

Strategies Development for Sustainable Development Student's Career Values Education in Higher Vocational Colleges, Hunan Province

Xu Hui¹, Luxana Keyuraphan^{1,*}, Phadet Kakham¹, Sarayuth Sethakhajorn¹ & Chawalit Jujia¹

¹Graduate School, Bansomdejchaopraya Rajabhat University, Bangkok, Thailand

*Correspondence: Graduate School, Bansomdejchaopraya Rajabhat University, Bangkok, Thailand. E-mail: luxanakeyuraphan@gmail.com

Received: July 24, 2024

Accepted: August 20, 2024

Online Published: September 12, 2024

doi:10.5430/wje.v14n3p66

URL: <https://doi.org/10.5430/wje.v14n3p66>

Abstract

This study aimed to 1) study the current situation of students' career values in the higher vocational college in Hunan province, 2) study strategies for sustainable development of students' career values in the higher vocational college in Hunan province, and 3) evaluate the feasibility of the strategies for sustainable development students' career values in the higher vocational college in Hunan province. This study employed a mixed methods research design, combining quantitative and qualitative research methods. According to the Krejcie and Morgan sampling table, the sample group of this research will consist of 384 students randomly selected from 6 higher vocational colleges in Hunan to study the current situation of students' career values education in higher vocational colleges in Hunan province. The research instruments were 1) a questionnaire, 2) a structured interview, and 3) an evaluation form. Data analysis was used for percentage, M , and content analysis. The research findings revealed the following: 1) the current state of students' career values in higher vocational colleges in Hunan Province in four aspects was high ($M=3.93$). Considering the results of this research, aspects ranged from the highest to lowest level were as follows: the highest level was career skills ($M=3.96$), followed by career psychology ($M=3.94$), career planning ($M=3.92$), and career ethics was the lowest level ($M=3.89$); 2) the strategies for improving the sustainable development of students' career values education in higher vocational colleges in Hunan Province divided into four aspects which contain 29 measures. There are 5 measures for enhancing career ethics, 6 measures for enhancing career skills, 9 measures for enhancing career psychology, and 9 measures for enhancing career planning; and 3) the adaptability and feasibility of strategies for improving the sustainable development of students' career values education in higher vocational colleges in Hunan Province in four aspects were at the highest level with the $M=4.80$ and $M=4.80$ which are adaptable and feasible.

Keywords: strategies development, sustainable development, student's career values, education, higher vocational colleges

1. Introduction

1.1 Rationale

The researcher of this study, Xu Hui, employed at Hunan Environmental Biology Polytechnic College as a teacher for graduate employment guidance, has observed numerous challenges graduates from vocational colleges face in their career selection process, including low job satisfaction, high turnover rates, and relatively low wages. Vocational education plays a pivotal role in China's education system. In the era of economic transformation and development, the demand for high-quality technical talents in society is also growing with the acceleration of occupational changes and the increasing variety of job types. Consequently, there is an urgent need for many high-quality technical workers in the industry. The primary task of higher vocational colleges is to train advanced technicians. These institutions are committed to cultivating comprehensive talents who possess solid professional knowledge, technical skills, and sound professional values to address the structural contradiction between training high-quality technical talent and market demands. The "National Medium and Long-term Educational Reform and Development Plan (2010—2020)" explicitly proposes developing vocational education, emphasizing cultivating students' professional ethics and skills to meet the socio-economic needs for high-quality labor and skilled talents.

In reality, when facing career choices, many graduates from higher vocational colleges tend to avoid hardship and laborious work, showing aversion towards harsh working environments such as workshops and factories. According to Liu (2021), the fundamental reason lies in the deviation of students' vocational values. Zhu and Zhang (2013) argue that, in current circumstances, students from higher vocational colleges exhibit a trend toward utilitarian vocational value orientation. Their employment expectations are diversified, yet their job-seeking psychology shows contradictions. The vocational values of college students are the complex results of the interaction of various factors, including society, family, school, and individual. Higher vocational colleges should focus on education around vocational values, encompassing professional ideals, attitudes, and career planning.

The United Nations hosted a summit where they proposed the "2030 Agenda for Sustainable Development," including 17 Sustainable Development Goals (SDGs) to be achieved by 2030. Goal 4 focuses on "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all," highlighting the importance of high-quality education, economic growth, and reducing inequalities. Goal 8, "Decent Work and Economic Growth," encompasses educating students about the value of various types of work, fostering their professional ethics and skills, and contributing to personal and societal economic development.

Hunan, located in the central south of China, has a geographical position that is less advantageous than that of developed coastal areas, leading to relatively slower regional economic development. The researcher, focusing on the employment challenges faced by graduates of vocational colleges in Hunan and aligning with the Sustainable Development Goals, delves into the educational content of vocational values for these students. This study constructs a content system for vocational values education from four dimensions: career ethics, career psychology, career planning, and career skills. It aims to effectively guide students in establishing correct career perspectives, enhancing their employability, and facilitating a smooth transition to the workplace. Higher vocational education in Hunan is designed to serve local development with an employment-oriented approach. It systematically cultivates students' values regarding sustainable development, guiding them to make socially and environmentally beneficial choices in daily life and professional development. This study, addressing the challenges faced by vocational students in Hunan during career selection, proposes practical development strategies. It emphasizes strengthening students' career ethics, career psychology, career skills, and career planning, thereby promoting the establishment of sustainable vocational values among higher vocational students in Hunan and achieving the goal of sustainable development in vocational education in the region.

1.2 Research Questions

1. What is the current situation of students' career values in higher vocational colleges in Hunan province?
2. What strategies can be formulated to sustain students' career values in higher vocational colleges in Hunan province?
3. What is the feasibility of strategies for the sustainable development of students' career values in higher vocational colleges in Hunan province?

1.3 Objectives

1. To study the current situation of students' career values in higher vocational colleges in Hunan province.
2. To study strategies for sustainable development of students' career values in higher vocational colleges in Hunan province.
3. To evaluate the feasibility of the strategies for sustainable development of students' career values in higher vocational colleges in Hunan province.

2. Literature Review

2.1 Concept and Theory of Development Strategy

Definition of development strategy

A development strategy can be defined as a comprehensive plan designed to promote sustainable economic, social, and environmental progress. It involves making deliberate choices and taking specific actions to drive progress within a community or organization.

