

The improvement of information literacy of higher vocational teachers under the digitalization of education

Wang Yingjie

Shaanxi Technical College of Finance and Economic, Xianyang, Shaanxi, China
wyjie@scy.cn

Abstract: Information literacy is an important component of teachers' comprehensive quality. Improving the information literacy of vocational teachers is beneficial for enhancing their own teaching and research abilities, as well as improving the teaching effectiveness of the classroom and cultivating students' information literacy. This article explores the problems in the information literacy of vocational school teachers and the methods and approaches to cultivate and improve their information literacy through a survey of their information awareness and ability in a confident environment.

Keywords: Digitalization of education; Vocational teachers; Information literacy; Upgrade Path

1. Introduction

Nowadays, with the comprehensive progress of the social environment, the field of science and technology has entered a golden period of innovation and development. The concept of "Internet+" is widely applied in various fields, and the information society was born in this context. Information technology is a product of modernization, which has fully entered people's lives from its inception to the present, greatly changing people's lives, work, learning, and production activities. This subtle change has brought about a revolution in information technology, followed by the increasingly changing technology and knowledge of information technology. In the increasingly fierce international competition environment, educational informatization, as an important component of national informatization, has attracted high attention from various countries.

The State Council proposed in the "Implementation Plan for National Vocational Education Reform" issued in January 2019 to implement the plan for the construction of high-level vocational schools and majors with Chinese characteristics. On April 1, 2019, the Ministry of Education and the Ministry of Finance jointly issued the "Opinions on Implementing the Plan for the Construction of High Level Vocational Schools and Specialities with Chinese Characteristics", which regards "improving the literacy of teachers and students and improving the level of information technology construction in universities" as an important task for reform and development. Since the formulation of the implementation plan for vocational education reform, the education department and various universities have attached great importance to the construction of educational informatization. Many vocational colleges have achieved some results in information technology teaching, such as achieving full coverage of campus networks in infrastructure, further improving multimedia teaching facilities, and producing a large number of micro courses, video resources, etc. However, there are still some problems in the process of promoting and applying these achievements, such as low enthusiasm among some teachers, boredom among students, and the need to improve software and hardware conditions. Therefore, based on the survey results of the current situation of information literacy among teachers in vocational colleges, and analyzing the problems of teachers' information literacy, we will explore ways to improve the information literacy of vocational teachers.

2. The Importance of Improving the Information Literacy of Vocational Teachers in the Context of Digital Education

Information literacy is a knowledge and ability that people should possess in the information age, and it is also a basic quality that people should possess in the information society. The concept was first

proposed by Paul, Chairman of the Information Industry Association of the United States, in 1974, which defined it as "the skill to use numerous information tools and major information resources to solve specific problems". With the advent of the information age, the connotation of information literacy is constantly enriching and developing, from the initial focus on knowledge, skills, and abilities to efficient retrieval, acquisition, integration, application, management, and evaluation of information, to the current awareness, ability, and thinking of using information technology to discover, analyze, and solve practical problems in education, teaching, work, life, and the information ethics (ethics) that should be followed when obtaining information [1]. Therefore, it is necessary to improve the information literacy of higher vocational teachers, so that they can comprehensively and accurately retrieve information, critically evaluate and screen information, communicate and share information freely, apply information innovatively and creatively, and continuously improve their information application ability, so that they can have good information literacy, so as to cultivate high-quality students in line with the construction of digital campus and vocational education and meet the need for the cultivation of talents in industry education and the need for global integration in the information age.

