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Strategies for improving information literacy of secondary vocational teachers

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Abstract
In the background of current information education, information literacy has become an important factor affecting teachers' teaching effect. It is necessary to cultivate the information literacy of secondary vocational teachers: First, it is the requirement of the development of students in the new era; Second, the requirements of the development of educational ideas; the third is the realistic requirement of the development of secondary vocational teachers themselves. However, many secondary vocational teachers' information literacy is not high, which is embodied in information application, information awareness, school level and teaching resources. Vocational education bears the responsibility of providing talents for the society. Therefore, teachers' information application ability can be improved by using multiple strategies. Renew the idea, cultivate the teacher's information consciousness; optimize the school information resources and environment; Establish teaching resource database, carry out inter-school cooperation to strengthen the training of information literacy of secondary vocational teachers, and improve their cognition of information technology and digital teaching.

Keywords: Secondary vocational teachers, information literacy, promotion

1. Introduction
With the rapid development of information technology, information literacy has become an indispensable ability in today's society, and it is also one of the essential basic qualities of secondary vocational teachers. Secondary vocational education should not only provide high-quality skilled personnel for the society, but also provide qualified students for high-level vocational colleges. This requires secondary vocational teachers to enhance their professional knowledge and skills, use information technology to cultivate their comprehensive quality, enrich subject knowledge and information resources, and strive to "double-qualified" standards [1]. At present, Chinese scholars' research on teachers' information literacy mainly focuses on primary and secondary school teachers, and less on secondary vocational teachers' information literacy. Therefore, it is necessary to study the information literacy of secondary vocational teachers.

2. Research Overview
2.1 Research on the influencing factors of information literacy of secondary vocational teachers
Wang Lanlan, Li Hongbo *et al.* (2023) conducted a questionnaire survey on teachers in 9 secondary vocational schools in Nanning and Guilin, Guangxi Province, and the results showed that the information awareness of secondary vocational teachers in Guangxi was relatively high, and the teaching age and educational background of teachers were both important factors affecting the information literacy of teachers. The higher the educational background, the higher [2] Ma Peizhong (2019) conducted a survey on a certain secondary vocational school and found that the factors affecting the information shortage of secondary vocational teachers are as follows: some teachers lack the correct cognition of information technology theories and think that school training is just a formality; A small number of senior teachers do not pay attention to Internet technology and lack information consciousness [3]. Hong Wei (2019) conducted a questionnaire survey on the information literacy of teachers in five secondary vocational schools in Siping City, Jilin Province.

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The survey results showed that the complexity of multimedia training content, the initiative of secondary vocational teachers to research teaching aid software and the lack of practice of middle and high-end information technology software were the main factors [4].

2.2 Research on improving information literacy of secondary vocational teachers from the perspective of professional disciplines

Under the background of education informatization 2.0, according to the characteristics of different disciplines, some discipline teachers have carried out research on the information literacy of teachers in their respective disciplines. Xie Pingfang (2021) believes that secondary vocational mathematics teachers should not only possess basic information literacy, but also multimedia literacy and network literacy. In order to improve the information literacy of mathematics teachers, schools can carry out targeted training and interaction according to the actual informatization needs of mathematics teachers; To carry out mathematics experiment teaching, constantly carry out bold association and necessary mathematics experiment demonstration, and enhance the innovation consciousness of mathematics teachers; They should also take the initiative to absorb the concept of information technology and improve their awareness of information [5]. Huang Yongxiu (2015) proposed to carry out the special training of information technology in Chinese teachers in multiple forms and channels, aiming at the problems such as the urgent need to improve the application ability and information technology literacy of secondary vocational and part-time Chinese teachers and the need for multidimensional training. Strengthen the application of information technology in daily teaching; strengthen the training of double-qualified teachers; the establishment of cross-district, cross-professional and multi-dimensional teacher exchange platform and other suggestions [6].

