

# *Research on the Information Literacy Education Mode for Higher Vocational College Students*

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**Abstract:** Information literacy, as a meta-literacy of vocational literacy, provides basic skills for career development, and is a key factor for future career success of vocational college students. Therefore, higher vocational colleges should take cultivating qualified citizens, highly skilled talents and entrepreneurs in the information age as the progressive step goal. Based on it, the colleges should carefully design education and teaching activities. They also actively practice the “four integration” education mode of integrating information literacy education with professional education, integrating education situation with workplace situation, integrating learning task with workplace task, and integrating learning mode with working mode.

## **1. Introduction**

In the era of mobile Internet, the degree of digitalization of human work, study and life is getting higher and higher, and big data is constantly rewriting human social life style. Information literacy has become a necessary basis for individuals to adapt to the needs of study, work and life in the information society (Zhong Zhixian, 2013), and it is also one of the core qualities of citizens in the information society (Chu Hongqi, 2016). Nowadays, whether it is job acquisition, job adaptation, or job migration, all require professionals to have high information literacy. Therefore, to carry out information literacy education for higher vocational college students is not only the basic requirement of “general education” goal of cultivating qualified citizens in the information society, but also the basic requirement of “occupation” education goal of higher vocational education, which is of great significance and urgency. Therefore, higher vocational colleges need to pay more attention to the linkage effect among information technology revolution of the information society, the industrial upgrading and professional development. The colleges should also attach importance to and explore the students' information literacy education with the perspective of career management, insight into the current information literacy education in higher vocational colleges facing the challenges and opportunities, explore the effective path. To solve the above problems, it is necessary to extend the information literacy education in colleges and universities to the field of vocational ability demand of industries and enterprises, and design the goal and realization path of information literacy education on the basis of exploring the relationship between information literacy and career management.

## **2. The Relationship between Career Development and Information Literacy**

The deepening development of information technology makes human society step into the era of big data. Digital, intelligent catalytic industry, agriculture, service industry and other industries continue to upgrade. New industries and new forms of business constantly emerge. That leads to changes in occupational forms. Therefore, in order to understand and adapt to the requirements of future career development, it is necessary for employees to have the ability of screening, identifying, processing and creative application of massive data information. That is, to have superb information literacy ability. To improve the information literacy of professionals is an inevitable requirement to adapt to the development of career.

(1) Information literacy is the “meta-literacy” of vocational literacy

The concept of “Meta-literacy” was formally proposed by Mackey in 2011, which defining information literacy as meta-literacy and enriched with new connotations (Mackey. T. P & Jacobson. T, 2010). Meta-literacy is defined as a comprehensive framework, in which people, as information consumers and information creators, acquire, produce and share information through social media and online communities in a collaborative network environment, which can improve people's critical thinking and cooperation ability in the digital age (Yang Helin, 2015). Meta-literacy is the literacy that promotes other literacy (Liu Caie & Feng Sujie, 2015). Therefore, information literacy is not only a skill for people to participate in information activities, but also the consciousness, cognition, attitude and way of thinking that guide people to participate in information activities, especially metacognition, or critical self-reflection (Fu Shaohong & Gao Ran, 2016). This is crucial to deal with the rapidly changing information ecosystem in the information age.

In the information age, the workplace is a dynamic and complex information ecosystem. Every individual wants to be in a better ecological niche in the system, so he should be able to continuously obtain, understand and use workplace information, participate in various workplace activities with correct attitude, emotion, code of conduct and ethics; He should able to cooperate and share something effectively and critically reflect on and think creatively about various types of workplace information. These professional qualities of individuals are essentially the presentation of their information literacy. Therefore, information literacy is a meta-literacy of professional literacy and a basic “IQ” activity that is internalized for everyone.

(2) Information skills are the basic ability of career development

Career development usually includes career acquisition, career adaptation and career migration. Successful career development requires individuals to :(1) actively collect information, objectively analyze their current situation, clarify their career goals and preferences, and understand the advantages and disadvantages in terms of their knowledge and skills; (2) actively understand the career change trend brought by industrial upgrading, make objective analysis and judgment on the employment situation and career value, find employment opportunities, connect with their career goals, and take the initiative to adjust their career planning; (3) be able to take the initiative to understand the transformation of digital intelligence in related industries, understand the change of career demand, take the initiative to learn about their knowledge and ability deficiencies, invest in their career, and accumulate valuable human capital; (4) actively understand the internal and external cooperation and communication relations in the operation of enterprises in the era of big data, understand the datalized communication, and proactively accumulate good internal and external social network resources.