In addition, in the context of educational informatization, the improvement of information literacy of vocational teachers also includes the awareness of actively utilizing information technology to optimize and innovate teaching, overcoming difficulties in information technology teaching, actively learning new information technologies, improving their own cognitive level of information literacy, cultivating their awareness of lifelong learning, constantly updating educational concepts, and improving classroom teaching effectiveness. Vocational teachers should scientifically acquire, integrate, and apply teaching resources related to related disciplines, improve their teaching level and implementation ability, and also master the characteristics of online teaching mode to achieve teaching and learning anytime, anywhere, and adapt to digital, personalized, and lifelong teaching.[2] At the same time, in daily teaching practice activities, it is necessary to always have information awareness, continuously improve the ability to integrate information technology with professional skills, and continuously improve one's information literacy. [3]At present, it is necessary to improve the information literacy of higher vocational teachers, actively use information technology to efficiently obtain, manage, critically evaluate and use information, fully combine professional knowledge to integrate teaching resources, construct online courses, improve the application ability of information technology and the deep integration of education and teaching, promote the implementation of teaching informatization 2.0 and the national vocational education reform policy, ensure the smooth development of online teaching at any time under the normalization of epidemic prevention and control, and promote the improvement of the effect of teaching activities and the improvement of teaching quality. It is of great practical significance.

3. The Current Situation of Information Literacy of Vocational Teachers in the Context of Digital Education

3.1 Some teachers have weak information awareness

In the current teaching of vocational education, some teachers have relatively weak information awareness, mainly manifested in their unwillingness to learn modern educational technology theory, insufficient understanding of the practical value of information knowledge, unwillingness to actively try and research teaching software related to the subject, and even less willingness to spend time learning methods and technologies for producing high-quality courseware, micro courses, and resource libraries. Only when participating in various information technology competitions will simple information technology methods be used to integrate with subject teaching, and information technology is rarely used in ordinary teaching.

3.2 Some teachers have weak information skills

On the one hand, some teachers have a low level of information design and production. The level of information literacy of teachers can be fully reflected in their application of information technology. Some teachers lack the experience of independently creating online and micro courses, and their enthusiasm and initiative to participate in the production are not high. The main reasons are lack of ability and low information literacy. For this situation, vocational colleges and teachers must pay attention to and change it; On the other hand, some teachers have limited access to information technology, making it difficult to switch between online and offline. In vocational education teaching,

some teachers often use information technology for routine management such as online attendance and homework assignments, but the frequency of using it for online teaching, online testing, and simulation training is not high. This indicates that these teachers have not fully utilized the effectiveness of information technology to implement teaching, with a shallow level of use and a narrow scope of use. The reason for this is that teachers are not proficient in switching between online and offline, or have a fear of trouble.

3.3 Some teachers have insufficient integration ability

In current vocational education teaching, some teachers lack the ability to integrate information technology and curriculum, mainly manifested in the low utilization rate of teaching platforms and resource libraries. Teaching platforms such as Chaoxing Fanya and China University Muke are currently widely used in vocational colleges. However, some teachers only have a superficial understanding and do not realize the role of these platforms in assisting teaching. Therefore, they still prefer to use PPT and blackboard writing for regular teaching. In addition, these teachers rarely use the excellent teaching resource library on online platforms, or even do not use it. Even if used, it is only for the purpose of completing the tasks assigned by the school and will not proactively update, lacking the awareness of supplementing new resources.

3.4 Insufficient training for teachers

Informatization is an inevitable trend in today's social development, and it is necessary for teachers to carry out information technology training. Schools should regularly carry out information technology course training, exchange discussions, practical operations, and other activities, encourage teachers to participate in information technology teaching competitions, and enhance their information technology level in various forms to promote their professional development and enable them to meet the new requirements of the new era for teachers. However, some schools have not realized the importance of providing information technology training for teachers, and have rarely conducted relevant training, which cannot meet the needs of teachers' professional development.

4. The Path to Improve the Information Literacy of Vocational Teachers in the Context of Digital Education

With the development of information technology, conducting online education has put forward higher requirements for the information literacy of vocational teachers. The deep integration of information technology with education and teaching has become a requirement during the current education informatization and epidemic prevention and control period, as well as in the long term in the future. Therefore, in response to the current situation of information literacy among vocational college teachers, the following aspects can be taken to improve their information literacy.

4.1 Innovative training mode, layered and classified construction of teacher information literacy training system

Through research, it can be seen from the use of digital resources that the awareness of information literacy among vocational teachers has been continuously improving. However, based on the problems encountered in online teaching during the epidemic prevention and control period, there are significant differences in the level of information skills among teachers, even among teachers in the same profession, the level of informatization is not the same. Therefore, vocational colleges should do a good job in improving teacher information literacy training. Before training, research should be conducted to develop appropriate training content and plans based on the information needs of teachers, and implementation should be carried out in different levels and stages.