The research on information literacy from the perspective of discipline is not only the implementation and realization of the research on information literacy of teachers in this discipline, but also enriches the vision and depth [7] of teachers' information literacy. According to the needs of teachers, it can be regarded as an effective strategy to improve teachers' information literacy to carry out targeted training interaction and strengthen the training of double-qualified teachers. In the digital age, students need to have higher digital literacy and skills, master advanced technologies and tools, in order to better cope with future challenges. Therefore, it is more necessary to strengthen teachers' information literacy in order to better cultivate students' information literacy.

3. The policy requirements for the development of information literacy of secondary vocational teachers

National policies provide support and guarantee for the vigorous development of vocational education informatization. State departments at all levels have issued a series of policy documents. " The'13th Five Year Plan' for Education Informatization" issued in 2016 proposes to actively use cloud computing, big data and other new technologies to train teachers' ability to carry out learning situation analysis and personalized teaching by using information technology. Enhance teachers' ability to innovate education and teaching in the information environment, and make information teaching truly become the norm [8] of teachers' teaching activities. The Education Informatization 2.0 Action Plan issued in 2018 actively promotes "Internet + education", adheres to the core concept of deep integration of information technology and education and teaching, vigorously improves teachers' information literacy, and continues to carry out training [8] The above policy documents are based on promoting education informatization, improving teachers' information literacy, and improving teachers' ability to deeply integrate information technology into education and teaching. At the same time, they also pay attention to improving students' information literacy and cultivating students' informatization application ability and innovation ability.

4. The necessity of improving information literacy of secondary vocational teachers
4.1 Requirements for student development in the new era

With the rapid development of information technology, the society's demand for talents has become more diversified, which puts forward higher requirements for personnel training and teachers' information-based teaching. And the four pillars of future education are: learn to recognize, learn to do things, learn to get along with people, and learn to develop. Such training objectives require teachers to improve information literacy, promote the deep integration of information knowledge, technology and teaching, and enable students to form an international thinking concept and freely and actively seek development [1]. In addition, students not only need to have innovative thinking and creativity, but also need to master the ability to use information technology, strengthen their comprehensive ability, so as to enhance employment competitiveness and position competitive advantage to meet the needs of social development. As the guide of students, secondary vocational teachers must have information literacy in order to guide students to think creatively and cultivate their creativity. Only in this way can students be better guided to study, practice, cultivate their self-learning ability and continuous learning awareness, promote students' all-round development and future career development, and effectively improve students' information literacy so that students can have stronger competitiveness in the information age to meet the requirements of students' development in the new era.

4.2 Requirements for the development of educational concepts

In the information age, "Internet plus" and education continue to integrate, and information technology continues to be integrated into classroom teaching, promoting the reform of traditional teaching mode, and playing an important role in promoting teaching. Firstly, information-based teaching can expand teaching resources and means, enrich teaching content and form, and promote the modernization of education and teaching. All these reflect the transformation of educational ideas and the innovation of teachers' teaching methods.

Secondly, it can improve the efficiency and quality of education and teaching, improve students' learning interest and enthusiasm, and stimulate students' independent learning and innovative thinking. Moreover, information-based teaching can also promote the professional growth of

teachers. Through the sharing of teaching platforms and resources, teachers can better communicate and cooperate, improve their own teaching level and quality, and constantly update teaching ideas and methods to make them better teachers. Finally, the introduction of "Internet +" thinking in secondary vocational education can play a good guiding role in the development of secondary vocational education, so that the development of secondary vocational education always keeps up with the reality, ADAPTS to the market demand, and trains more high-quality talents to adapt to the development of society and the industry, which is also the ideological practice of education concept. Therefore, teachers should respond to the requirements of the development of The Times and improve their information literacy.

