

# *Perspective on Professional Information Literacy of Vocational College Students Based on Homework Task Search*

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**Abstract:** Professional information literacy is a prerequisite for vocational college students' professional learning, which determines the breadth and depth of their professional learning. The observation experiment method was used to study the information literacy status of 237 students in the process of completing course assignments. It was found that the information literacy of vocational college students is generally in the shallow state of information search, information replication and memory, which can only support the receptive learning of college students; However, the deep information literacy, such as information retrieval strategies, information integration and expression, and building new solutions, is obviously insufficient to support college students' high-level learning behaviors, such as critical learning and creative learning. Therefore, there is an urgent need to embed information literacy education in the professional education of higher vocational colleges. Through the design of professional curriculum teaching and homework tasks, we should carry out planned professional information literacy training for higher vocational college students to improve their ability to learn independently at a higher level.

## 1. Introduction

The learning process is essentially an information processing process<sup>[1]</sup>, and the ubiquity of the Internet and information communication technology has brought about tremendous changes in the amount of information, the way it exists, and the way it retrieves and processes information. Therefore, having considerable information literacy has become a prerequisite for people to learn effectively. At present, college students in higher vocational colleges are basically post-00s, and they should be veritable “digital natives”. From birth to growth, they have been accompanied by mobile phones, computers, the Internet, and search engines. As a result, the post-00s “digital natives” have formed a new way of cognition and learning that is different from their predecessors<sup>[2]</sup>. They rely on Internet search<sup>[3]</sup>, are good at multi-task learning<sup>[4]</sup>, and widely use the Internet and information technology. Dealing with activities such as communication and knowledge management, can actively and creatively apply information technology, and can learn the ability to apply digital technology from the environment<sup>[5]</sup>. They show a high degree of acceptance and

literacy of information for communication technologies and equipment such as search engines and social media in learning, socializing, shopping, and entertainment [6].

However, there are also studies showing that despite the proliferation of information and communication devices owned by college students, the information literacy and skills they actually show vary greatly [7], and they are not as proficient as they think they are [8]. There are a considerable number of young people in these young groups called “digital natives” who are not enthusiastic and unskilled in information technology, and they are “laymen” in information technology [9]. Therefore, the information literacy and skill levels of the “digital natives” infiltrated in the Internet and information technology are not balanced, but a “digital divide” prevails [10]. So, what is about the professional information literacy of post-00 vocational college students who are “digital natives”? Can it support their professional learning? To end this, we conducted exploratory research on this and try to find out the answer.

## 2. Research Design

The basic forms of daily professional study of vocational college students mainly include pre-class preview, in-class study and after-class homework. This research intends to observe and analyze the after-school homework completed by higher vocational college students, and then analyze one of their professional information literacy.

After-school homework is a basic form of professional learning for college students in higher vocational colleges: teachers design homework tasks, requiring students to independently retrieve information and form their own solutions by processing the retrieved information, so as to accumulate professional knowledge, train and improve professional ability. This study adopts the observation method to analyze and judge the state of professional information literacy and learning by observing the completion of after-school homework of vocational college students.

### 2.1 The Object of Observation

In this study, a total of 237 students were selected from 4 classes of 2018 customs declaration major and 2 classes of 2019 class of port and shipping in the second semester of the 2019-2020 academic year in Jiangsu Maritime Academy. And based analyzing the answers from the students to the after-school homework of the “Management” course, we observed and verified the current situation of professional information literacy of college students in higher vocational colleges.

### 2.2 Observation Process Design

First of all, teachers formulate assessment standards. Then, students are required to complete the assignment independently within the specified time and submit the homework answers in the vocational education cloud system according to the curriculum. The information source of the students' homework is not limited, and can be searched through textbooks, PPT, and the Internet. Finally, teachers mark homework according to the assessment standards, analyze the quality of homework answers, and then observe and analysis the students' information literacy and learning status.

