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Vocational Students' Core Competence in a Higher Vocational College in China

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Abstract: This paper first analyzes the background of the research on the cultivation of the core ability of higher vocational students. Outline the main questions that need to be explored in depth in this study. Discuss the statement, scope and definition of the problem and its implications. The study aims to make an assessment of the vocational core competencies of students as regards to their basic professional competence, professional interpersonal relationship and team cooperation ability, rational thinking and decision-making ability, and their personality ability. Based on the findings, the study will propose an output to enhance the instruction program for vocational training of students.

Keywords: Vocational Students; Vocational Core Competence; Training Mode; Reform.

1. Introduction

In today's rapidly evolving economic scene, the requirement for highly educated and competent individuals is essential. Vocational education is important in educating individuals for their careers, providing them with the information and skills they need to succeed in their chosen professions. Higher vocational education, in particular, strives to bridge the gap between academic learning and practical application, with an emphasis on the development of core abilities essential to certain sectors.

Due to technological improvements, globalization, and shifting industrial demands, the vocational landscape is undergoing tremendous transformations. As a result, higher vocational students' core competency has become an important determinant in their successful transition into the workforce. It is critical to modify the style of vocational core competency training in order to satisfy the changing demands of employers and assure graduates' employability.

Numerous studies in recent years have underscored the importance of vocational core competency training and the need for reform. As an instance, Wang, Li, and Wu explored the mismatch between abilities obtained via traditional vocational education and job market requirements. Their findings highlighted an urgent need for a more practical and industry-focused approach to training. Similarly, Zhang and Liu discovered that vocational students lacked fundamental abilities such as problem-solving, critical thinking, and effective communication, emphasizing the significance of filling these gaps through novel training methodologies.

Rapid technological breakthroughs and transformations in the global economy compel higher vocational institutions to examine their training techniques and modify them to suit the changing demands of industry. This study seeks to investigate and propose instructional programs for higher vocational students' vocational trainings, with a strong focus on improving their general competency and aligning educational practices with industry requirements.

Since the founding of New China, higher vocational education has been one of the important components of China's education, especially in the past 40 years of reform and opening up, its development has made considerable progress and remarkable achievements. Higher vocational colleges have always been committed to the construction of employment-oriented talent training mode. By learning from the vocational education mode of advanced countries, they have created a talent training path with Chinese characteristics, including school enterprise cooperation, combination of production and learning, and work study alternation. They have trained a large number of technical talents for the country's industrial progress and economic development.

However, with the continuous enhancement of the national economic strength, the deepening adjustment of the industrial structure, and the emergence of emerging industries, the talent skills training that vocational education has been proud of for a long time is increasingly unable to meet the needs of the new era, new occupations, new enterprises, and new posts for talent capabilities. These capabilities more point to a kind of social capabilities and methodological capabilities, such as interpersonal communication, team cooperation, communication and expression [1]. Therefore, how to seize the opportunity of the times, adapt to the changes in the demand for talents, deepen the innovation and reform of talent training mode, and cultivate compound technical and skilled talents with both professional skills and vocational core abilities has become the decisive factor for the success of the transformation and development of contemporary higher vocational education.

The drive for this study derives from the awareness that higher vocational education serves as a bridge between academic learning and the acquisition of professional skills. It focuses on the development of core competencies, which include both theoretical knowledge and practical skills applicable to certain sectors. Traditional methods to vocational core competency training, on the other hand, may not sufficiently satisfy the changing demands of industries and employers, demanding a reevaluation of present educational frameworks.

To bridge the gap that exists in previous literatures, this chapter conducts research and design based on the standards and current situation of the international mainstream vocational education model for the cultivation of students' vocational core competence. Through the questionnaire, we

understand the current situation of the cultivation of vocational core competence of higher vocational students in China, and provide the necessary premise for further exploring the effective cultivation model of vocational core competence of higher vocational students.

