regularly evaluate the learning progress, collect teacher feedback, adjust and optimize the learning content and method according to the actual situation, and ensure that the learning plan always meets the needs and development direction of teachers. Through the formulation and implementation of personalized learning plans, the digital literacy of higher vocational college teachers can be effectively improved, promote their more confident and flexible use of digital technology in education and teaching, and finally achieve the overall improvement of teaching effect and education quality.

##### **4.2 Strengthen Professional Development Training**

Strengthening professional development training is one of the key strategies to improve teachers' digital literacy in higher vocational colleges. Higher vocational colleges should attach attention to the continuous professional development of teachers and improve their digital literacy by providing systematic and structured training courses. According to the actual needs of teachers of different disciplines and different positions, multi-level and diversified training contents should be designed, including the application of digital tools, the use of online teaching platforms, and the cultivation of data analysis ability, etc. The training methods should be flexible and diverse, and the combination of online and offline methods can be adopted to promote the communication and cooperation among teachers and form a good learning community. In order to ensure the training effect, the school should establish a sound training evaluation mechanism, and conduct a comprehensive evaluation of the training content, the implementation process and the final effect, so as to ensure the pertinence and effectiveness of the training. Schools should also provide teachers with the necessary support and resources, such as providing modern teaching equipment and sufficient technical support, to stimulate the enthusiasm and initiative of teachers to participate in the training.

Through effective professional development training, it can help teachers to adapt to the educational environment of the rapid development of information technology, improve the teaching efficiency, and ultimately improve the quality of education.

### **4.3 Create a Learning Organization and a Culture**

Higher vocational colleges should improve teachers' digital literacy by creating learning organizations and culture. This includes establishing a platform for teacher collaboration and communication, enabling teachers to share experiences and teaching resources and promote mutual learning and common progress. Schools should create an atmosphere that encourages innovation and continuous learning, and stimulate teachers' interest and motivation to actively learn digital technology. Regular workshops, workshops and digital skills competitions are organized to enhance teachers' mastery of digital teaching tools and methods. Provide rich digital learning resources to ensure that teachers can easily access the latest educational technology information, and continue to improve their digital literacy level.

### **6. Conclusion**

This study focuses on the path of improving the digital literacy of teachers in higher vocational colleges. Through questionnaire survey and case study, we found that the digital literacy of teachers in higher vocational colleges is generally low, which is mainly attributed to their lack of learning motivation and the lack of training and support. To address these problems, we propose a set of effective improvement paths, including making personalized learning plans, strengthening professional development training, creating a learning organization and culture, and promoting teacher self-learning strategies. These measures aim to optimize the teachers' teaching mode and improve their teaching methods, so as to improve the teaching effect. However, the study also has some limitations. First, the limited sample size may affect the universality of the conclusions. Secondly, the studies mainly focus on higher vocational colleges in specific regions, and the regional differences may have an impact on the results. In addition, the methods used in the study may have subjective bias and require

further improvement and validation. Future research can be carried out in the following aspects: first, to expand the sample size and research scope to verify the universality and reliability of conclusions; the second is to explore more factors affecting teachers' digital literacy, such as policy support and popularization of technical equipment; and the third is to further study the specific impact of teachers' digital literacy on students' learning effect and career development. In conclusion, this study not only provides a practical path and strategy for the improvement of digital literacy of teachers in higher vocational colleges, but also provides an important reference for subsequent studies. We look forward to further verification and expansion of our research results in more areas and scope in the future.

### **Acknowledgement**

This work is supported by Henan Provincial Education Science Planning 2024 General Project "Research on the Construction of Digital Literacy Evaluation System for Vocational College Teachers" Project Number: 2024YB0582

### **References**

- [1] Li Xuan. Research on the improvement path of humanistic quality of teachers in higher vocational colleges [J]. *Literary Youth*, 2019,0 (19): 0163-0163.
- [2] Miao Monroe, Xu Peng, Xu Hongying, Zhang Liying, Sun Yaping. Research on the Improvement Path of Teachers' Professional Quality in Higher Vocational Colleges [J]. *Progress: Scientific Vision*, 2021, (17): 37-38.
- [3] Ye Qing. Research on the Path of etiquette literacy of young teachers in Higher vocational colleges [J]. *Journal of Hubei Open Vocational College*, 2021,34 (14): 53-55.
- [4] Wang Jingjie. Research on improving digital Literacy of Teachers in Higher Vocational Colleges [J]. *A Guide to a Happy Life*, 2023, (39): 0004-0006.
- [5] Gao Jie. Research on the improvement path of teachers' information literacy in Higher Vocational Colleges [J]. *Liaoning Higher Vocational College*, 2020,22 (05): 75-79.