### 2.3 Tasks of Observation

Lee divides learning into three types: receptive learning, critical learning and creative learning [11], and then correspondingly form three types of learning tasks: receptive tasks, critical tasks and creative tasks. Based on Lee's division of learning tasks, the “Management” course designs three

types of homework tasks as following.

(1)*Receptive learning tasks* are tasks that emphasize the memory, comprehension, and expression of what has been learned<sup>[12]</sup>. In each course module, about 4 review questions are designed based on the important knowledge points that students must master. Students are required to extract homework answers by reading and searching textbooks, PPT and corresponding learning resources after class. The main purpose is to examine the students' mastery of the course knowledge points. The title for observation is: "Describe the connotation and characteristics of management". This kind of homework tasks can test students' information literacy and ability in professional information search, information reproduction and memory, and information expression.

(2)*Evaluative learning tasks* are tasks that focus on reflection, critique, and evaluation of knowledge<sup>[12]</sup>. Extended thinking questions are designed in each course module, mainly selecting some classic quotations or cognitive descriptions of management common sense in the business or academia, requiring students to use the knowledge they have mastered and retrieved information to evaluate the point of view and express their own opinions, position and give reasons for above. The main purpose is to guide students to think deeply about management issues, to broaden students' horizons, to train students' critical thinking, and to map abstract management theories to vivid practical problems. The observation title is "Do you think the manager is a bandleader or a football coach, please explain why". Through such homework tasks, students' information processing, integration and evaluation abilities can be tested.

(3)*Creative learning tasks* are tasks that emphasize students generating new ideas or constructing new solutions based on prior knowledge<sup>[12]</sup>. Case analysis questions are designed in each knowledge module, and students are required to give corresponding solutions or solutions based on the case situation and the problems encountered by the case enterprises. Students are required to formulate solutions with clear and novel viewpoints, with logical arguments and sufficient arguments. The main purpose is to test the students' ability to apply the knowledge they have learned to solve the problems encountered and construct new solutions. The observation topic is: *Students are required to determine the next step of new product research and development direction for the enterprise and give the basis according to the business environment faced by the enterprise in the case and the current situation of the enterprise itself.* This kind of homework task can test students' ability to form new ideas and new solutions using the information they have mastered, and test their creative thinking level.

### 3. Results

#### 3.1 Statistics and Analysis of Receptive Tasks

The observation title of the receptive homework task is "Describe the connotation and characteristics of management". The main observation points are the matching degree of answers and questions, and the processing and integration of information. A total of 237 students received 209 valid answers.

Among the total 209 valid answers, 172 answers matched the questions and could explain the questions better, accounting for 82.3% of the total answers. It can be seen that college students in higher vocational colleges have a good degree of completion of receptive learning tasks. For a given homework task, they can generally use retrieval tools to retrieve useful information and give corresponding answers, indicating that students have certain professional information retrieval and search capabilities.

However, through careful study and comparison, and statistical analysis based on the traces of information processing by students in the process of completing their homework, three phenomena have been found: (i) Vocational college students mostly paste the retrieved information in the

original text, and less Process and integrate. Among the 209 answers obtained, 166 homework answers are pasting the original text of the retrieved information, accounting for 79% of the total number of completed assignments; only 43 answers have processed the retrieved information, accounting for 21% of the total completed assignments. . And in the process of pasting the original text, almost no students marked the source of the citation. (ii) The processing of the retrieval information by a small number of students is only the deletion or excerpt of the elementary level, and less deep-level logical processing and knowledge integration. The answers the students made were only to cut and paste some of the documents obtained by Baidu, and did not really integrate the retrieved information according to their own needs to explain or demonstrate their own views, and even the most basic typesetting was very little. (iii) In the answers of students' homework, huge lengths of rough typesetting and incomplete sentences frequently appeared, and even some irrelevant information appeared. It can be seen that in the process of completing the homework tasks, the students' awareness and ability to reprocess the retrieved information are weak, which further shows that the students lack the consciousness of taking the initiative to perfect the homework.