Nayal et al. (2021) discuss the impact of a sustainable development strategy on sustainable supply chain firm performance in the digital transformation era. The paper explores the implications of implementing a sustainable development strategy within supply chain operations.

Karachi and Bounabat (2020) focus on developing a frame of reference for intelligent city strategy development and governance. Their research provides insights into the various components and considerations in shaping effective, innovative city strategies, emphasizing the role of technology and innovation.

Al-Mubarak and Busler (2013) comprehensively review business incubation as an economic development strategy. The paper delves into the various theories and practices associated with business incubation, shedding light on its potential benefits for economic growth and innovation.

Furthermore, Guo et al. (2021) investigate the impact of a regional green development strategy on environmental total factor productivity in the context of the Yangtze River Economic Belt in China. The study offers valuable insights into the ecological implications of regional development strategies, particularly in high-density economic zones.

In addition, Tian (2013) examines the early adaptation of the One Village One Product (OVOP) rural development strategy in Vietnam. The research highlights the practical implications of implementing endogenous development strategies within rural communities, focusing on job creation, creativity enhancement, and local empowerment.

In conclusion, these studies collectively contribute to our understanding of development strategies, offering insights into sustainable supply chain performance, innovative city governance, business incubation, environmental productivity, and rural development initiatives. With the insights from these works, it is possible to gain a richer understanding of the multifaceted nature of development strategies and their implications for sustainable progress.

2.2 The Concept of Sustainable Development Education Strategy

The idea of sustainable development education strategy is a crucial topic in the current era, with growing concerns about the environment, climate change, and social responsibility. Educating future generations about sustainable development is a multidimensional challenge that requires innovative and effective strategies.

Popov (2023) sheds light on the opportunity to improve training effectiveness in achieving sustainable development principles by using KmPlot software to teach further mathematics, leading to improved learning outcomes for future economists.

Olive and Enright (2021) highlight the ecofeminist sustainability analysis in the Australian Health and Physical Education Curriculum, emphasizing the need to engage with the interconnections between human and environmental health to promote a more ecological and ethical understanding of sustainability.

Agirreazkuenaga (2019) provides insights into the implementation of educational practical experiences of sustainability programs in secondary schools from the teachers' perspective, emphasizing the essential role of teaching staff and the support of school authorities in the success of sustainability programs.

Martín-Sánchez et al. (2022) present the design, implementation, and evaluation of a Service Learning methodology as an Education for Sustainable Development (ESD) strategy in a university course, emphasizing the significant increase in the student's knowledge about innovative teaching strategies and the Sustainable Development Goals (SDGs).

Michel (2020) maps out students' opportunities to learn about sustainability across the higher education curriculum, acknowledging the importance of integrating sustainability education into higher education to prepare students for addressing global sustainability challenges.

Bissinger and Bogner (2018) discuss education on tropical rainforests and climate change to foster environmental literacy and promote sustainability education, emphasizing the practical application of ecological education in specific contexts.

In conclusion, the literature highlights the diverse efforts in implementing sustainable development education strategies, emphasizing the importance of engaging teaching staff, integrating sustainability into the curriculum, and promoting practical experiences to enhance student learning and understanding of sustainability principles. These approaches reflect the multi-faceted nature of sustainable development education and the need for comprehensive strategies to address environmental and social challenges.

2.3 Factors Influencing the Implementation of Development Strategies

The implementation of development strategies is a complex process that involves various factors. Several studies have delved into the different elements influencing the successful execution of strategy in diverse contexts. Salih et al. (2022) surveyed the Critical Success Factors (CSFs) influencing the implementation of Enterprise Resource Planning (ERP) systems in the Saudi Arabian food industry. The research provided a rating of CSFs from the users'

perspective, enabling decision-makers to assess project risks better and discover the ERP users' strengths and limitations.

Huang et al. (2018) focused on unpacking partnership, engagement, and collaboration (PEC) research in the context of health to inform the development of implementation strategies. The study identified critical domain factors, processes, and key strategies for PEC, contributing to knowledge in Dissemination and Implementation (D&I). Another relevant work by Shongwe et al. (2014) explored the factors influencing households' choice of climate change adaptation strategies, specifically in the Mpolonjeni Area Development Programme (ADP) in Swaziland. The research provided insights into the adaptation strategies employed by households and the factors influencing their choices, offering valuable information for implementing adaptation strategies.

Furthermore, Luan (2023) investigated the identification of factors influencing the development of photovoltaic (PV) implementation in Singapore. The study examined the obstacles, potentials, and drivers that could facilitate and accelerate building-integrated photovoltaics (BIPV) and PV façade integration, offering insights for developing a long-term holistic strategy for PV implementation in urban environments. In conclusion, the implementation of development strategies is influenced by various factors, which can be classified into two dimensions: internal and external. Internal factors typically refer to an organization's resources, capabilities, and structure. In contrast, external factors involve changes in the market environment, policies and regulations, and societal values outside the organization.

2.4 Concept and Theory of Higher Vocational Education

The conceptual definition of higher vocational education is subject to differing viewpoints primarily rooted in debates concerning the hierarchical levels and types of higher vocational education. The following are rephrased representations of these viewpoints:

One perspective emphasizes the hierarchical aspect of higher vocational education, defining it as a stage within higher education. It is classified as ISCED5, the tertiary level of education, in the "International Standard Classification of Education." In China's legal framework, higher vocational education is considered a part of higher education. Article 68 of the "Higher Education Law of the People's Republic of China," enacted in 1998, specifies that higher education institutions include higher vocational colleges, thus positioning higher education as a tier within higher education.

Another perspective emphasizes the types of higher vocational education, primarily encompassing vocational and technical education, which fall under the category of tertiary-level education. For instance, according to the viewpoint of Professor Pan Maoyuan, higher vocational education is regarded as an education type distinct from general higher education, following the "type theory." The "Encyclopedia of Education" also explains that higher vocational education comprises vocational and technical education, both falling under the tertiary level. Policy documents also underscore the type dimension of higher vocational education. In 2006, the "Opinions of the Ministry of Education on Enhancing the Teaching Quality of Higher Vocational Education" stated: "Higher vocational education, as a type within higher education, bears the mission of nurturing high-level technical professionals to meet the frontline needs of production, construction, service, and management."