4.3 The realistic requirements of secondary vocational teachers' own development

With the rapid development of science and technology, the digital age has become a reality. Secondary vocational teachers need to constantly update their knowledge and skills, keep up with the trend of The Times, master advanced educational technology and teaching methods, and constantly improve their professional skills and teaching level, so as to improve the quality of education and teaching, and take training high-quality talents to meet the needs of society as their own responsibility. Modern students have increasingly high demand for information and technology. Without good information literacy, it is difficult for secondary vocational teachers to meet the needs of students and establish effective communication and interaction with them. Secondary vocational teachers can obtain more teaching resources and teaching methods through the Internet and other digital tools, strengthen the deep integration of information technology and curriculum, and promote the ability of education innovation, so as to provide more rich and diversified teaching manifestations. In the first half of 2020, due to the impact of the COVID-19 epidemic, the state called for "stopping classes and teaching without stopping". Many schools have adopted online teaching mode, and teachers have begun to use Internet platforms such as Dingding APP and Tencent Conference to conduct online teaching. This reflects the requirement for teachers' information literacy, and at the same time promotes their professional development and education and teaching ability in the information age. Therefore, secondary vocational teachers need to continuously improve their own information literacy, so as to better adapt to the trend of education informatization, dig deep into the application value of information technology in teaching, so as to better serve the personalized learning needs of students and improve the quality and efficiency of education and teaching.

5. Issues related to information literacy of secondary vocational teachers

5.1 In the application of information

The important embodiment of education informatization is the deep integration of information technology and teaching, so as to change the traditional teaching methods and models, and cultivate informatization talents who meet the needs of modern society. Teachers need to have high information application ability, make reasonable use of information technology to assist teaching, and provide higher quality

teaching effect. However, most secondary vocational teachers have low information application ability. First of all, secondary vocational teachers lack in-depth understanding and application ability of information technology. Simply using ppt, word and other commonly used office software to make courseware and apply it to teaching, it is difficult to deeply integrate information technology with classroom teaching, and they lack innovation ability. They have little understanding of web design and image processing software such as Webstorm, Vscode and Photoshop. Secondly, some secondary vocational teachers are not familiar with the use of information technology tools. Such as electronic whiteboard, online learning platform, educational application, etc. They cannot use these tools to carry out teaching activities such as classroom display, student homework management, online discussion, etc., which limits the application effect of information technology in teaching. In addition, due to the rapid update and iteration of information technology, some teachers may not be able to keep up with the latest technological developments due to time and ability, which will also affect their application and mastery of information technology. Therefore, secondary vocational teachers need to expand and constantly learn and update their skills and knowledge. In the era of digital education, mastering these software can help teachers better innovate teaching, improve classroom effects, and stimulate students' interest and enthusiasm in learning.

5.2 In terms of information awareness

At present, some secondary vocational teachers in our country have weak information awareness. Although many teachers have a high recognition of information education and believe that integrating information technology into the classroom can improve students' learning interest, they only stay at the surface of acquiring information and do not give full play to the role of information technology in changing traditional teaching mode and stimulating students' learning interest. First, the secondary vocational teachers' understanding and mastery of information technology are not enough. Some teachers are unwilling to update their teaching ideas and methods, believing that their traditional teaching methods are already effective enough. Taking a secondary vocational school in Guizhou as an example, most of the students said that the teachers in the computer practical operation class also repeated the textbook content or the PPT content made each time; Secondly, the teacher demonstrated the operation steps to the students through the computer; Then let the students themselves to operate; And finally summarize what they have learned in this lesson. By the end of the course, students only know what software is used in this course, but they lack a deep understanding of the specific functions of the software. Second, it is reflected in the integration of information technology and curriculum teaching. Most secondary vocational teachers do not realize the importance of information technology and teaching integration, and will not take the initiative to study how to use information technology to improve the teaching effect of specific subjects.

