The Effect Of Knowledge Competition On Career Ability And Career Development Among Higher Vocational Colleges Students In Guangxi

Huang XiaoE, Wei Hui-Suan and Lee Keok Cheong

***Abstract* –The factors affecting the vocational ability of higher vocational college students are diverse. Vocational skill training, especially career cognition training, is an important factor affecting the all-round development of higher vocational college students. Higher vocational students are facing insufficient career planning and action ability, weak professional cognitive ability in their career development. However, the research in exploring the impact on students' professional ability from the perspective of career cognition has not received due attention. There, this study aims to determine the level and development characteristics of career cognition; and to explore the influencing factors of professional ability and the impact of career cognitive competition on professional ability and career development. This study adopts quantitative research methodology. The "College Students' career development scale" will be used as the questionnaire to collect the data. The sample size is determined using simple random sampling methodology. Students from Guangxi Vocational and technical college will be participated in the questionnaire survey. Correlation analysis and regression analysis will be used to analyse the collected date in order to explore the impact of work process knowledge competition on the professional ability and career development of higher vocational college students. This study is significant to the academic research of vocational education and fill the gap between education and employment. The research model provided can be used as a decision-making reference for career reform.**

***Keywords* –Knowledge Competition, Career Ability, Career Development**

I. INTRODUCTION

UNESCO pointed out in its report "jointly rethinking our future: a new social contract for education" released to the world on November 10, 2021: "the world is at a new turning point... Knowledge and learning are the basis of change and transformation. Educational transformation is imperative" (Shen Zuyun, 2021). In the overview of vocational education of OECD, it is pointed out that the penetration rate of Vocational Education in Germany, Finland, Switzerland and other countries has reached 70% (Shen Zuyun, 2021).

China has also entered a critical period of educational transformation. In 2019, the State Council issued the notice on the implementation plan of national vocational education reform, and in 2021, the general office of the State Council issued the opinions on promoting the development of modern vocational education. China attaches unprecedented importance to vocational education and has made unprecedented efforts to promote the reform and development of vocational education. Cultivating technical talents with comprehensive ability and literacy has become an important reference index for vocational colleges to cultivate students.

In the environment of more and more attention to vocational education, vocational colleges pay more attention to bringing vocational cognition and job cognition into the connotation of students' vocational core quality. On this basis, vocational colleges organize students to improve students' vocational cognition by increasing job internships or carrying out career courses. Higher vocational colleges need to grasp the input and output factors of vocational cognitive education to provide teachers and students with a more comprehensive and effective vocational cognitive path, so as to cultivate technical and skilled talents with comprehensive ability and meet the development needs of the national strategic level.

In the process of the development of vocational cognitive education, higher vocational colleges are also constantly learning from the experience of all parties, improving the vocational cognitive teaching system and activity plan, and the teaching results are also effective. After consulting previous studies, it is found that domestic research on Vocational cognition education started relatively late, focusing on the problems and Countermeasures of vocational cognition, the vocational cognition and vocational maturity of students of different majors (Jian GANGSHUN, 2016). There are few empirical studies on Vocational cognition, while the research on the improvement of students' vocational cognition by evaluating work process competition activities is almost not involved at present.

Players from other countries through representation of avatars (Yeh & Wan, 2016). Thus, it provides a space for English language learners to increase confidence and comfort and to overcome cultural barriers for learning English (Zheng, Young, Brewer, & Wagner, 2009).

In fact, as reported by Lan (2015), many literatures support the use of online virtual world in English education because of its potential of providing EFL learners with the needed language contexts without any temporal barrier as well as the potential of enhancing EFL learners' language competences.

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II. PROBLEM STATEMENT

Vocational cognition is very important for students in higher vocational colleges. It is the premise for students to clarify their vocational learning objectives. Zhou Weizhen (2009) and Ren Fuzhan (2013) investigated the career status of higher vocational students in different cities such as Jiangxi and Beijing, and found that students in vocational colleges generally have difficult problems such as lack of career cognition, unclear career objectives and lack of career cognition practice projects. As the country pays more and more attention to vocational education, the cognitive education of vocational education has also become the focus of academic circles at home and abroad in the past two or three years.