Another perspective centers on educational objectives; scholars such as Yang Jintu stress that the primary purpose of higher vocational education is to cultivate high-level technical professionals, including senior technicians, technologists, and technical engineers. Furthermore, some scholars, based on the distinct disciplinary nature of higher vocational education compared to undergraduate education, assert that higher vocational education is designed to train practical talents in various fields, such as production, construction, management, and social services, in line with the specific operational demands of certain occupational positions or clusters.

In conclusion, although there exist varying emphases and debates within academia regarding the definition of higher vocational education, there is consensus on the fundamental understanding and scope of its educational objectives. According to the explanation provided by the "Encyclopedia of Chinese Education," this article primarily focuses on defining higher vocational education in terms of its form as a school-based education, predominantly admitting graduates from secondary vocational and technical schools and general high schools. Its core objective is to cultivate students' practical skills and produce advanced applied talents and high-level skilled workers for various sectors of the national economy.

2.5 Research Status of Higher Vocational Colleges

The United Nations Educational, Scientific and Cultural Organization (UNESCO), the Organization for Economic Co-operation and Development (OECD), the European Union (EU), and other international organizations play

indispensable roles in advancing the theoretical research and practical exploration of global vocational education. As early as 2012, UNESCO explicitly underscored the strategic importance of vocational education in societal development and economic progress through its publication "Transformation of Vocational Education: Nurturing Work and Life Skills," delving into governance structures of vocational education with concrete examples. Governments are urged to provide greater autonomy for developing vocational education, actively guide establishment of stable and long-term collaborative relationships among stakeholders, and create scientifically sound safeguards and efficient policy support mechanisms. It is generally acknowledged that the healthy and sustainable development of vocational education hinges on addressing the following critical issues: government entities should fully assume their responsibilities in promoting vocational education development and facilitating the achievement of vocational education's long-term objectives; enhancing cooperative and mutually beneficial relationships among relevant stakeholders to elevate the equilibrium development level of vocational education; and establishing a quality monitoring system for vocational education development that is tailored to the characteristics of various countries and regions. This perspective aligns with the principles of multi-stakeholder cooperation advocated in the "21st Century Higher Education: A World Declaration of Action and Prospects," emphasizing that the coordination and collaboration among governmental bodies, societies, industries, enterprises, and universities will be the prevailing trend in the future development of higher vocational education.

3. Methodology

3.1 The Population and Sample Group

3.1.1 Population and the Sample Group

This study takes 95,000 higher vocational college students, 185 career planning course lecturers, and 280 administrators for questionnaire survey and interview. As the research object we select six research objects: Hunan Polytechnic of Environment Biology, Hunan Financial and Industrial Vocational-technical College, Yongzhou Vocational Technical College, Changsha Social Work College, Chenzhou Vocational and Technical College, Loudi Vocational and Technical College.

3.1.2 The Sample Group

According to Krejcie and Morgan's sampling table, the sample group will consist of 384 students randomly selected from 6 higher vocational colleges in Hunan to study the current situation of students' career values education in the higher vocational college in Hunan province.

Table 1. Lists of Sampling Table

| NO | Higher vocational college in Hunan province | Population | Sample Group |
|-------|---|------------|--------------|
| 1 | Hunan Polytechnic of Environment Biology | 16000 | 65 |
| 2 | Hunan Financial and Industrial Vocational-technical College | 12000 | 48 |
| 3 | Yongzhou Vocational Technical College | 20000 | 81 |
| 4 | Changsha Social Work College | 20000 | 81 |
| 5 | Chenzhou Vocational and Technical College | 8000 | 32 |
| 6 | Loudi Vocational and Technical College | 19000 | 77 |
| Total | | 95000 | 384 |

3.1.3 Structure Interview Group

This study adopts a random sampling method to select 6 teachers and 6 administrators from 6 higher vocational colleges—a total sample size of 12 individuals.

As shown in Table 2:

Table 2. Lists College and Structured Interview Group

| NO | Higher vocational college in Hunan province | Interviewers | |
|----------------------------|---|--------------|----------------|
| | | Teachers | Administrators |
| 1 | Hunan Polytechnic of Environment Biology | 1 | 1 |
| 2 | Hunan Financial and Industrial Vocational-technical College | 1 | 1 |
| 3 | Yongzhou Vocational Technical College | 1 | 1 |
| 4 | Changsha Social Work College | 1 | 1 |
| 5 | Chenzhou Vocational and Technical College | 1 | 1 |
| 6 | Loudi Vocational and Technical College | 1 | 1 |
| Total number of interviews | | 12 | |

3.1.4 Evaluation Group

This study invites six experts and scholars in the development of higher vocational education in Hunan to evaluate the feasibility of strategies for sustainable development in career values education at higher vocational colleges in Hunan Province. The qualifications of interviewees are as follows: 1) Some teachers have 10 years of teaching experience in educational management at a vocational college, 2) The respondent should have research experience in the field of education for sustainable development, 3) An academic title of associate professor or higher.

As shown in Table 3.

Table 3. Lists of University and Expert Size

| No. | Higher vocational college in Hunan province | Expert |
|-------------------------|---|--------|
| 1 | Hunan Polytechnic of Environment Biology | 1 |
| 2 | Hunan Financial and Industrial Vocational-technical College | 1 |
| 3 | Yongzhou Vocational Technical College | 1 |
| 4 | Changsha Social Work College | 1 |
| 5 | Chenzhou Vocational and Technical College | 1 |
| 6 | Loudi Vocational and Technical College | 1 |
| Total number of experts | | 6 |

4. Research Instruments

4.1 Questionnaire

Part 1: Information about the respondent, including gender, grade level, household income, and place of origin.

Part 2: The current situation of students' career values in the higher vocational college in Hunan province is the formal part of the questionnaire and is a survey of the four aspects of students' career values. There are 10 questions for career skills, 10 for career ethics, 9 for career planning, and 9 for career psychology, totaling 38 questions. The criteria for data interpretation based on a five-point Likert's scale, as follows:

5 express the level of students' career values in higher vocational college are at the highest level

4 express the level of students' career values in higher vocational college are at a high level

3 express the level of students' career values in higher vocational college is at a medium level

2 express the level of students' career values in higher vocational college are at the low level

1 express the level of students' career values in higher vocational college is at the lowest level

The data interpretation for average value is based on Rensis Likert (1932). The data interpretation is as follows:

4.50 – 5.00 express highest level

3.50 – 4.49 express high level

2.50 – 3.49 express medium level

1.50 – 2.49 express low level

1.00 – 1.49 express lowest level

Constructing a questionnaire process

The construction process of the questionnaire is as follows:

Step 1: Review documents, concepts, theories, and research on students' career values education in higher vocational colleges.