The reform of vocational core competency training is a serious topic in higher vocational education. Recent studies have underlined the need to bridge the gap between traditional training methods and the changing job market requirements. Competency-based training, technology-enhanced learning, and industry engagement have emerged as critical reform strategies. By using these measures, vocational institutions can ensure that higher vocational students acquire the required abilities to succeed in their employment. This study intends to explore and evaluate the efficacy of various reform approaches, adding to continuing efforts to improve vocational core competency training. The study aims to make an assessment of the vocational core competencies of students as regards to their basic professional competence, professional interpersonal relationship and team cooperation ability, rational thinking and decision-making ability, and their personality ability. Based on the findings, the study will propose an output to enhance the instruction program for vocational training of students.

The research on the innovation and reform of vocational core competence training mode of higher vocational students conforms to the goals and requirements of higher vocational education reform and higher vocational talent training in the new era, and has certain theoretical research value can improve the skills of the students. Individual students also pay more attention to the development of their personal career. As more and more people have realized the importance of vocational core competence training, it has basically become a consensus in the academic community to regard it as the talent training goal of higher vocational students [2]. Through the analysis of the existing problems of the training model and the application and promotion of the innovative model, it not only provides effective reference for the reform of talent training model in vocational colleges, but also provides an effective way to match the supply and demand of the talent market, and provides a sustainable development impetus for the career development of individual students, this is the practical significance of this study. Based on the results of the study the future research can replicate the but in another dimensions.

To achieve the research objectives of this study, the researcher will make an assessment of the vocational core competencies of the students of Deyang Vocational College of Technology and Trade in order to develop a reformed vocation instructional program. It will be conducted among 250 student-respondents from the aforementioned institution, and the respondents will be selected at random. The researcher aims to complete the research within 2022/2023 academic year. The study will propose an output to enhance the instruction program for vocational training of students. The research will also comply with all ethical considerations and dissertation procedure of Adamson University.

2. Related Theory

2.1. Hypothesis

There is no significant difference on the assessment of the student respondents in vocational core competencies when profile is taken as test factors?

2.2. Theoretical Framework

Picture 1 illustrates the Theoretical Framework studied in this paper. The current study is anchored on Hadiyanto's core competence theory. The theory was developed with focus on students' engagement and students' core competencies. The core competencies of students as illustrated by Hadiyanto are communication skills, numeracy, IT skills, problem-solving skills, learning how to learn, and working with others.

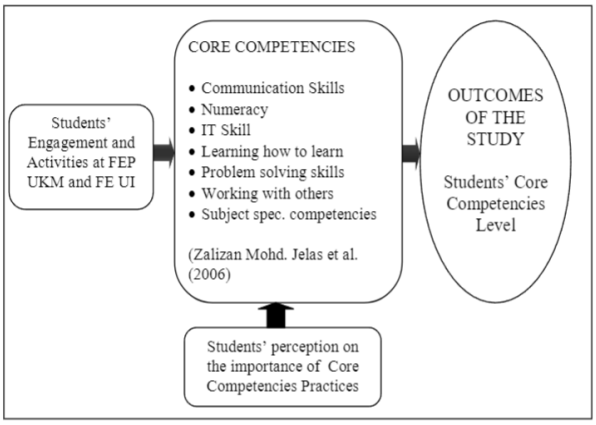


Fig 1. Theoretical Framework

Figure 2 shows the basic line of research in this paper. The conceptual framework of the study portrays the variables and dimensions that sets the paradigm of the paper. The research is quantitative research that used the descriptive design. It will determine the profile of the student-respondents based on their sex, age, and major [3]. The main variable in the study is the vocational core competence of the students which includes other sub-variables such as basic professional competency, interpersonal relationship and team cooperation ability, rational thinking and decision-making ability, and personality ability.

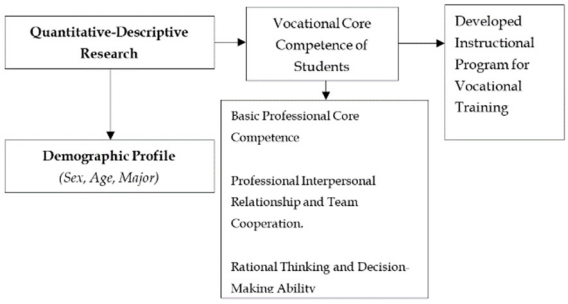


Fig 2. Conceptual Framework

2.3. Definition of Terms

2.3.1. Basic Professional Competence

This refers to the vocational core competence dimension used to determine the level of the students as regards to the basic competence attributes required in a professional setting.