In order to achieve the above four requirements, individuals need to be able to formulate retrieval strategies to collect relevant information, judge the authority, value and context of information, analyze and integrate the collected information, extract valuable information from it, and make their own choices under the influence of critical and creative thinking. This is the specific performance of the information skills of the professional. Therefore, only those with good information literacy can make better use of information software and analysis technology to think

independently on the collected career information and make quick and effective decisions, so as to improve their ability to adapt to the workplace and career migration.

### **3. The Goal of Information Literacy Education in Higher Vocational Colleges in the Information Age**

In the information age, whether vocational or educational, higher vocational education requires the cultivated talents to have superb information literacy. Information literacy has become the general literacy in higher vocational education and is a meta-literacy that higher vocational graduates should have. Through information literacy education, higher vocational colleges should achieve three goals at increasing levels:

(1) Cultivate qualified citizens who can support themselves in the information age

Information literacy is the basic requirement of qualified citizens in the information age. It is necessary for the qualified citizens of the information age who master certain information knowledge and skill, can through the Internet searching and screening of the necessary information, use information technology to the necessary information processing to solve in our life, study and work with various problems encountered in the code of conduct and abide by the information society, laws, regulations and ethics. This is a sign that individuals have basic survival ability in the information society.

(2) Cultivate highly skilled talents with professional competitiveness in the information age

With the arrival of the information age, big data and artificial intelligence have become important forces driving economic development, and data information has become the most important factor of production. Not only the Internet industry, traditional agriculture, industry and service industry are also becoming digital and intelligent under the transformation of information technology. Only those who have a strong awareness of data information, master superb data information analysis ability, creative use of information technology to solve all kinds of problems in the field of work will have strong professional competitiveness. Therefore, the information literacy level of higher vocational college students will be the basis and prerequisite of their future career competitiveness.

(3) Cultivate outstanding entrepreneurs in the information age

In the information age, huge amounts of data can be analyzed to create products and services bringing with great value. Big data is the source for people to acquire new cognition and create new value. "Once people's thinking is changed, data can be skillfully used to stimulate new products and new services"(Victor Mayer Schoenberg & Kenneth kukyer, 2013). However, only those with data awareness, data analysis tools, data analysis skills, and critical thinking skills will be able to see the opportunities big data presents to entrepreneurs. Therefore, training excellent entrepreneurs is the higher order goal of information literacy education in higher vocational colleges.

### **4. The Construction of "Four Integration" Information Literacy Education Model**

The cultivation of information literacy is actually a learning process of higher vocational college students' information consciousness, information knowledge, information skills and information ethics through planned teaching activities. Constructivism cognitive theory holds that learning is a process of actively constructing knowledge. Among them, individual constructivism holds that individuals construct knowledge by using cognitive processing to acquire knowledge from experience, rather than by memorizing facts provided by others. Social constructivism believes that individuals construct knowledge through the interaction between the knowledge they introduce into a certain context and the social/cultural exchange in that context (Lisa Bolin et al.,2018). Therefore, the best way to learn is to learn knowledge by doing it repeatedly in real situations. Based on this,

this study puts forward the “four integration” information literacy education model, that is, information literacy education should be integrated with professional literacy education, education situation should be integrated with workplace situation, learning task should be integrated with workplace task, learning mode should be integrated with work mode. Among them, the core is the integration of information literacy education and professional literacy education.

(1) Teaching content: Integrate information literacy education with professional literacy education

In recent years, information literacy education has been highly valued by the government and university libraries, but the attention of professional educators in universities is far from enough, and libraries are still the main force of information literacy education in universities. Although more and more scholars have proposed that information literacy education should be embedded in professional education (Qian Caiping, 2020). But the real embedding is far from beginning. Library-led information literacy education tends to take scientific research ability as the main training goal, scientific literature retrieval and integration as the main content, and scientific literature database retrieval and retrieval software as the main methods and means. However, the professionalism of higher vocational colleges is mainly reflected in professional education, and training vocational competence is the main goal of professional education. The information literacy education in higher vocational colleges should take vocational ability training as the main training target, and take searching industrial development, enterprise operation or workplace knowledge, and solving workplace problems as the main content, and take business data analysis and software application as the main means. Therefore, higher vocational colleges need to integrate information literacy education into professional education, with two are not parallel or opposite, but integrated. In the professional teaching design, information literacy is written into the training program as meta-literacy or general literacy, and integrated into every knowledge and ability point of every course.