Step 2: Construct the questionnaire about the current situation of students' career values in higher vocational colleges. Then, the questionnaire outline will be sent to the thesis advisors so they can review and revise the contents according to the suggestions.

Step 3: Validate the questionnaire by assessing its Interrater Objectivity Coefficient (IOC) with three experts.

Step 4: Revise the questionnaire based on the experts' suggestions.

Step 5: The questionnaire will be distributed to 30 administrators in higher vocational colleges for tryouts.

Step 6: The questionnaire will be applied to 384 students from six representative higher vocational colleges and waiting for data collection.

4.2 Structured Interviews

The instrument used to collect the data for the objective was a structured interview.

Step 1: Create an interview outline of the current situation and strategies in career ethics, career psychology, career skills, and career planning.

Step 2: Conduct face-to-face interviews with 10 higher vocational college teachers and administrators

Step 3: Collect the interview data.

Step 4: Collect the current status of students' career values education in higher vocational colleges through the interview data.

4.3 Evaluation Form

The instrument to collect the data for objective 3 is to evaluate the adaptability and feasibility of strategies for sustainable development of students' career values education in higher vocational colleges in Hunan province. At this stage, 6 experts from six representative higher vocational colleges in Hunan province are invited to evaluate the adaptability and feasibility of the strategies by using the Likert scale method. The data interpretation for average value is based on Likert (1932). The data interpretation is as follows:

4.50 – 5.00 express highest level

3.50 – 4.49 express high level

2.50 – 3.49 express medium level

1.50 – 2.49 express low level

1.00 – 1.49 express lowest level

5. Results of Data Analysis

The researcher conducted a comprehensive analysis of the data, segmented into the following four parts:

Part 1: Analysis results of respondents' personal information, categorized by gender, long-term residence before enrollment, grade, and family annual income, with data presented in terms of frequency and percentage.

Table 4 shows that, for gender, there are 207 male respondents, accounting for 54%. There are 177 female respondents, accounting for 46%. The number of male students in the surveyed subjects is relatively higher. For long-term residence before enrollment, 238 respondents are from rural areas, accounting for 62%, while 146 are from urban areas, accounting for 38%. For grade, the leading group is Grade Three, accounting for 36.2% of the population, followed by Grade Two at 32.55%, and Grade One is the lowest at 31.25%. For family annual income, most respondents' families earn between 40,000 RMB and 90,000 RMB, accounting for 66.7%, followed by families earning above 100,000 RMB at 25.5%, and the lowest income group is 10,000 RMB to 30,000 RMB, accounting for 7.8%.

Table 4. Number of People and Percentage of Respondents

(n=384)

| | Personal Information | Frequency | Percentage |
|---------------------------------------|----------------------|-----------|------------|
| Gender | Male | 207 | 54 |
| | Female | 177 | 46 |
| | Total | 384 | 100 |
| Long-term Residence Before Enrollment | Rural area | 238 | 62 |
| | Urban area | 146 | 38 |
| | Total | 384 | 100 |
| Grade | Grade One | 120 | 31.25 |
| | Grade Two | 125 | 32.55 |
| | Grade Three | 130 | 36.2 |
| | Total | 384 | 100 |
| Family Annual Income | 10,000RMB-30,000RMB | 30 | 7.8 |
| | 40,000RMB-90,000RMB | 256 | 66.7 |
| | Above 100,000RMB | 98 | 25.5 |
| | Total | 384 | 100 |

Part 2: Analysis results of the current state of students' career values in higher vocational colleges in Hunan Province, with data presented in terms of mean and standard deviation.

Table 5. The Mean and Standard Deviation of Students' Career Values in Higher Vocational Colleges in Hunan Province

(n=384)

| | Students' career values in higher vocational colleges in Hunan Province | M | SD | level | rank |
|---|---|------|------|-------|------|
| 1 | Career ethics | 3.89 | 0.82 | high | 4 |
| 2 | Career skills | 3.96 | 0.86 | high | 1 |
| 3 | Career psychology | 3.94 | 0.85 | high | 2 |
| 4 | Career planning | 3.92 | 0.88 | high | 3 |
| | Total | 3.93 | 0.85 | high | |

Table 6. The Mean and Standard Deviation of the Current State of Students' Career Ethics in Higher Vocational Colleges in Hunan Province

(n=384)

| NO | Career ethics | M | SD | level | rank |
|----|---|------|------|-------|------|
| 1 | I believe maintaining honesty and integrity in work is very important. | 3.77 | 0.83 | high | 9 |
| 2 | Comply with all the rules and regulations of the company or organization. | 3.81 | 0.77 | high | 7 |
| 3 | Even without supervision, they conscientiously complete their work tasks. | 3.79 | 0.83 | high | 8 |
| 4 | In the face of a conflict of interest, choose the most beneficial action for the company. | 3.84 | 0.89 | high | 6 |
| 5 | Fairness and justice in the workplace are crucial for career development. | 3.94 | 0.77 | high | 4 |
| 6 | Maintain respect and courtesy towards colleagues and clients at all times. | 3.96 | 0.78 | high | 3 |
| 7 | Avoid any form of discriminatory behavior in the workplace. | 3.93 | 0.87 | high | 5 |
| 8 | In a career, continuously improving personal ethical standards and behavioral norms is necessary. | 3.99 | 0.82 | high | 1 |
| 9 | In the face of pressure and temptation at work, adhere to career ethical principles. | 3.98 | 0.79 | high | 2 |
| | Total | 3.89 | 0.82 | high | |

Table 5 found that the current state of students' career values in four aspects of higher vocational colleges in Hunan Province was high ($M=3.93$). Considering the results of this research, aspects ranged from the highest to lowest level were as follows: the highest level was career skills ($M=3.96$), followed by career psychology ($M=3.94$), career planning ($M=3.92$), and career ethics was the lowest level ($M=3.89$).