2.3.2. Professional Interpersonal Relationship and Team Cooperation Ability

This is another dimension that will be used in the vocational core competence assessment in order to determine the extent to which the students are able to work with others efficiently.

2.3.3. Rational Thinking and Decision-Making Ability

As part of the vocational core competence dimensions, this refers to how the students will be assessed in terms of their ability to think creatively and make intelligent choices.

2.3.4. Vocational Core Competency

This is the main variable in the study which will be used to determine the level of the students' competence in terms of their basic professional competence level, their level of competence in thinking rationally and decisively, and their ability to cooperate and work with other members of a team.

3. Methodology

This chapter presents the method of research that will be utilized in this study. It involves the sources of data, instruments to be used, data gathering procedures, statistical tools and the manner with which the data were presented, analyzed and interpreted. It likewise includes the description of the venue where the study will be conducted.

3.1. Research Design

This research will use a descriptive research design to describe the study variables. This research design will be used to describe the vocational core competencies of the student-respondents as regards to their basic professional competence, professional interpersonal relationship and team cooperation ability, rational thinking and decision-making ability, and their personality ability. According to Voxco a descriptive research design is a sort of research design that seeks information to characterize a phenomena, situation, or population in a methodical manner [4]. It specifically assists in answering the what, when, where, and how questions about the research challenge rather than the why. Descriptive studies can be of numerous sorts, including case reports, case series, cross-sectional studies, and ecological studies. The first three of these collect data on people, but the last one collects aggregated data for groups.

3.2. Research Locale and Research Respondents

The study will be conducted among the students in Deyang Vocational college of Technology and Trade. The respondents of the study are students who are currently enrolled in the school at the time of the conduct of this study. Deyang Vocational institution of Technology and Trade is a full-time general institution of higher learning authorized by Sichuan Province's People's Government and registered with the Ministry of Education. It is the sole college in the southwest of China and one of the seven universities in the country, as well as the Ministry of Education's "Internet+Made in China 2025" industrial and educational integration development strategy launched in 2019.

Tens of thousands of technical and talented professionals have graduated from the school. The history of school administration has created a solid basis for school administration [5]. The school adhere to the running school characteristic, deepen the integration of industry and education, open new frontier majors centered on "China's intelligent manufacturing" and "Industry 4.0," pursue "intelligence, people's livelihood, health," and other fields, and cultivate high-quality technical and skilled talents. There are now 9 colleges and departments, 30 major enrollments, about 13000 students, and nearly 700 faculty members. Science and trade teachers and students have excelled in a variety of skill contests in recent years, winning over 190 honors at or above the provincial level.

3.3. Sampling Method

The research used a random sampling method to select the 250 student-respondents sample from the population. There are about 2,500 student population currently enrolled in Deyang Vocational institution of Technology and Trade. To get the population sample, the researcher used the raosoft calculator at 5.8% margin of error, 95% confidence level, 50% response distribution. By encoding the population of 2,500 students, the recommended sample size is 250 students.

3.4. Research Instrument

The research used a self-made survey questionnaire that was designed by the researcher based on the knowledge gathered from the reviewed literature and studies [6]. The survey questions are divided into two parts. The first part contains the demographic profile of the student-respondents in terms of their sex, age, and major. The second-part is the assessment of the students' vocational core competencies in terms of basic professional competence, professional interpersonal relationship and team cooperation ability, rational thinking and decision-making ability, and personality ability. Each of the dimensions has 7 items. There are a total of 28 statements in the survey questionnaire.

To validate the questionnaire, the researcher will consult with 2 faculty members in Adamson University who will help to check the research questionnaire and give feedbacks for necessary revisions. Furthermore, to ensure reliability of the research instrument, it was subjected to a Cronbach Alpha reliability rest with an initial sample of 20-student respondents (table 1). The overall reliability rate is 87% which suggests that the questionnaire is reliable.