This homework observation also found a phenomenon that, with regard to homework information sources, while vocational college students are highly dependent on the Internet (especially for Baidu), they are weakening their dependence on textbooks. Among the 209 homework answers, 155 were from Internet searches, accounting for 74% of the total number of answers, 27 were from the teacher's PPT, and 27 were answered in their own language, accounting for 12.9 percent of the total. %. Regrettably, none of the 209 students went to the textbook to find the answer. For the “digital natives” born in the 2000s, “how to play the function of teaching books” is indeed a thought-provoking question.

### 3.2 Statistical Analysis of Evaluative Tasks

The observation question title for the evaluative homework task is “Do you think the manager is the conductor of the band or the coach on the football field? Please explain the reasons for that”. Statistical results show that the quality of students' answers to this question is significantly lower. Among the 200 answers submitted, there were only 41 answers with clear opinions and sufficient reasons, accounting for 17.3%. Among the remaining 159 answers, either there are opinions and the reasons are insufficient (25.3%); either the opinions are unclear and the reasons are not sufficient (18.1%); or only 2-5 words are given. Opinions have no reason to analyze (23.7%). This shows that: (i) most students are able to express their own views and positions on a controversial issue, but the ability to use the retrieved information to rationally, substantially and logically clarify their own views and persuade others is obviously insufficient; (ii) There are also some students who have encountered problems and are still unable to clearly express their views and positions, let alone make clear logical arguments using the retrieved information. The reason is that, on the one hand, the professional knowledge reserves of students are obviously insufficient, and on the other hand, the ability of students to integrate and connect the new information retrieved with their own original knowledge system is insufficient, and it is difficult to form new viewpoints and cognitions through retrieval. , it is difficult to form an objective evaluation of the things or opinions encountered.

### 3.3 Statistical Analysis of Creative Assignments

The observation topic of the creative homework task “requires students to analyze the environment faced by the enterprise and its own advantages and disadvantages based on the case, and determine the next new product development direction for the enterprise and give the basis”. The quality of the answers is analyzed according to the following three observations: (i) whether the

product direction is clear; (ii) whether the reasoning is sufficient; (iii) whether the argument is logical.

Student responses were generally unsatisfactory. Among the 215 answers obtained, only 12 can achieve “the point of view is clear and clear, the reasons are sufficient, and the discussion is logical”, accounting for only 5.6%; although 32 answers put forward clear new product category claims, but However, no corresponding basis was given, accounting for 14.9%; 58 answers had neither a clear new product category proposition, nor a reason-based analysis, accounting for 27%. The content of the remaining 105 answers did not match the requirements of the question. Among them, 61 students found a piece of information about new products or similar materials on the Internet and directly pasted them, accounting for 28.4%; 44 students organized their own language Answer, the answers did not match the requirements of the questions, accounting for 20.4%; the format and content of the other 8 answers did not meet the requirements of the assignment at all, accounting for 3.7%. This shows that: a considerable number of vocational college students can not use the old and new information they have to plan new programs or products; nor can they effectively communicate with others about products or functions.

## 4. Conclusions

### 4.1 The Information Literacy of Vocational College Students is Generally Weakly for Information Search and Information Memory

The results of this study show that vocational college students have preliminary information search ability. For a given homework task, you can basically retrieve the corresponding information through Internet search and other means to make your own answer. However, Internet search ability is not exactly the same as information literacy. Information literacy includes not only information retrieval and information memory ability, but also a number of deep literacy and skills, such as information processing, information integration, information expression, information evaluation and information creation. The completion of the homework task shows that these deep-level information literacy and skills of vocational college students are obviously insufficient: when choosing information sources, they lack the authoritative and professional cognition and judgment of information; for information search tasks, there is no formula for Effective search strategy, less strategic search; little sorting and processing of collected information, new knowledge is difficult to integrate into the original knowledge system; weak ability to use information to construct new programs and create new knowledge; weak awareness of information ethics , Most of the information that students searched through the Internet is pasted in a large area of the original text, and few students will cite the literature of others to indicate the source.