Table 6 found that the current state of students' career ethics in higher vocational colleges in Hunan Province was at a high-level ($M=3.89$). Considering the results of this research, aspects ranged from the highest to lowest level were as follows: the highest level was "In a career, it is necessary to improve personal ethical standards and behavior norms continuously" ($M=3.99$), followed by "In the face of pressure and temptation at work, adhere to career ethical principles" ($M=3.98$), and "Maintain respect and courtesy towards colleagues and clients at all times" ($M=3.96$). The lowest level was "Believe maintaining honesty and integrity in work is very important" ($M=3.77$).

Table 7. The Average Value and Standard Deviation of the Current Situation of Students' Career Skills in Higher Vocational Colleges in Hunan Province

(n=384)

| NO | Career skills | M | SD | level | rank |
|----|---|------|------|-------|------|
| 1 | Possess the professional knowledge required for the career position. | 4.01 | 0.79 | high | 3 |
| 2 | Effectively manage time to ensure tasks are completed on time. | 3.95 | 0.81 | high | 4 |
| 3 | Perform well in teamwork, capable of efficient communication and collaboration with others. | 4.03 | 0.76 | high | 2 |
| 4 | Possess the ability to solve problems encountered at work and find practical solutions. | 3.92 | 0.89 | high | 8 |
| 5 | Proficiently use computer software and tools related to career. | 4.05 | 0.87 | high | 1 |
| 6 | Adapt flexibly to changes and challenges in the workplace. | 3.94 | 0.87 | high | 6 |
| 7 | Actively participate in professional training and continuing education to enhance career competitiveness. | 3.94 | 0.87 | high | 6 |
| 8 | Possess good verbal and written communication skills. | 3.94 | 0.90 | high | 5 |
| 9 | Understand and apply the latest technologies and methods related to the profession. | 3.90 | 0.94 | high | 9 |
| | Total | 3.96 | 0.86 | high | |

Table 8. The Average Value and Standard Deviation of the Current Situation of Students' Career Psychology in Higher Vocational Colleges in Hunan Province

(n=384)

| NO | Career psychology | M | SD | level | rank |
|----|---|------|------|-------|------|
| 1 | I feel optimistic about my future career. | 3.90 | 0.88 | high | 7 |
| 2 | Possess psychological resilience to cope with career pressure. | 3.85 | 0.92 | high | 9 |
| 3 | Maintain reasonable emotional control even under high work pressure. | 3.95 | 0.80 | high | 4 |
| 4 | Able to balance work and personal life, maintaining mental health. | 3.94 | 0.84 | high | 5 |
| 5 | Mentally prepare for difficulties that may arise during career development. | 4.00 | 0.82 | high | 2 |
| 6 | Willing to seek help and support when encountering difficulties at work. | 3.88 | 0.82 | high | 8 |
| 7 | Achieving self-worth and satisfaction in a career is very important. | 3.96 | 0.85 | high | 3 |
| 8 | Effectively cope with career changes and uncertainties while maintaining psychological stability. | 3.93 | 0.88 | high | 6 |
| 9 | Maintain self-motivation and continuously pursue progress in the career. | 4.02 | 0.80 | high | 1 |
| | Total | 3.94 | 0.85 | high | |

Table 7 found that the current state of students' career skills in higher vocational colleges in Hunan Province was high ($M=3.96$). Considering the results of this research, aspects ranged from the highest to lowest level were as follows: the highest level was "Proficiently use computer software and tools related to career" ($M = 4.05$), followed by "Perform well in teamwork, capable of efficient communication and collaboration with others" ($M = 4.03$), and "Possess the professional knowledge required for the career position" ($M= 4.01$). The lowest level was "Understand and apply the latest technologies and methods related to the profession" ($M=3.90$).

Table 8 found that the current state of students' career skills in higher vocational colleges in Hunan Province was high ($M = 3.96$). Considering the results of this research, aspects ranged from the highest to lowest level were as follows: the highest level was "Proficiently use computer software and tools related to career" ($M = 4.05$), followed by "Perform well in teamwork, capable of efficient communication and collaboration with others" ($M = 4.03$), and "Possess the professional knowledge required for the career position" ($M= 4.01$). The lowest level was "Understand and apply the latest technologies and methods related to the profession" ($M = 3.90$).

Table 9. The Average Value and Standard Deviation of the Current Situation of Students' Sustainable Learning in Higher Vocational Colleges in Hunan Province

(n=384)

| NO | Sustainable learning | M | S.D. | level | rank |
|----|---|------|------|-------|------|
| 1 | Have established clear goals and plans for one's career. | 3.96 | 0.82 | high | 3 |
| 2 | Regularly evaluate one's career goals and plans and make adjustments as needed. | 3.92 | 0.84 | high | 5 |
| 3 | Seek advice and guidance on career planning from mentors, teachers, or career advisors. | 3.93 | 0.88 | high | 4 |
| 4 | Understand the specific skills and knowledge needed to achieve career goals. | 4.04 | 0.78 | high | 1 |
| 5 | Actively seek internships and job opportunities to gain experience related to career goals. | 3.98 | 0.84 | high | 2 |
| 6 | Able to balance career planning with personal life goals, ensuring overall development. | 3.86 | 0.99 | high | 7 |
| 7 | Consider long-term development in career planning, not just the immediate job. | 3.86 | 0.95 | high | 8 |
| 8 | Understand the job market demand and adjust one's career development direction accordingly. | 3.87 | 0.89 | high | 6 |
| 9 | Able to conduct practical risk assessment and management in career development. | 3.83 | 0.92 | high | 9 |
| | Total | 3.92 | 0.88 | high | |

Table 9 found that the current state of students' career psychology in higher vocational colleges in Hunan Province was high ($M = 3.94$). Considering the results of this research, aspects ranged from the highest to lowest level were as follows: the highest level was "Maintain self-motivation and continuously pursue progress in the career" ($M= 4.02$), followed by "Mentally prepare for difficulties that may arise during career development" ($M = 4.00$), and "Achieving self-worth and satisfaction in a career is very important" ($M = 3.96$). The lowest level was "Possess psychological resilience to cope with career pressure" ($M = 3.85$).

Part 3: Analysis results of interview content regarding developing strategies for sustainable development of students' career values in higher vocational colleges in Hunan Province.