Table 1. Survey Object Basic Information Form

Indicators	Cronbach Alpha	Remarks
Vocational Core Competency Questionnaire	0.87	Good
Per Dimension		
Basic Professional Core Competence	0.93	Excellent
Professional Interpersonal Relationship and Team Cooperation Ability	0.89	Good
Rational Thinking and Decision-Making Ability	0.86	Good
Personality Ability	0.88	Good

George and Mallery (2003) provide the following rules of thumb: "_ > .9 – Excellent, _ > .8 – Good, _ > .7 – Acceptable, _ > .6 – Questionable, _ > .5 – Poor, and_ < .5 – Unacceptable"

Based on the Cronbach alpha assessment, overall, the variable of the challenges of the vocational core competency questionnaire good, which indicates that the totality of the questionnaire is reliable with a Cronbach Alpha of .93 in the basic professional core competency, .89 in the professional interpersonal relationship and team cooperation ability questionnaire, .86 in the rational thinking and decision-making ability, and 0.87 in the overall vocational core competency questionnaire.

3.5. Data Gathering Procedure

The researcher requested permission to do this research by

sending a letter to the deans of several colleges in Deyang Vocational institution of Technology and Trade. Following clearance from the school deans, the questionnaire was given to the participating students after the requirements of the study has been briefed and the student-respondents signed the informed consent form.

After the student-respondents have completed the questionnaire, the researcher assessed the collected data, and used that to make descriptive analyses of the research output [7]. The proposed program and output from this study is expected to be implemented in the schools within one year of completing the study – in the first quarter of 2023/2024 school year.

3.6. Statistical Treatment of Data

The following are the statistical tools to be used in the assessment of the research objectives:

3.6.1. Weighted Mean

This will be used to make an assessment of the vocational core competencies of the students. It will collate the level of competence of the students in their basic professional competence, professional interpersonal relationship and team cooperation ability, rational thinking and decision-making ability, and their personality ability.

3.6.2. T-test Analyses/Mann Whitney

Either of these will be used to test the significant differences of the study. The researcher will determine the significant difference on the assessment of the student-respondents in vocational core competencies when their profiles are taken as test factors. The Mann Whitney test is a non-parametric counterpart of the t-test.

3.7. Ethical Considerations

The confidentiality of this research has been carefully examined. The researcher ensured that the policies and regulations of Adamson University Graduate School were followed in terms of the respondents' involvement in this study and the overall conduct and research procedure [8]. The data collection restrictions of Adamson University have been well grasped by the participating students from the selected institution.

4. Results, Interpretation and Discussion

In this chapter, the researcher tabulated and discussed the research findings with the developed output.

4.1. Profile of the Student-Respondents

Table 2. Frequency Distribution of the Students' Profile in terms of Sex, Age, and Major.

Category	Frequency1	
Sex		
Male	133	(53.2)
Female	117	(46.8)
Age		
17 - 19 years old	84	(33.6)
20 - 22 years old	89	(35.6)
23 years old and above	77	(30.8)
Major		
Financial Services and Accounting	82	(32.8)
E-Commerce	96	(38.4)
Marketing	72	(28.8)

The results show that majority or 53.2% of the student-respondents are male, while 117 (46.8%) of them are females. In terms of age, majority or 35.6% of the respondents are 20-22 years old, followed by 33.6% of those that are 17-19 years old, and 30.8% of those that are 23 years old and above. In terms of their major, majority or 32.8% of them are from financial services and accounting department, 38.4% are from E-commerce department, and 28.8% are from the marketing department (table 2).

4.2. Self-assessment of the Student Respondents in Vocational Core Competencies

The table made an assessment of the students' basic professional competence as a part of their vocational core competence attribute. As shown in the findings, the students' responses suggests that their basic professional competence level is low (table 3). The indicator "Provide team leadership" got the highest assessment score of 2.54. Meanwhile the indicator "Good in oral and written communication skills" got the least score of 2.41.

Table 3. Self-assessment of the student-Respondents' Vocational Core Competencies in terms of Basic Professional Competence.