4.1.1 Strengthen theoretical training on information literacy for new teachers

For example, digital resource training is aimed at newly hired teachers and some teachers who do not usually use multimedia in class. They are not familiar with the school's digital resources and should be introduced to all digital resource libraries during the training to improve their information awareness and basic operational skills, so that they know which digital resources can be utilized.

4.1.2 Improve teacher information literacy skills training

For teachers with a certain level of information knowledge, according to the teacher's teaching schedule, a weekly database retrieval skills training will be conducted, introducing techniques such as one-stop search, advanced search, professional search, cross database search, and resource integration, to help teachers quickly retrieve the required resources such as journals, conferences, videos, cases, standards, etc.

4.1.3 Improve teacher information literacy practical training

In order to adapt to online teaching, teachers are provided with specialized training on resource production, such as courseware production, PPT design, micro lesson production techniques, and micro video production techniques, in order to improve their teaching resource design skills. Based on the characteristics of online teaching, training can also be conducted on the operational skills of the online teaching tool Chaoxing Learning Tong and the use of the Chaoxing live streaming client. Detailed explanations and guidance can be provided on how to build courses, course management, class activities, and teacher-student interaction modules, improving teachers' ability to deeply integrate information tools with education and teaching.

4.1.4 Conduct specialized training on teacher information literacy seminars

Schools should organize specialized training on improving teaching ability and online high-quality course construction, create a structured teaching team, establish new course construction and development concepts, explore new teaching methods, improve teaching quality, form more teaching results, and enhance teachers' teaching ability and level. Online teaching has also innovated the training mode. Online training can be conducted through live streaming, recording, and online Q&A sessions. The training content can also be viewed and replayed, and teachers can learn independently if they have knowledge they do not understand, making the training systematic. In short, by conducting various forms of training such as seminar based, skill based, practical, and theoretical training, we strive to gain knowledge and improve information literacy skills for teachers from different majors and disciplines while providing training, operation, guidance, and answering questions. At the same time, through training, we will strengthen the awareness of vocational teachers in obtaining high-quality information, establish new educational and teaching concepts, improve their educational informatization capabilities, and deepen the deep integration of information technology and education and teaching.

4.2 Improve the incentive and evaluation system, comprehensively and consciously enhance teachers' information literacy

At present, the Ministry of Education requires all schools to continue to carry out educational informationization teaching application practice, continue to do a good job in teacher informationization training, and comprehensively improve teachers' information literacy. The application of information technology in teaching cannot be achieved overnight, and teachers need to spend a lot of energy researching and learning. In the process of practice, they will encounter various problems. Teachers need great courage and confidence to persist, and this reform will be effective. We should establish and improve incentive and evaluation systems through various means based on the actual situation of the school, combining teachers' information literacy abilities with various evaluation activities, and promoting teachers to consciously and comprehensively improve their information literacy. One is that for teachers who participate in information technology training, their training hours can be counted as continuing education hours, and if they pass the assessment, they will be issued a corresponding level of qualification certificate. Secondly, in the teaching process, teachers apply information technology to teaching, and their teaching evaluation and teaching quality award evaluation occupy a considerable weight. The third is to combine information technology capabilities with the evaluation and appointment of professional titles that teachers are most concerned about, as an important basis for evaluation and promotion, attracting high attention from teachers and promoting their conscious improvement of information literacy.

4.3 Strengthen the construction of information based teaching resources

The prerequisite for vocational colleges to carry out information based classroom teaching is to have abundant information based teaching resources. Schools should select suitable teaching platforms and integrate them into a unified platform. When using different platforms, teachers and students only

need to log in to one network interface or use one app, use one set of accounts and passwords, and avoid the troubles caused by multiple platforms for teachers and students. Teachers should also be encouraged to maximize the use of these platforms in the classroom teaching process for course teaching. Without a stable network and high-quality multimedia supporting equipment in schools, there is no room for teachers to carry out information-based teaching. We need to overcome difficulties to fully cover the campus network and eliminate outdated multimedia teaching equipment. By establishing various smart classrooms, virtual simulation laboratories, and information-based teaching platforms, we aim to expand students' learning time and space, and provide hardware equipment and efficient network resources required for information-based classroom teaching.