Table 10. Personal Information of the Interviewee

| Interviewee | School | Education background | Interview Date and Time |
|---------------|---|--|---------------------------------------|
| Interviewee 1 | Hunan Polytechnic of Environment Biology | Post: Director of Student Affairs Expertise: Student Management Work experience: 30 years | May 15, 2024 at 09:00 pm, GMT+8 |
| Interviewee 2 | Hunan Financial and Industrial Vocational-technical College | Post: Director of Employment Affairs Expertise: Student Career Planning Work experience: 25 years | May 15, 2024 at 10:30 pm, GMT+8 |
| Interviewee 3 | Yongzhou Vocational Technical College | Post: Director of the Mental Health Education Center Expertise: Career Psychology Education Work experience: 30 years | May 15, 2024 at 2:30 pm, GMT+8 |
| Interviewee 4 | Changsha Social Work College | Post: Dean of the College of Education Expertise: Career Development Education Work experience: 26 years | May 16, 2024 at 9:30 pm, GMT+8 |
| Interviewee 5 | Chenzhou Vocational and Technical College | Post: Full Professor Expertise: Lecturer Training and Education Work experience: 30 years | May 16, 2024 at 2:30 pm, GMT+8 |
| Interviewee 6 | Loudi Vocational and Technical College | Post: Director of the Labor Education Center Expertise: Career Development Education Work experience: 27 years | May 17, 2024 at 10:30 pm, GMT+8 |
| Interviewee 7 | Hunan Polytechnic of Environment Biology | Professional title: Professor Expertise: Career Development Education Work experience: 30 years | May 18, 2024 at 10:30 pm, GMT+8 |
| Interviewee 8 | Hunan Financial and Industrial | Professional title: Professor | May 18, 2024 at 2:30 pm, |

| | | | |
|----------------|---|--|---------------------------------------|
| | Vocational-technical College | Expertise: Career Ethics Education Work experience: 30 years | GMT+8 |
| Interviewee 9 | Yongzhou Vocational Technical College | Professional title: Professor Expertise: Career Planning Guidance Work experience: 30 years | May 19, 2024 at 10:30 pm, GMT+8 |
| Interviewee 10 | Changsha Social Work College | Professional title: Professor Expertise: Career Psychology Education Work experience: 23 years | May 19, 2024 at 2:30 pm, GMT+8 |
| Interviewee 11 | Chenzhou Vocational and Technical College | Professional title: Professor Expertise: Career Psychology Education Work experience: 25 years | May 20, 2024 at 10:30 pm, GMT+8 |
| Interviewee 12 | Loudi Vocational and Technical College | Professional title: Professor Expertise: Career Development Education Work experience: 27 years | May 20, 2024 at 12:30 pm GMT+8 |

6. Analysis of Structure Interview Results

Through the implementation of structured interviews with the participants and subsequent organization and analysis of the interview data, the findings reveal that:

Question 1: What is the current state of sustainable development students' career ethics in higher vocational colleges in Hunan province? How can the sustainable development students' career ethics be promoted?

From the interview content, the current state of sustainable development students' career ethics in higher vocational colleges in Hunan Province shows encouraging progress, yet challenges remain. Many institutions have established foundational systems to instill career ethics, emphasizing the importance of honesty, integrity, and adherence to organizational rules. These colleges often integrate ethical principles into their curricula and encourage students to engage in ethical decision-making through case studies and real-world scenarios. However, several challenges persist. Some institutions may focus primarily on theoretical aspects of ethics education, neglecting the practical application of these principles in complex, real-world situations.

Additionally, academic performance may be overemphasized, leading students to prioritize grades over ethical behavior. Short-term academic goals can sometimes overshadow the long-term importance of ethical conduct in professional settings. Furthermore, inconsistent reinforcement of ethical standards across departments can lead to a fragmented understanding of career ethics among students.

The strategies for enhancing sustainable development in students' career ethics can be summarized as follows: 1) Ethics education should be deeply integrated into the core curriculum, involving theoretical lessons and practical applications through case studies and real-world scenarios. This approach ensures that students can apply ethical

principles in various contexts; 2) Workshops and seminars led by industry professionals can provide valuable insights into ethical challenges encountered in different fields and the importance of maintaining high ethical standards. These sessions can help bridge the gap between theoretical knowledge and practical application; 3) Mentorship programs are crucial, where students are paired with experienced professionals who exemplify ethical behavior. Mentors can provide valuable examples and guidance, reinforcing the importance of ethics in professional settings; 4) Encouraging students to engage in community service and social responsibility projects can help them understand the broader impact of ethical behavior on society. These activities can instill a sense of responsibility and commitment to ethical conduct; 5) Creating a campus culture that celebrates and rewards ethical behavior will motivate students to uphold these standards consistently. Recognizing and rewarding ethical conduct can reinforce its importance and encourage students to prioritize it; 6) Implementing continuous assessment and feedback mechanisms will ensure that students are developing their ethical decision-making skills effectively. Regular evaluations and feedback can help students understand their strengths and areas for improvement in ethical behavior; 7) Incorporating ethical discussions and reflections into regular coursework can help students internalize ethical principles. Encouraging students to reflect on ethical dilemmas and discuss potential solutions can deepen their understanding and commitment to ethical conduct; 8) Establishing clear, institutional ethical guidelines and ensuring that all departments consistently reinforce these standards can create a cohesive sense of career ethics among students, and 9) Promoting long-term ethical development by emphasizing the importance of ethical behavior in achieving sustainable career success. This approach can help students understand that ethical conduct is not just a short-term requirement but a cornerstone of long-term professional growth. Through these strategies, we can cultivate a strong foundation of career ethics among students, ensuring they act with integrity and contribute positively to their fields and society.

Question 2: What is the current state of sustainable development students' career skills in higher vocational colleges in Hunan province? How can the sustainable development of students' career skills be promoted?

Based on the interview content, the sustainable development of students' career skills in higher vocational colleges in Hunan Province shows promising progress, yet some areas require further enhancement. Many colleges have integrated foundational career skill training into their curricula, ensuring students possess the essential professional knowledge necessary for their career positions. These institutions often provide various platforms for students to develop time management and teamwork skills, which are critical for workplace success. Additionally, some colleges have established partnerships with local industries to offer internships and practical training, giving students hands-on experience and a clearer understanding of real-world applications of their skills. However, challenges persist. Some institutions may still emphasize theoretical knowledge over practical skill development, limiting students' ability to apply what they have learned in real-world scenarios. There may also be gaps in training for specialized tools and technologies that are critical in today's job market. Moreover, students' problem-solving abilities and adaptability to changing workplace environments need further development.