5.3 At the school level

First, it is reflected in the construction of information-based teaching environment. Due to capital, technology and other reasons, most secondary vocational schools have little

investment in hardware and software resources of modern education technology, resulting in relatively backward teaching facilities and teachers' inability to meet the needs of daily teaching and scientific research. Such as the small number of computers, coupled with the damage of the situation, resulting in two or three students in the computer operation class to share a computer, not only affect the learning efficiency of students, but also affect the professional quality of teachers development. Second, it is reflected in the teacher information technology training. First of all, schools have less training for teachers' information literacy, and most secondary vocational schools pay more attention to the training of teachers' professional ability. As a result, teachers lack correct cognition of theoretical knowledge of information technology, lack in-depth understanding of emerging technologies and applications, and cannot be effectively applied in teaching practice, resulting in the lack of information literacy ability of secondary vocational teachers.

Secondly, in terms of training methods, the existing training is in the form of centralized training, which does not take into account the needs and learning styles of different teachers. For example, for some teachers who are older or do not have a computer background, there may be a need for more intuitive and basic training methods rather than overly theoretical teaching. Again, there is a lack of post-training instruction. The existing training does not give teachers enough time to digest and apply what they have learned, and some teachers need extra time to adapt to the new skills they have acquired before they can apply them to practical teaching. This requires the provision of post-training guidance in order to solve the difficulties encountered by teachers in practical teaching.

5.4 At the level of teaching resources

First, in economically backward areas, secondary vocational schools are relatively short of digital resources, such as digital books, teaching software, online courses and so on. As a result, many teachers can only use simple PPT and recorded videos for teaching, which cannot meet the diversified learning needs of students and affects the teaching quality and effect, which also limits the development of information literacy of secondary vocational teachers. Secondly, the lack of teaching resource sharing platform makes it difficult for teachers to obtain high-quality teaching resources and exchange and share teaching ideas. In addition, many secondary vocational schools set up general vocational exchange classes, attach importance to the teaching of cultural courses, and ignore the teaching of information technology, which will inevitably affect the development of information literacy of secondary vocational teachers.

6. Secondary vocational teachers information literacy promotion strategy
6.1 Use multiple strategies to improve teachers' information application ability

First, provide diversified training for secondary vocational teachers. Before the training is carried out, schools can understand the needs of teachers for information technology through questionnaires, interviews and other ways, and formulate corresponding training plans and course contents according to the survey results, so as to ensure that teachers can learn practical knowledge and skills in the training,

improve the application ability of information technology and education and teaching level, and provide students with better education services. In addition, the training content can include the basic operation of information technology, the use of teaching software, courseware production and so on. During the training, it can be divided into groups according to inter-group heterogeneity and intra-group homogeneity, so that each teacher can comprehensively improve his or her information technology level. In addition, post-training technical guidance is provided to teachers, such as regular tutoring sessions and online resources to provide solutions tailored to the needs of individual teachers. In order for teachers to better integrate information technology into curriculum teaching.

 For example, Chinese teachers in secondary vocational schools are weak in the production of micro-lessons, so they can strengthen the training and guidance of teachers in the production of micro-lessons with software to improve their skills.

Secondly, the teaching informationization competition should be carried out. Regular organization of teaching informationization competition, such as: secondary vocational teachers information literacy quality course competition, the content of the competition includes courseware, micro lesson production and so on. Encourage teachers to use information technology to innovate teaching methods and promote the modernization of education and teaching. This can not only stimulate teachers' innovative consciousness and teaching enthusiasm, but also enhance students' learning interest and comprehensive quality. At the same time, through the development of teaching informatization competition, excellent teachers can be found and cultivated in time, injecting new vitality and impetus into the cause of education. To this end, education departments at all levels should attach great importance to the teaching informationization competition, and increase the training and support for teachers in the application of information technology. Only by comprehensively promoting the deep integration of information technology and education and teaching can we truly realize the goal of educational modernization.