4.4 Encourage teachers to enhance their information literacy in the process of school enterprise cooperation

Schools should combine the goal of digital education construction and carry out various training related to improving teachers' information literacy based on their actual needs. Vocational colleges should also strengthen the use of enterprises for teacher training and encourage teachers to practice in enterprises. Excellent school enterprise cooperative enterprises can provide a good training platform for vocational teachers. Enterprises are important training bases for teachers to enhance their theoretical knowledge and practical abilities. Teachers fully experience the working environment of enterprises in production practice, understand new technologies and concepts of enterprises, and improve their comprehensive quality and professional ability. Teachers should be guided to make reasonable use of information technology teaching methods on the basis of imparting practical livelihood skills and professional qualities to students. Vocational colleges should develop systematic training plans to send relevant teachers to leading universities or institutions in information literacy education for professional learning and information exchange, in order to improve the level of teacher information technology teaching.

At the same time, it is necessary to fully leverage the role of experienced senior teachers and professional leaders in teaching, and provide guidance and training in various forms such as teaching concepts, curriculum design, teaching informatization, and curriculum resource development to young teachers, in order to help them improve their professional skills. On the basis of actively conducting internal and external training, teachers should also be encouraged to learn information literacy related courses through online platforms, in order to grasp cutting-edge trends, grasp the direction of information literacy development, and improve personal information literacy. Schools can also invite experts from industry enterprises and information technology teaching ability competitions to give lectures and interact with teachers to improve their information literacy level.

4.5 Various measures to enhance teachers' information literacy

Firstly, promote practice through competition. Schools should encourage teachers to actively participate in various information technology teaching competitions, improve their skills through practice, and achieve professional development. The information technology competition is an important means to improve teachers' information technology teaching ability and promote the development of information technology majors. By participating, teachers can not only broaden their horizons, but also improve their information technology level, thereby achieving professional development; Secondly, use to promote learning. Teachers should learn to collect, filter, and use information, and schools should provide various online resources such as China National Knowledge Infrastructure (CNKI), specialized websites, and resource library platforms for teachers to use. Finally, individual coaching. In response to the current situation of information technology backwardness among some teachers, schools can invite experts and scholars to give lectures and provide face-to-face guidance to eliminate teachers' rejection and fear of information teaching technology.

5. Conclusions

Teachers in vocational colleges are the true practitioners of information technology education in vocational colleges. By utilizing various forms of online teaching, traditional teaching models have been changed, leading to significant changes in educational forms and learning methods, and truly promoting the implementation of educational informatization. Faced with the wave of educational informatization, the application of information technology, in-depth development and utilization of information resources, and the improvement of information literacy of vocational teachers are urgently

needed. This is crucial for deepening educational reform and improving educational quality. Improving the information literacy of vocational teachers is not an overnight task. It requires various aspects of organization, coordination, protection, support, and cultivation, as well as national policy support, school guidance, and self-improvement awareness. Vocational teachers should actively adapt to the development of educational informatization, establish the concept of lifelong learning, comprehensively improve information literacy, and promote educational modernization.

References

[1] Hou Xiaojun, Liu Yanshen, Lu Eryun. *Analysis and Improvement Measures for Information Literacy of Vocational College Teachers from the Perspective of the Epidemic: Based on the Monitoring and Operation Data Analysis of 203 National Vocational Education Professional Teaching Resource Libraries* [J]. *Jiangsu Vocational Education*, 2020,20 (02): 1-7.

[2] Zheng Shizhen, Meng Suhua, Deng Xiaoli, et al. *Strategies for improving information literacy of teachers in higher vocational colleges in the context of "Internet plus"* [J]. *Guangxi Education*, 2019 (31): 86-87,111.

[3] Liu Li. *On the Improvement of Information Literacy of Vocational Teachers* [J]. *Hunan Education (C Edition)*, 2021 (05): 37-39.