(2) Learning situation: Integrate the educational situation with the workplace situation

Information literacy has distinct situational characteristics and is always manifested as a specific behavioral ability to solve specific problems in specific situations. The information literacy education of various majors in higher vocational colleges should design the learning situation of students according to the vocational situation that students are most likely to face in the future. At present, the practice and training courses in higher vocational colleges have adopted the forms of real enterprise practice and virtual simulation training room under the integration of industry and education to make the students' learning situation infinitely close to the real workplace situation, but it still needs to be purposeful and designed to add the training and guidance of students' information literacy. The classroom teaching situation is far from the workplace situation, and there is a lack of planned information literacy education situation design, which needs to be further strengthened.

(3) Learning tasks: Integrate learning tasks with typical career tasks

Any major has its own occupation and post orientation. It is an important content of current vocational college project-based education reform, with designing students' learning tasks based on typical tasks of occupation and post, including single learning tasks and comprehensive learning tasks.

Single learning task focuses on solving a specific workplace or occupation problem, requires students to collect and integrate information and provide solutions, and cultivates students' ability to solve single task. In single learning tasks, the tasks students face or the abilities they apply are usually discrete and not systematic. They only complete static learning tasks or workplace tasks, which is not conducive to abstracting the system or the whole action strategy and realizing the dynamic transfer of action strategy. Therefore, in the teaching process, it is also necessary to design comprehensive tasks, which are diverse, dynamic and complex. The enterprise field or virtual

simulation mode is usually adopted, which requires students to solve their own problems in complex and uncertain task situations. Students not only need to collect and integrate a greater amount of information, anticipate the future and reflect on the past in order to effectively solve problems, but more importantly, learn to think independently and critically in order to cope with uncertainty, create new products and build new solutions. Through this kind of task, students can realize the importance of contingency thinking and be more motivated to improve their information literacy and learning ability, so as to improve their future workplace adaptability and career migration ability.

(4) Learning mode: Combine learning mode with working mode

Higher vocational colleges actively promote the teaching concept of “study-in-doing”. In the learning process, students are required to participate in social activities corresponding to their level, or they are required to participate in game activities or virtual activities designed by teachers, or they are required to set inquiry learning tasks for students. In the process of completing these activities or tasks, students should independently complete information collection, screening, processing, and propose solutions. Meanwhile teachers should timely feedback to students the results of their solutions, then lead the students to summarize the success or failure experience and refine the action strategy. This process is not only the test and training of students' information literacy, but also the test and training of students' professional problem-solving ability. In this process, the learning process, effect and final course performance evaluation should also be redesigned introducing the corresponding elements of enterprise staff evaluation, and implanted with information ethics and enterprise culture accordingly, so as to enhance students' workplace experience.

In recent years, higher vocational colleges continue to deepen the exploration of information literacy education, and have done a lot of creative design, but often only to explore one aspect of the above four aspects, there is still a lack of overall thinking and design of the above four aspects. The “*four integration*” mode takes information literacy as the meta-literacy of professional literacy, systematically expounds the integration path of information literacy education and professional literacy education from four aspects, including teaching content, teaching situation, learning task and learning mode. It promotes the innovation of information literacy education from point to surface and then to three-dimensional. It has certain guiding significance and reference value to deepen the reform of talent training mode in higher vocational colleges.

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## References

- [1] Zhong Zhixian. *For Lifelong Learning: Connotation, evolution and standard of information literacy* [J]. *Distance Education in China*,2013(08):21-29+95.
- [2] Chu Hongqi. *The International vision of Core literacy and China's Position -- The Improvement of National Quality and the transformation of Educational goals in China in the 21st century* [J]. *Education Research*,2016,37(11):8-18.
- [3] Mackey. T. P, Jacobson. T. *Reframing Information Literacy as a Metaliteracy* [J] . *College & Research Libraries*, 2010 regulation (1)
- [4] Yang Helin. *Analysis and Thinking on the Framework of Information Literacy in Higher Education in The United States* [J]. *Library and Information Service*,2015,59(12):141-146.

- [5] Liu Caie, Feng Sujie. *Interpretation and inspiration of ACRL's framework for information literacy in higher education* [J]. *Library and Information Service*, 2015, 59(09): 143-147.
- [6] Fu Shaohong, Gao ran. *Information literacy education reform under the guidance of higher education information literacy framework* [J]. *Library and Information Knowledge*, 2016 (03): 26-32
- [7] [UK] written by Victor Mayer Schoenberg, Kenneth kukyer; translated by Sheng Yangyan and Zhou Tao. *Big data era - great changes in life, work and thinking* [M]. Zhejiang People's Publishing House, 2013: 8-9
- [8] [US] Lisa Bolin et al., translated by Bian Rong et al. *Educational Psychology* [M]. China Machine Press, 2018: 169, 86-87
- [9] Qian Caiping. *Research on the connotation, characteristics and practice mode of embedded information literacy education* [J]. *Library Science Research*, 2020 (14): 19-24 + 10