Statements	Mean (SD)	Interpretation
Basic Professional Competence		
Has basic knowledge about the vocational courses.	2.44 (1.11)	Disagree
Good in oral and written communication skills	2.41 (1.12)	Disagree
Provide team leadership	2.54 (1.14)	Agree
Use relevant technology	2.48 (1.13)	Disagree
Participate in workplace communication	2.46 (1.10)	Disagree
Set and meet work priorities	2.45 (1.12)	Disagree
Evaluate hazards and risks	2.42 (1.08)	Disagree
MEAN SCORE	2.46 (0.41)	Low

SD = standard deviation. 1.00 – 1.75 Strongly Disagree; 1.76 – 2.50 Disagree; 2.51 – 3.25 Agree; 3.26 – 4.00 Strongly Agree

The assessment of on the students' basic professional competencies shows a low competence level on their basic knowledge about the vocational courses, low oral and written communication skills, team leadership, ability to use relevant technology, workplace communication, meeting work priorities, and ability to evaluate hazards and risks. Meanwhile, they showed a high level of competence in their ability to provide team leadership.

According to Jones & Johnson, Basic Professional Competence refers to the fundamental abilities, knowledge, and characteristics that students should have in order to meet the expectations of their chosen occupational disciplines. It includes both practical and theoretical knowledge, allowing students to perform well in their future careers. Technical expertise, problem-solving abilities, communication skills, collaboration, flexibility, and a professional work ethic.

Various training and reform programs have been conducted to address the special requirements of vocational core

competency among Chinese students [9]. For example, there has been a greater emphasis on work-integrated learning, which helps students to get practical experience and apply their abilities in real-world settings. Furthermore, vocational institutes in China have included industry partnerships and internships to expose students to industry practices and support the development of industry-specific abilities.

The table made an assessment of the students' professional interpersonal relationship and team cooperation ability as a part of their vocational core competence attributes. As shown in the findings, the students' responses suggests that their professional interpersonal relationship and team cooperation ability level is low (table 4).

Table 4. Self-assessment of the student-Respondents' Vocational Core Competencies in terms of Professional Interpersonal Relationship and Team Cooperation Ability.

Professional Interpersonal Relationship and Team Cooperation Ability	Mean (SD)	Interpretation
Work collaboratively with teammates.	2.32 (1.12)	Disagree
Assign responsibilities to teammates.	2.49 (1.12)	Disagree
Set performance expectations.	2.58 (1.10)	Agree
Work on a common goal.	2.59 (1.13)	Agree
Work in a team environment	2.47 (1.13)	Disagree
Practice career professionalism	2.56 (1.15)	Agree
Practice occupational health and safety	2.42 (1.14)	Disagree
MEAN SCORE	2.49 (0.42)	Low

SD = standard deviation. 1.00 – 1.75 Strongly Disagree; 1.76 – 2.50 Disagree; 2.51 – 3.25 Agree; 3.26 – 4.00 Strongly Agree

The indicator "Work on a common goal." got the highest assessment score of 2.59. Meanwhile the indicator "Work collaboratively with teammates." got the least score of 2.32.

The assessment of the students' professional interpersonal relationship and team cooperation ability shows a low competence level on their ability to work collaboratively with teammates, assign responsibilities to teammates, work in a team environment, and practice occupational health and safety. However, they showed a high level of competence in their ability to set performance expectations, work on a common goal, and practice career professionalism.

Additionally, collaboration and teamwork are vital components of vocational core competency. In today's business, the ability to work effectively in diverse teams, demonstrate interpersonal skills, and contribute to shared goals is highly valued [10]. To achieve the the desired outcomes, vocational students must learn to interact, handle problems, and leverage the strengths of team members. Given the rapid pace of change in industries and technology, adaptability is another critical feature of vocational core competency. Graduates must be able to master new skills, adapt to changing employment needs, and operate in uncertain circumstances.

The table made an assessment of the students' rational thinking and decision-making ability as a part of their vocational core competence attributes [11]. As shown in the findings, the students' responses suggests that their rational thinking and decision-making ability is low (table 5).

Table 5. Self-assessment of the student-Respondents' Vocational Core Competencies in terms of Rational Thinking and Decision-Making Ability.