Improvement measures: 1) Integrating more practical training and experiential learning opportunities within the curriculum is crucial. It can be achieved through internships, co-op programs, and partnerships with local industries, providing students with hands-on experience and understanding of real-world applications of their skills; 2) Regular workshops and seminars focusing on the latest industry trends and technological advancements will help keep students updated and enhance their competencies, 3) Encouraging students to pursue professional certifications and engage in continuing education will also be beneficial. Creating a culture of continuous learning and adaptability is vital, ensuring that students remain responsive to industry changes; 4) Establishing mentorship programs where students receive guidance from experienced professionals can provide invaluable insights and foster career growth; 5) Promoting opportunities for students to work on projects that require innovative problem-solving and critical thinking will further develop their career skills, 6) Implementing continuous assessment and feedback mechanisms will ensure that students are developing their skills effectively and identifying areas for improvement, 7) Enhancing the use of information technologies in career skills training can modernize the learning process and provide real-time insights into students' progress, and 8) Developing a well-structured career development system and process design is essential for successful skill acquisition. These aspects facilitate seamless coordination and ensure that students receive comprehensive training, and 9) Establishing a systematic mechanism for tracking and monitoring students' career skill development can help identify bottlenecks and optimize training workflows. Through these strategies, we can ensure that students are well-prepared to succeed in their careers, contribute meaningfully to their fields, and adapt to the dynamic job market.

Question 3: What is the current state of sustainable development students' career psychology in higher vocational colleges in Hunan province. ? How can the sustainable development students' career psychology be promoted?

Based on the interview content, the current state of sustainable development students' career psychology in higher vocational colleges in Hunan Province is encouraging, yet areas require further attention. Many institutions have made strides in fostering a positive outlook towards careers among students, promoting resilience in managing career-related stress, and encouraging emotional stability under pressure. These colleges provide access to counseling services and support systems that help students seek assistance when needed. However, challenges persist. Some institutions still lack comprehensive programs for balancing work and personal life, which is critical for maintaining good mental health. Additionally, while students are generally resilient, their ability to handle career uncertainties and changes must be strengthened.

Improvement measures: 1) Integrating psychological resilience training into the curriculum is essential. It should include stress management techniques, emotional regulation, and mental health awareness. Workshops and seminars on these topics can provide students with practical strategies for maintaining their mental well-being; 2) Encouraging participation in wellness programs and activities that promote a balanced lifestyle will also contribute to better mental health. These programs can help students learn how to balance their professional and personal lives effectively; 3) Providing continuous access to career counseling services is vital, offering students the support and guidance they need to navigate career challenges effectively. Career counselors can help students develop strategies to cope with stress and uncertainties; 4) Creating a supportive campus environment that emphasizes the importance of self-worth and career satisfaction can significantly enhance students' psychological well-being. It can be achieved by fostering a culture that celebrates personal achievements and milestones; 5) Establishing mentorship programs where students receive personalized advice from experienced professionals will offer invaluable support. Mentors can guide managing career pressures and making informed career decisions; 6) Promoting activities that require students to engage in self-reflection and goal setting can help them develop a clearer sense of purpose and direction. It can include workshops on setting and achieving personal and professional goals; 7) Implementing continuous assessment and feedback mechanisms will ensure students develop their psychological resilience effectively. Regular evaluations can help identify areas where students need additional support. 8) Incorporating discussions on career uncertainties and how to manage them in regular coursework can help students build adaptability and resilience. It can involve case studies and scenarios that simulate real-world challenges, and 9) Fostering a culture of continuous self-improvement and adaptability will help students cope with career changes and uncertainties, ensuring they remain resilient and motivated. By adopting these strategies, we can build a strong foundation for sustainable career psychology among our students, preparing them to face the future with confidence and resilience.

Question 4: What is the current state of sustainable development students' career planning in higher vocational colleges in Hunan province? How can the sustainable development students' career planning be promoted?

Based on the interview content, higher vocational colleges in Hunan Province have made notable progress in fostering sustainable development in students' career planning. Many institutions have implemented career guidance programs and mentorship initiatives, encouraging students to set clear and attainable career goals. These colleges often provide platforms for students to seek advice from career advisors and industry professionals, promoting a structured approach to career planning. However, translating career planning efforts into long-term, adaptable strategies remains challenging. Students frequently lack a comprehensive vision that aligns short-term goals with long-term career aspirations, necessitating better integration of career planning frameworks with evolving job market demands. The ability to adapt career plans in response to changing industry trends and economic conditions is also an area requiring enhancement. Moreover, effective communication and collaboration between academic departments and career services can significantly influence the success of career planning initiatives.

Improvement measures: Significant progress has been made in promoting sustainable career planning among students in higher vocational colleges. Establishing comprehensive career planning modules within the curriculum has provided students with the tools needed to set and achieve career goals. However, translating these plans into actionable long-term strategies requires better alignment with market dynamics and future industry needs. Continuous access to career counseling services has enhanced students' ability to make informed decisions, yet more must be done to ensure that these services integrate seamlessly with academic programs. Data accuracy and reliability in tracking career outcomes are paramount, ensuring students receive timely and relevant feedback on their career progress.

Additionally, establishing a robust feedback mechanism has provided transparency and accountability, allowing students to adjust their career plans based on real-time insights. Integrating career planning results into reward and recognition systems can further incentivize students to engage actively in their career development. Utilizing data-driven insights as the basis for future career guidance programs demonstrates a proactive approach, ensuring

that career services remain responsive to changing industry demands. By connecting career planning resources through an open and accessible system, institutions can enhance their flexibility and responsiveness, ultimately leading to better student career outcomes. In summary, while challenges persist, higher vocational colleges in Hunan Province have made significant strides in promoting sustainable career planning, focusing on transparency, accountability, and strategic utilization of data-driven decision-making, guiding them toward improved career readiness and long-term success for their students.