The existing research mainly focuses on three directions:

One is to explore the training strategies of professional cognition. Choosing the way of teaching determines the effectiveness of vocational education. Lin Xiaona (2019) built a model of experiential career counseling for career promotion of higher vocational students. Guangxi scholar Jiang Wenpei (2020) proposed the way of vocational cognitive competition to explore the optimal mode of vocational cognitive education. This exploration method is also the research object of this paper. Vocational competition refers to vocational cognitive competition, which was designed by Jiang Wenpei. The view of Guangxi scholar Jiang Wenpei is valued, which is to introduce a set of activity plans of professional standards and post work process into vocational cognitive education. The contribution of vocational cognitive competition to the field of vocational cognitive education is fundamental and has the significance of reform and innovation.

Second, explore the impact of different educational elements on students and their specific action paths. Ren Fuzhan (2013) believes that college students' human capital investment has a great impact on College Students' career maturity. Regression weighting method and entropy weighting method are adopted. This paradigm provides a quantitative research model for the plight of vocational education of higher vocational students.

Third, with the gradual deepening of various theoretical development concepts, integrating psychological team consultation (Lin Xiaona, 2019), positive psychology (Chen Chen, 2015) and information processing theory (Wang benxian, 2013) into vocational education, and analyzing the impact of vocational cognitive education model under combination theory on teaching effect has become a new hot spot.

Although different researchers have different perspectives, the importance of vocational cognitive education has been widely recognized and accepted. The research proposed in this paper attempts to make quantitative analysis from the existing research and cross theoretical multi elements, so as to make up for the blank field in the research.

In view of these considerations, this paper aims to empirically test the influencing factors of professional ability and the impact of professional cognitive competition on professional ability and career development. More specifically, this study analyzes a professional vocational cognitive training (called work process knowledge competition) to evaluate and test whether students benefit from this competition. Therefore, this study will explore the following issues:

1. What is the level of vocational cognition of higher vocational students?
2. What is the level of career ability of higher vocational students?
3. What is the career development level of higher vocational students?
4. What is the impact of vocational cognitive competition on Higher Vocational Students' career ability?
5. What is the impact of vocational cognition competition on the career development of higher vocational students?

In view of the research problems, this paper adopts quantitative research methods to study the vocational cognitive competition. Taking the students of Guangxi water conservancy and electric power vocational and Technical College as the survey object, this paper mainly studies the impact of vocational cognitive competition on the career ability and career development of higher vocational students. Specific research objectives include:

1. Determine the vocational cognition level of Higher Vocational Students.
2. Determine the career ability level of Higher Vocational Students.
3. Determine the career development prospect level of Higher Vocational Students.
4. To explore the influence of career cognitive competition on Higher Vocational Students' career ability.
5. To explore the impact of vocational cognitive competition on the career development of higher vocational students.

III. LITERATURE REVIEW

Career Cognition and Working Process Knowledge and Work Process Knowledge Competition

Career cognition includes self-cognition, career prospect, career development, talent demand, etc. (Chen Yu, 2011). Li zhuofen (2017) believes that career cognition is an individual's evaluation of self, career itself and career development trend in the career world, which is generated by three basic ways: personal career experience, alternative career experience and observing others' professional behavior.

Working process knowledge was the concept originated from German "arbeitswissen", which was first proposed by Kruse in 1986. Later, the European research project "working process knowledge in technology and organizational development" expanded the definition of working process knowledge and further analyzed the main characteristics of working process knowledge. At present, there are many definitions of work process knowledge, some of which are defined from the positive significance of work process knowledge, such as "work knowledge is a kind of knowledge that can improve productivity, be more effective and meet the needs of labor process" (Xu Guoqing, 2015); Some definitions directly describe the characteristics of work process knowledge, such as "work process knowledge refers

to the understanding of the work process of an organization as a whole, which is the knowledge obtained by skilled workers from the work process they participate in and combined with the written knowledge obtained from off-the-job learning and other learning methods" (Felix laurel, Rupert McLean. 2017). Although the perspectives are different, these definitions are not much different on the whole. Their understanding of the connotation of work process knowledge is consistent, that is, work process knowledge is attached to the work process, which is the professional knowledge actually needed in the work process.