Rational Thinking and Decision-Making Ability	Mean (SD)	Interpretation
Good in identifying problem in the workplace	2.57 (1.12)	Agree
Determine the causes and solutions to problems.	2.49 (1.12)	Disagree
Analyze the results.	2.55 (1.15)	Agree
Make a wise decision	2.45 (1.08)	Disagree
Can perform mathematical operations	2.44 (1.14)	Disagree
Logical in thinking	2.55 (1.12)	Agree
Apply higher order thinking skills	2.42 (1.12)	Disagree
MEAN SCORE	2.50 (0.43)	Low

SD = standard deviation. 1.00 – 1.75 Strongly Disagree; 1.76 – 2.50 Disagree; 2.51 – 3.25 Agree; 3.26 – 4.00 Strongly Agree

The indicator "Good in identifying problem in the workplace" got the highest assessment score of 2.57. Meanwhile the indicator "Apply higher order thinking skills." got the least score of 2.42. The assessment of the students' rational thinking and decision-making ability shows a low competence level on their ability to determine the causes and solutions to problems, make a wise decision, perform mathematical operations, and apply higher order thinking skills. However, they showed a higher level of competence in their ability to identify problems in the workplace, analyze results, and think logically. Another key part of vocational core competency among Chinese students is the development of entrepreneurial and innovative skills [12]. As China strives to develop a culture of innovation and entrepreneurship, there is a growing acknowledgment of the need for vocational students to possess the skills to see possibilities, think creatively, and take initiative. Chinese vocational institutions are progressively combining entrepreneurship instruction and cultivating an entrepreneurial mindset among students, allowing them to contribute to China's innovation-driven economy.

Various training and reform programs have been conducted to address the special requirements of vocational core competency among Chinese students [13]. For example, there has been a greater emphasis on work-integrated learning, which helps students to get practical experience and apply their abilities in real-world settings.

The table made an assessment of the students' personality ability as a part of their vocational core competence attributes. As shown in the findings, the students' responses suggests that their personality ability is low (table 6).

The indicator "Well-groomed always" got the highest assessment score of 2.59. Meanwhile the indicator "Physically and mentally fit." got the least score of 2.42. The assessment of the students' personality ability shows a low competence level on their emotional intelligence, cognitive ability, good moral character, and physical and mental fitness [14]. However, the assessment shows a high level of

competence in their pleasing personality, value-laden attribute, their ability to stay well-groomed.

Table 6. Self-assessment of the student-Respondents' Vocational Core Competencies in terms of Personality Ability.

Personality Ability	Mean (SD)	Interpretation
Pleasing personality	2.57 (1.09)	Agree
Emotional Intelligence	2.48 (1.11)	Disagree
Cognitive ability	2.45 (1.14)	Disagree
Value-laden attitude	2.51 (1.09)	Agree
With good moral character	2.49 (1.15)	Disagree
Physically and mentally fit	2.42 (1.12)	Disagree
Well-groomed always	2.59 (1.11)	Agree
MEAN SCORE	2.50 (0.45)	Low

SD = standard deviation. 1.00 – 1.75 Strongly Disagree; 1.76 – 2.50 Disagree; 2.51 – 3.25 Agree; 3.26 – 4.00 Strongly Agree

Vocational core competence entails a combination of technical proficiency, problem-solving abilities, communication skills, collaboration, flexibility, and critical thinking, among other things. In recent years, the notion of vocational core competency has received substantial attention, highlighting the significance of providing higher vocational students with the competences expected by businesses and the expanding job market. In also includes technical expertise, problem-solving abilities, cooperation and collaboration, communication skills, flexibility, and a strong work ethic are among these capabilities [15]. Smith and Johnson learned that students with well-developed vocational core skills were more likely to get work and advance in their careers than those who did not have these competencies.

Based on the summary table of the vocational core competence of the students, the students were found to have an overall low level of vocational competence (M=2.49). The highest ranked dimensions were rational thinking and decision-making ability (M=2.50), and personality ability (M=2.50). The least dimension was basic professional competence (M=2.46). In professional interpersonal relationship and team cooperation, the mean was 2.49 (table 7).