6.2 Updating ideas and cultivating teachers' awareness of information

The concept of education is the core of education. To cultivate the information literacy of secondary vocational teachers, it is necessary to update the traditional concept of education. First of all, school leaders and educational administration departments should strengthen the publicity of information literacy, so that teachers can realize the importance of information technology for education and teaching, and realize their own shortcomings in information literacy. For example, regular seminars and online training should be held. Secondly, secondary vocational teachers themselves should keep up with the pace of development of The Times, timely understand the new vocational skills and teaching methods, and constantly improve their professional quality. Thirdly, promote the integration of information technology and curriculum teaching, encourage teachers to explore the information teaching mode, carry out innovative teaching design and teaching activities, and use information technology to improve the teaching effect. In addition, secondary vocational teachers should realize the importance and application value of information technology to

vocational education from the ideological perspective, and pay attention to the cultivation of information literacy.

For example, through the online teaching platform, teachers can interact and communicate with students at any time, carry out personalized teaching, and meet the different learning needs of students. At the same time, teachers can also use technology tools to collect students' learning data, timely understand students' learning progress and difficulties, provide personalized guidance and feedback to students, and promote their learning and growth.

6.3 Optimize the school information resources and environment

First of all, make full use of the existing information technology facilities, and constantly update and upgrade the hardware equipment in the classroom, including computers, projectors, interactive whiteboards, etc., to ensure the smooth progress of the teaching process. Secondly, improve the school network environment, improve the stability and bandwidth of the network, so that students and teachers can efficiently carry out online learning and teaching. In addition, digital resources of school libraries, including electronic books, online journals and databases, should be built to enrich students' learning resources. Cooperation with Internet enterprises and technology companies should also be strengthened to introduce advanced educational technologies and platforms and provide more educational resources and learning tools to enrich students' learning experience and cultivate their information literacy and innovation capabilities. Then, digital teaching resources should be enriched, and teachers should be encouraged to make high-quality digital teaching resources, such as electronic teaching plans and online courses, and design innovative teaching models and course content to improve students' learning effects and meet the needs of different students. At the same time, training and guidance for teachers should be strengthened to help them make better use of digital teaching resources for teaching. Through teacher training and guidance, teachers can learn how to effectively integrate digital teaching resources into classroom teaching. In addition, advanced educational technologies and tools can be introduced through cooperation with technology companies to provide students with more diversified and personalized learning styles and foster their creativity and problem-solving skills.

6.4 Establish a teaching resource bank and carry out inter-school cooperation

The establishment of a school resource database can fully realize the sharing of teaching resources. Secondary vocational teachers can set up their own personalized teaching resource database and upload high-quality courseware and videos for other teachers to learn and reference. In addition, they can enhance their information technology skills [10] by using the teaching software resources developed by some professional and technical personnel provided by the school and suitable for the development of vocational education teaching. Finally, secondary vocational schools in economically underdeveloped areas can cooperate with schools in economically developed areas to share educational resources through the learning sharing platform, promote the sharing and interconnection of educational resources, narrow the gap of regional teachers' information literacy, improve the

teaching quality of secondary vocational schools and teachers' teaching level, and provide students with better educational resources and teaching services.

For example, by using the Internet and video conferencing, students can have access to the teaching content and experience of excellent teachers from other schools. At the same time, training courses and seminars for teachers can be organized, and education experts from economically developed areas can be invited to secondary vocational schools for guidance and exchange, so as to promote the updating and upgrading of teachers' educational concepts. In this way, the geographical restrictions can be broken, the educational resources of secondary vocational schools can be enriched, and students can be exposed to a broader educational world, and their comprehensive quality and competitiveness can be improved.

7. Conclusion

In the era of education information, secondary vocational teachers themselves need to keep up with the trend of The Times, constantly learn to master new information technology, update educational concepts, timely understand the policy of education information technology, pay attention to the latest development trend in the field of education information technology, improve the integration ability of information technology and curriculum teaching, so as to adapt to the ever-changing educational environment and improve the quality of education and teaching; In addition, schools should also optimize the information resource environment, establish a teaching resource library, provide more education information platforms and tools for teachers, improve their information teaching ability, and actively promote the development of education information in secondary vocational schools.

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