Working process knowledge is the most important content in career cognition, which is helpful for students' professional orientation.And its main tasks, and make up for the lack of vocational enlightenment education.

Work Process Knowledge Competition is the vocational cognitive practice project which formed in the practical exploration of Guangxi Higher Vocational Colleges, with Jiang Wenpei as the project designer. With the core of "occupation", this competition guides students to consult the national vocational education teaching standards and national vocational standards, so that students can take the initiative to understand the occupation and professional objectives, and explore the vocational cognitive contents such as occupation, employment post and work task, so as to realize the assumption of understanding the professional objectives through cognitive occupation. The whole activity process can be summarized into "six steps and three stages", which is referred to as "six steps and three stages" (Jiang Wenpei, 2020).

Dimensions of Career Ability

The dimensions of career ability are diverse. From the perspective of this study, only key dimensions are selected, including career information cognition and career planning.

On the one hand, it is career information cognition, which mainly refers to comprehensively mastering the employment situation, working environment, work tasks, job standards, career goals and other aspects of a career in today's society, and making cognition and judgment accordingly. Career planning refers to a person's career decision-making and planning ability. It is a process in which a person makes systematic planning for his life and career. It makes decisions according to his preferences, skills, values and personal development. It can be divided into long-term and short-term career planning.

Career Development Dimension

According to the literature review, the "College Students' career development scale" is widely used as the research tool in China to investigate the overall career development status and development characteristics of higher vocational students. After career counseling, it includes seven aspects: "career feeling", "career belief", "career exploration", "career plan", "career attitude", "career action" and "career development".

1. Courses guidance has an impact on the career ability of higher vocational students.
2. Teacher guidance has an impact on Higher Vocational Students' career ability.
3. Vocational cognitive competition has an impact on the career ability of higher vocational students.
4. Courses guidance has an impact on the career development of higher vocational students.
5. Teacher guidance has an impact on the career development of higher vocational students.
6. Vocational cognition competition has an impact on the career development of higher vocational students.

IV. Conceptual model of the study

Based on the research hypothesis, this study considers three variables, including knowledge competition, career ability and career development.

The vocational cognitive competition considered in this study includes two tools (curriculum guidance, teacher guidance and competition organization), so it is necessary to measure the relationship between variables:

1. The relationship between curriculum guidance and students' professional ability and career development;
2. The relationship between teacher guidance and students' professional ability and professional development;
3. The relationship between competition organization and students' professional ability and professional development.

The knowledge competition mentioned in this study refers to the cognitive competition of working process, which is mainly a form for students to participate in the competition after understanding the working process, post standards and other knowledge of their major through curriculum learning and teacher guidance. The definition in the first chapter refers to work process knowledge, which refers to the professional cognition related to the work process. It emphasizes the overall cognition of the work process, which includes both individual skills and the understanding of the work scene. The work process knowledge competition designed by Jiang Wenpei (2020) is to return to the profession itself and design the complete process and evaluation indicators of the work process knowledge competition with professional standards and post norms as the core content. It involves the top-level design of vocational courses. The employment guidance center of Higher Vocational Colleges develops curriculum standards and syllabus to actively match with enterprises. Let students know and understand the relevant standards and norms of the enterprise in advance. Professional instructors will guide students to adapt their career orientation and career planning according to their majors. Finally, through knowledge competition, strengthen students' knowledge processing ability and executive ability. As a applicable vocational cognition training strategy, it is widely implemented in Guangxi and welcomed by the majority of students.