Table 7. Summary of the Self-assessment of the student-Respondents' Vocational Core Competencies.

Vocational Core Competences	Mean (SD)	Qualitative Description	Interpretation	Rank
Basic Professional Competence	2.46 (2.41)	Disagree	Low Level	3
Professional Interpersonal Relationship and Team Cooperation	2.49 (0.42)	Disagree	Low Level	2
Rational Thinking and Decision-Making Ability	2.50 (0.43)	Disagree	Low Level	1
Personality Ability	2.50 (0.45)	Disagree	Low Level	1
MEAN SCORE	2.49 (0.59)	Disagree	Low Level	

SD = standard deviation. 1.00 – 1.75 Strongly Disagree/ Very Low Level; 1.76 – 2.50 Disagree/Low Level; 2.51 – 3.25 Agree/High Level; 3.26 – 4.00 Strongly Agree/Very High Level

Vocational core competency extends beyond the development of theoretical knowledge and technical abilities. It incorporates a comprehensive strategy that blends both hard and soft skills to guarantee graduates are well-prepared for the workforce. Technical expertise is the foundation of vocational core competence, equipping students with the industry-specific knowledge and abilities needed to perform job-related activities efficiently [16]. This involves knowledge of specialized procedures, equipment operation, and industry-specific regulations. However, vocational core competency also includes a variety of transferable abilities that are useful across industries and job roles.

Problem-solving abilities are essential for vocational core competency for the reason that they allow individuals to recognize and handle issues in real-world work contexts. To examine complicated circumstances, evaluate viable solutions, and make reasoned judgments, vocational students must acquire critical thinking abilities. This includes the capacity to apply theoretical information to real-world circumstances, spot patterns, and come up with novel solutions. Effective communication skills, including both verbal and written communication, are also essential within occupational core competency [17]. Vocational professionals must be able to properly communicate information, work with peers, and deal with clients or consumers.

Based on the study findings, since the p-values are greater than alpha, there are no significant difference in the assessment of the basic professional competence of the students in terms of their age (0.6067), sex (0.9705), and major (0.6051) (table 8).

Table 8. Difference in the Assessment of the Students' Basic Professional Competence Based on Demographic Profile

Profile	p-value	Interpretation
Basic Professional Competence		
Age	0.6067	No significant difference
Sex	0.9705	No significant difference
Major	0.6051	No significant difference

**A p-value <0.05 is considered significant.*

Johnson and Davis conducted a qualitative study to investigate the influence of internships on the development of rational thinking abilities in higher vocational students. The findings emphasized the value of internships in providing students with practical experiences that improve their capacity to think logically and make informed judgments in real-world vocational contexts [18]. Based on the study findings, since the p-values are greater than alpha, there are no significant difference in the assessment of the professional interpersonal relationship and team cooperation ability of the students in terms of their age (0.7150), and sex (0.1410). However, in term of their major (0.0071), there is a significant difference (table 9).

Cognitive abilities such as information processing, knowledge acquisition, and analytical thinking all play an important role in the development of one's own capacities. According to research, students with great cognitive skills have better degrees of problem-solving skills and critical thinking, which benefits their entire personal capacities [19]. Based on the study findings, since the p-values are greater

than alpha, there are no significant difference in the assessment of the rational thinking and decision-making ability of the students in terms of their age (0.7401), sex (0.0678), and major (0.3674) (table 10).

Table 9. Difference in the Assessment of the Students' Professional Interpersonal Relationship and Cooperation Ability Based on Demographic Profile

Profile	p-value	Interpretation
Professional Interpersonal Relationship and Team Cooperation Ability		
Age	0.715	No significant difference
Sex	0.141	No significant difference
Major	0.0071	Significant difference

**A p-value <0.05 is considered significant.*

Table 10. Difference in the Assessment of the Students' Rational Thinking and Decision-Making Ability Based on Demographic Profile.