Compared with the five standards in the “*American Higher Education Information Literacy Competency Standards*” in 2000, the current higher vocational college students in my country basically meet the requirements of the second standard, that is, “can effectively obtain the required information”, while in the other four standards (ability to determine the nature and scope of information needed; to evaluate information and its provenance, and to integrate selected information into his or her knowledge base and value system; to use information effectively for specific purposes; to be familiar with Many economic, legal and social issues related to the use of information, and the availability of reasonable and lawful access to information) , there is still a big gap. When compared to *the 2015 Information Literacy Framework for Higher Education*, the gap is even greater.

## 4.2 The Current Situation of Professional Information Literacy of Vocational College Students is Difficult to Support Their Advanced Professional Learning

The essence of learning is to obtain and use information. The awareness and ability of learners to obtain and use information is information literacy. A learner's learning is closely related to its level of information literacy. Especially in the information age, information literacy has become the fourth basic learning ability after “reading, writing, and arithmetic”. The main markers that learners learn to learn <sup>[13]</sup>. Whether it is school learning or lifelong learning, it needs to be based on the information literacy of learners, and the higher the level of learning, the higher the level of information literacy of learners.

Judging from the quality of students' completion of the three types of homework tasks, the matching degree between the answers of the receptive homework tasks and the homework questions is 82.3%; the matching degree of the critical homework tasks is 41.8%; the matching degree of the creative homework tasks is 20.5%. On the whole, the current higher vocational college students are better at completing receptive homework tasks, but not ideal for critical and creative homework tasks, indicating that the current higher vocational college students' learning is generally in the low-level learning of receptive learning. This state of learning is closely related to the shallow state of information literacy of vocational college students.

For the “digital natives” born in the 2000s, “search” has become the main content of their lives. They need to search for shopping, search for entertainment, and even more for learning. “Search + copy + paste” has become a typical learning method for vocational college students. Of course, a large number of Internet search activities have broadened the horizons of vocational college students and seen more new knowledge and new fields. However, they only carried out receptive learning, and achieved less critical learning and exploratory learning. Information integration, the ability of logical expression, objective evaluation and creative problem solving is not trained, and the habit of active learning is not formed. This does not match the amount of time they devote to Internet search activities. Therefore, the current professional information literacy of vocational college students is not optimistic, and has even restricted their advanced professional learning.

## 5. Suggestions

In order to improve the high-level learning ability of vocational college students and improve their competitiveness in social life in the future, systematic professional information literacy training and training for vocational college students has been put on the agenda. Specific recommendations are as follows:

The professional information literacy of higher vocational college students requires conscious and planned training and training, and should be incorporated into the professional education system. In the past, people had an illusion: the post-00s grew up with the development of the Internet and information, and their life, learning, entertainment, shopping, etc. all highly relied on Internet search. Therefore, their information literacy does not need to be cultivated, and will become available at that time. However, the results of this study show that the professional information literacy of vocational college students is not automatically formed and strengthened by their skilled and frequent Internet search activities. It can be seen that the professional information literacy of vocational college student needs purposeful and planned training and training, and information literacy education needs to be embedded in the professional education of vocational colleges. Therefore, embedding information literacy education in the professional talent training program is an inevitable requirement for the establishment of new majors and the transformation of traditional majors in the future.

Professional teaching links such as course learning tasks and homework training should be taken

as important carriers and means of training professional information literacy. Any learning task and any homework training in professional teaching depend on information retrieval and information processing. Through the ingenious design of teaching tasks and homework tasks by teachers in the course, help students to master more professional information retrieval tools, strengthen students' authoritative cognition of professional information, guide students to formulate retrieval strategies, and evaluate, process and evaluate the retrieved information. Integration, where students are encouraged to use their acquired knowledge to construct solutions to problems or to design new works. After repeated training in various professional courses, students can search for more professional knowledge (receptive learning) and complete more advanced professional learning tasks (critical and innovative learning) through the Internet. This can not only improve the professional information literacy and professional learning ability of vocational college students, but also help students develop lifelong learning habits, master lifelong learning skills, and truly achieve the effect of learning in search.

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