Career ability evaluation mainly refers to collecting the degree of achievement of career goals of higher vocational students and students' satisfaction with curriculum design, teacher guidance, competition and other elements through different methods.According to the literature research, the evaluation of career ability can be divided into process evaluation, summary evaluation and follow-up evaluation. This study adopts process evaluation and summary evaluation. In the process of vocational cognitive education, higher vocational students collect data by means of observation, interview and questionnaire.

This study mainly focuses on career awareness and career planning ability in the dimension of career ability. The method of measuring career awareness is to ask the respondents: can they improve their job cognition through knowledge competition? The options are reserved: (1) absolutely (2) in most cases (3) in a few cases (4) absolutely not (5) unclear. There are 5 options. Career planning ability is to ask students about the help of curriculum, teacher guidance, competition and other educational activities designed by higher vocational colleges to career planning. If the visitor has received any help, it will be regarded as "yes = 1", otherwise it will be treated as "no = 0".

In the research on the dimension of career cognition, some foreign scholars summarized the Western career development evaluation dimension as the understanding of the work field, the ability of job screening, the understanding of working conditions, the need for work education time, the psychological characteristics required for work and the understanding of job responsibilities (Westbrook BW., 1983).SuQian (2018), Jiang Wenpei (2020) and others have reformed the dimensions of career evaluation. These dimensions include seven dimensions: career feeling, career belief, career exploration, career plan, career attitude, career action and career development. The questionnaire was evaluated, verified and empirically tested by Zhou Weizhen (2009), which can be used in this study.

The method of measuring career development is to design a questionnaire: To investigate whether the respondents have an impact on their career feelings, career beliefs, career plans and career attitudes after receiving courses, teachers and competition activities. The options are reserved: (1) completely inconsistent (2) relatively inconsistent (3) generally consistent (4) relatively consistent (5) completely consistent. There are 5 options.

The influencing factors of knowledge competition on higher vocational students include career ability and career development. These two dimensions include many factors, many of which have been demonstrated by researchers, and the conclusion has been recognized and accepted. This study removes some elements with high similarity and retains the elements closely related to this study.

The proposed conceptual framework of the study is shown in Figure.

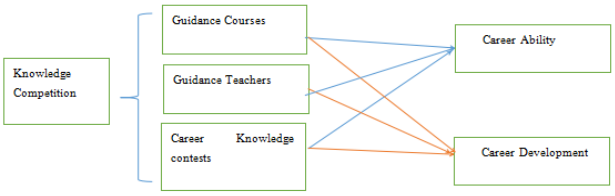

Figure 1 Conceptual Framework

The framework reflects the importance of implementing vocational competition in Vocational cognitive education. Vocational knowledge competition is an independent variable, which includes three educational elements: curriculum, teacher and competition. Dependent variables are students' professional ability and career development.

V. METHOD

In the research literature, a few studies have carried out empirical research in this field, using quantitative methods; Including Zhou Weizhen (2009) and Ren Fuzhan (2014) on the impact of different training strategies on career development. This study will also use quantitative methods in reference to effective research methods.

Research design

This study adopts the experimental method to study the relationship between variables. The logical structure of the experimental method is as follows:

Experimental Objectives - Experimental Design -- Experimental Procedures

The quasi-experimental method was used in this study. The research object is two classes of freshmen from Guangxi Water Resources and Electric Power Vocational and Technical College. Taking college students as experimental participants, this study mainly studies the impact of competition mode on the vocational ability of higher vocational students. Conduct a pre experiment before the formal experiment. The purpose of the pre experiment is to conduct a comparative study to test the difference between teaching mode and competition mode on students' ability, that is, to verify hypothesis 1. The purpose of the formal experiment is "to test the impact of vocational competition on students' ability improvement in both teaching and evaluation", and to test the influencing factors of the significant degree of students' ability improvement, that is, to test hypothesis 2 and hypothesis 3.