Rational Thinking and Decision-Making Ability		
Age	0.7401	No significant difference
Sex	0.0678	No significant difference
Major	0.3674	No significant difference

**A p-value <0.05 is considered significant.*

Morewedge et al. also explore the efficiency of "one-shot" training sessions intended for minimizing decision biases. The findings of their longitudinal studies, particularly the significantly decreased biases in both post-test and follow-up analyses, imply that even a single training session can lead to improved individual decision making [20]. Finally, Zhang et al. investigate how different instructional styles impact children's decision-making abilities. Their study emphasizes the need of an embedded issue-based, socio-scientific decision-making curriculum for young students; it also indicates that collaborative engagement, rather than direct instruction, is the most effective approach to transmit decision-making competencies [21]. Based on the study findings, since the p-values are greater than alpha, there are no significant difference in the assessment of the personality ability of the students in terms of their age (0.9112), sex (0.5550), and major (0.1297) (table 11).

Table 11. Difference in the Assessment of the Students' Personality Ability Based on Demographic Profile.

Personality Ability		
Age	0.9112	No significant difference
Sex	0.555	No significant difference
Major	0.1297	No significant difference

**A p-value <0.05 is considered significant.*

Providing students with chances for internships, cooperative education, and industrial partnerships may considerably contribute to the development of personal talents. Students can obtain practical skills, get industry insights, and build the human attributes essential for effective vocational performance by exposing them to genuine professional situations.

53.2% of the student-respondents are male, while 117 (46.8%) of them are females. 35.6% of the respondents are 20-22 years old, followed by 33.6% of those that are 17-19 years old, and 30.8% of those that are 23 years old and above. 32.8% of them are from financial services and accounting department, 38.4% are from E-commerce department, and 28.8% are from the marketing department. The students were found to have an overall low level of vocational competence (M=2.49). The highest ranked dimensions were rational thinking and decision-making ability (M=2.50), and personality ability (M=2.50). The least dimension was basic professional competence (M=2.46). In professional interpersonal relationship and team cooperation, the mean was 2.49. There are no significant differences in the assessment of the basic professional competence of the students in terms of their age (0.6067), sex (0.9705), and major (0.6051). There are no significant differences in the assessment of the professional interpersonal relationship and team cooperation ability of the students in terms of their age (0.7150), and sex (0.1410). In term of their major (0.0071), there is a significant difference. There is no significant difference in the assessment of the rational thinking and decision-making ability of the students in terms of their age (0.7401), sex (0.0678), and major (0.3674). There is no significant difference in the assessment of the personality ability of the students in terms of their age (0.9112), sex (0.5550), and major (0.1297).

The developed vocational core competence program will be helpful to apply appropriate problem-solving and decision-making processes; to identify challenges hindering the students from attaining high ability and competence level in basic professional competence; highlight common obstacles to effective problem-solving and decision-making; evaluate solutions and anticipate likely risks. The program may also help students develop their interpersonal relationships and communication skills. The program cost is estimated to be around 15,000 RMB including the costs for the speakers during the organized seminar.

5. Conclusion

Based on the respondents' profiles, there are more males than females, mostly between 20-22 years old, and majority are from the E-commerce department. The students showed a low competence level on their basic knowledge about the vocational courses, low oral and written communication skills, team leadership, ability to use relevant technology, workplace communication, meeting work priorities, and ability to evaluate hazards and risks. Meanwhile, they showed a high level of competence in their ability to provide team leadership. The students also showed a low competence level on their ability to work collaboratively with teammates, assign responsibilities to teammates, work in a team environment, and practice occupational health and safety. However, they showed a high level of competence in their ability to set performance expectations, work on a common goal, and practice career professionalism. The students showed a low competence level on their ability to determine the causes and solutions to problems, make a wise decision, perform mathematical operations, and apply higher order thinking skills. However, they showed a higher level of competence in their ability to identify problems in the workplace, analyze results, and think logically. In personality ability, the students showed a low competence level on their emotional intelligence, cognitive ability, good moral character, and

physical and mental fitness. However, the assessment shows a high level of competence in their pleasing personality, value-laden attribute, and their ability to stay well-groomed. There are no significant differences in the student-respondents self-assessment of their vocational core competence when their profiles are taken as test factors. The developed instructional program for vocational training may assist in boosting the professional core competence of students in terms of their interpersonal relationship and team cooperation, rational and creative thinking, decision-making ability, and personality ability.

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