The appropriate experimental design is carried out according to the experimental objectives. Using the quasi experimental method, the experimental factor is Guangxi water conservancy and electric power vocational and technical college. There are 170 freshmen in two natural classes in 2022, with 85 students in each class. One class received vocational cognitive education in the teaching mode, while the other class received vocational cognitive education in the competition mode.

The experimental group received competition counseling in accordance with the vocational cognition competition plan, starting from May 22, 2022, about one and a half hours each time, lasting for eight weeks until July 10, 2022.The control group did not participate in competition counseling, but only received ordinary career theory courses.

Population and sample

In addition to the above reasons for the use of quantitative methods, it must be added that this method will allow the use of large sample size, so as to ensure its popularization.

As one of the two classes of Guangxi Institute of water conservancy technology in 2022, it is a part of the discussion scope of the freshmen of Guangxi Institute of water conservancy technology. According to McMillan and Schumacher (2001), the sample size must be appropriate and representative of the population and provide valid results. The population of this study is very limited, so a questionnaire will be distributed to collect the most answers.

Pilot Study

The pre experiment stage was completed in the early stage of this study, and the data were evaluated by means of reliability and validity test. The measuring tool is SPSS.

In the pre experiment stage, 30 questionnaires were distributed and 30 valid samples were recovered. The proportion of men and women is consistent with that of students in school, with boys accounting for 61.5%. All 30 samples were students receiving career education.

In this study, α were used to test the reliability of the scale.The Self-evaluation Scale contains 19 items with total reliability α is 0.994;The career development scale includes 12 items with total reliability α is 0.991, which has strong reliability;the career maturity scale includes 16 items with total reliability α The coefficient is 0.992, which has strong reliability.

Figure3.1 Reliability

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.994	.994	19

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.990	.991	12

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.991	.992	16

According to the questionnaire collected in the previous study, the validity of 37 questions was analyzed. The total coefficient of validity was 0.874, which was highly reliable.

Table 1 Validity KMO

Sampling enough degrees of Kaiser-Meyer-Olkin	.874

Data Analysis

The research methods used in this study include literature research methods, questionnaire survey and empirical research.

Literature research: literature retrieval and reading, determine the research perspective, research object and research scheme, and master the current situation of the research object.

Questionnaire survey: according to the literature of vocational education strategy and career education, the questionnaire is designed to determine the research object, sampling quantity and data staQuantitative analysis method: the obtained data are analyzed by factor analysis, reliability and validity analysis, descriptive analysis, correlation analysis, regression analysis and other techniques.

In order to analyze the data, SPSS statistical function will be used to extract demographic information, descriptive analysis, reliability and factor analysis for preliminary research.This study first makes a descriptive statistical analysis of the teaching mode and competition mode, and then makes a quantitative analysis of the differences and significance of the teaching mode and competition mode among different students and different career ability dimensions through the measurement scale, so as to further verify the characteristics and laws of different training strategies.

VI. FINDINGS

In the pre experiment stage, 30 questionnaires were distributed and 30 valid samples were recovered. All 30 samples were students receiving career education.

The survey found that:

1. Among the four levels of feeling, belief, exploration and planning of career development, the average score of career plan is higher than the other three. The specific reasons are mainly due to:

First, the sample students are freshmen. They have just received the course training of career planning in the first semester of freshman year and have some understanding of the importance of career planning.

Second, career education in higher vocational colleges is still more employment oriented education. There is a lack of experiential practice mode for career exploration. Most of the content only stays in the explanation of textbooks and teachers, and students lack the belief and exploration cognition of career development.

2. Among the four levels of feeling, belief, exploration and planning of career development, the score of career feeling is the lowest. It can be seen that higher vocational students have very limited understanding of career, lack of understanding of the relationship between specialty and career and specific feelings of career development. College

students, including higher vocational students, generally have the contradiction between feeling and cognition in career planning, which further shows that college students have no real understanding of what career development is, vague consciousness and lack of practical implementation, which will affect their choice of future career and the orientation of future life development.

VII. DISCUSSION

Research limitations should be taken into account. The quasi experimental method is used in this paper. In the pre experiment, 30 freshmen were selected from the freshmen class to participate in the questionnaire, which inevitably brings some limitations due to the random sampling in the non-strict sense. In order to enhance the reliability of research data and the robustness of conclusions, future research should conduct group tracking survey on students, and use comparative analysis to draw response conclusions.

VIII. CONCLUSION

Through the data analysis method, this paper analyzes the collected data, discusses the impact of knowledge competition in the working process on Higher Vocational Students' professional ability and career development, constructs the model of dependent variables and independent variables, and theoretically analyzes the impact of vocational knowledge competition on students' career feelings, ideas, exploration and planning. The preliminary research results can draw the following conclusions:

1. The overall career development level of higher vocational college freshmen is not high, their career sensitivity is low, and their career development level needs to be improved.

2. The career development level of higher vocational students receiving career guidance has been improved. The content of guidance has been applied to their personal real life, and the career planning has been enhanced.

3. Curriculum guidance, teacher guidance and professional cognition competition are effective ways to improve the career development of higher vocational students.

REFERENCES

Shen Zuyun.(2021). The Global Education Report. 2021.

Wang benxian (2013）. An analysis of cognitive information processing theory Educational exploration [D]. 1002 - 0845 (2013) 05 - 0007 - 02.

Ren Fuzhan (2013) Research on human capital investment and career development of college students Doctoral Dissertation of Hebei University of technology.

Chen Yu (2011）. Research on Career Education in American colleges and Universities under the background of human resources development [D] Northeast Normal University.

Li Zhuo fan (2017). Research on career planning of engineering college students from the perspective of social network [D] Shanghai Normal University, 2017 DOI:10.27312/d.cnki. gshsu. twenty-nine

Xu Guoqing (2015). Curriculum theory of Vocational Education (Second Edition) [M] Shanghai: East China Normal University Press: 130

Felix laurel, Rupert McLean (2017) scientific research manual of International Vocational Education (Volume II) [M] Zhao Zhiqun, Xu Guoqing, Zhuang Rongxia, et al Beijing: Beijing Normal University Press, 112

Lin Xiaona (2019). Research on the intervention of experiential group counseling on senior high school students' career maturity [D] Xiamen University

Zang, G. S. (2006). The effect of group counseling on college Students' career maturity based on cognitive information processing theory

Zhou Weizhen.(2009). The Study on the Effect of Experienced Career Guidance based on Cognitive Information Processing Theory on Vocational College Students of Career Development .Master's thesis. Suzhou University,(73):319-325

"Super, D.E.(1980) A life-span,life-space approach to career development. Journal of Vocational Behavior,(16):282-298 "

Super, D. E. (1990). A life-span, life-space approach to career development. In

Wu jixia.(2008). Comparison of self-care ability of college students with different social backgrounds. Psychological Science, 31(5):1274-1276."

Xia Zhengnong. Cihai (Education Volume) [D]. Shanghai Dictionary Publishing House, 2020

The Ministry of Labour and Social Security. The Vocational Classification Ceremony of the People's Republic of China [D]. China Labor and Social Security Press, 2008

Organized by China Rule of Law Publishing House. Book of Education Laws and Regulations of the People's Republic of China 1 [D]. China Rule of Law Press, 2021

Peterson,G.W., Sampson,J.P., Reardon,R.C., Lenz,J.G. (2000). Using Readiness Assessment to Improve Career Services:A Cognitive Information Processing Approach. The Career Development Quarterly, (49): 146-173

Jiang wenpei.(2020). Operational guidelines for knowledge competitions on work process in vocational colleges. Beijing: China Water Resources Press

suqian.(2018). Research and practice on teaching reform based on the law of Students' vocational cognition. Education and Teaching Reform, 28 (55)

Jiang Wenpei. Working process knowledge competition activities based on vocational cognition training [J]. Guangxi Education, 2020.