Table 11. Strategies to Promote Sustainable Development Student's Career Values Education in Higher Vocational Colleges, Hunan Province

| Sustainable Development Student's Career Values Education in Higher Vocational Colleges, Hunan Province | HOW TO |
|---|--|
| Career ethics | <ol style="list-style-type: none"> 1. Ensure employees possess the professional knowledge required for the career position. 2. Implement strategies to manage time to ensure tasks are completed on time effectively. 3. Promote teamwork performance, enabling efficient communication and collaboration. 4. Develop the ability to solve problems encountered at work and find practical solutions. 5. Foster the ability to adapt flexibly to changes and challenges in the workplace. |
| Career skills | <ol style="list-style-type: none"> 1. Ensure employees possess the professional knowledge required for the career position. 2. Develop the ability to solve problems encountered at work and find practical solutions. 3. Encourage proficiency in using computer software and tools related to your career. 4. Support active participation in professional training and continuing education to enhance career competitiveness. 5. Cultivate good verbal and written communication skills. 6. Promote understanding and application of the latest technologies and methods related to the profession. |
| Career psychology | <ol style="list-style-type: none"> 1. Encourage feeling optimistic about the future career. 2. Develop psychological resilience to cope with career pressure. 3. Promote maintaining reasonable emotional control even under high work pressure. 4. Support balancing work and personal life, maintaining mental health. 5. Mentally prepare for difficulties that may arise during career development. 6. Encourage seeking help and support when encountering difficulties at work. 7. Emphasize the importance of achieving self-worth and satisfaction in a career. 8. Promote effective coping with career changes and uncertainties while maintaining psychological stability. 9. Support maintaining self-motivation and continuously pursuing progress in the career. |
| Career psychology | <ol style="list-style-type: none"> 1. Establish clear goals and plans for one's career. 2. Regularly evaluate one's career goals and plans and adjust as needed. 3. Seek advice and guidance on career planning from mentors, teachers, or career advisors. 4. Understand the specific skills and knowledge needed to achieve career goals. 5. Actively seek internships and job opportunities to gain experience related to career goals. 6. Balance career planning with personal life goals, ensuring overall development. 7. Consider long-term development in career planning, not just the immediate job. 8. Understand the job market demand and adjust one's career development direction accordingly. 9. Conduct practical risk assessment and management in career development. |

In Table 11, the researcher provided strategies for improving the sustainable development of students' career values education in higher vocational colleges in Hunan Province, divided into four aspects containing 29 measures. There are 5 measures for enhancing career ethics, 6 for enhancing career skills, 9 for enhancing career psychology, and 9 for enhancing career planning.

Part 4: Analysis results of evaluating the appropriateness and feasibility of strategies for sustainable development of students' career values in higher vocational colleges in Hunan Province, with mean and standard deviation data.

Table 12. The Average Value and Standard Deviation of Evaluating the Adaptability and Feasibility of Guidelines for Improving the Sustainable Development of Students' Career Values Education in Higher Vocational Colleges in Hunan Province in Four Aspects

(n=12)

| Sustainable Development Student's Career Values Education in Higher Vocational Colleges, Hunan Province | Adaptability | | | Feasibility | | |
|---|--------------|------|---------|-------------|------|---------|
| | M | SD | level | M | SD | level |
| Career ethics | 4.82 | 0.05 | highest | 4.75 | 0.54 | Highest |
| Career skills | 4.72 | 0.63 | highest | 4.78 | 0.48 | highest |
| career psychology | 4.87 | 0.39 | highest | 4.82 | 0.43 | highest |
| Career planning | 4.79 | 0.54 | highest | 4.83 | 0.42 | highest |
| Evaluation level of scale strategies | 4.80 | 0.51 | highest | 4.80 | 0.46 | highest |

Table 12 shows the adaptability and feasibility of guidelines for improving the sustainable development of students' career values education in higher vocational colleges in Hunan Province in four aspects were at the highest level with the values ($M=4.80$ and $M=4.80$), which means the guidelines for improving the sustainable development of students' career values education are adaptable and feasible.

7. Conclusion

The research on strategies for improving the sustainable development of students' career values education in higher vocational colleges in Hunan Province. The researcher summarizes the conclusion into 3 parts, details as follows:

Part 1: The current situation of sustainable development of students' career values education in higher vocational colleges in Hunan Province.

The current situation of sustainable development of students' career values education in higher vocational colleges in Hunan Province can be summarized in three aspects:

Firstly, the management level of sustainable development of students' career values education in higher vocational colleges in Hunan Province is high, but the implementation level of each dimension is unbalanced.

Secondly, the career skills level of sustainable development of students' career values education in higher vocational colleges in Hunan Province is the highest.

Thirdly, the career ethics level of sustainable development of students' career values education in higher vocational colleges in Hunan Province is the lowest.

Part 2: The strategies for improving the sustainable development of students' career values education in higher vocational colleges in Hunan Province.

The strategies for improving the sustainable development of students' career values education in higher vocational colleges in Hunan Province are divided into four aspects, which contain 29 measures. There are 5 measures for enhancing career ethics, 6 for enhancing career skills, 9 for enhancing career psychology, and 9 for enhancing career planning.

Part 3: The adaptability and feasibility of guidelines for improving the sustainable development of students' career values education in higher vocational colleges in Hunan Province.

The adaptability and feasibility of guidelines for improving the sustainable development of students' career values education in four aspects were at the highest level with the values ($M=4.80$ and $M=4.80$), which means the guidelines for improving the sustainable development of students' career values education are adaptable and feasible.

8. Discussion

The research in the guidelines for improving the sustainable development of students' career values education in higher vocational colleges in Hunan Province. The researcher summarizes the conclusion into 3 parts, details as follows:

Part 1: The current situation of sustainable development of students' career values education in higher vocational colleges in Hunan Province.

The current situation of the sustainable development of students' career values education in higher vocational colleges in Hunan Province is that the overall level of sustainable development is good; the highest level is for career skills, and career ethics is the lowest.

Firstly, the overall sustainable development of students' career values education in higher vocational colleges in Hunan Province is high. Still, the level of implementation is uneven among all dimensions. It is because:

On the one hand, China attaches great importance to implementing career education in higher vocational colleges. Directives such as "Guiding Opinions on Promoting Career Education," "Work Plan for Career Development (2012-2015)," "Methods for Career Skills Evaluation," "Interim Measures for Career Education Management," the new "Education Law of the People's Republic of China," and "Vocational Education Rules for Institutions" have been issued. These initiatives reflect the nation's commitment and determination to promote career education and transform educational practices vigorously. In response to the reform of national career education management, the Ministry of Education has issued a series of specific policies in the education industry. For example, the Ministry of Education issued the "Opinions on Fully Implementing Career Education Management" in 2019. This document is comprehensive and integrates expert opinions from academia and practice and the actual situation of career education in colleges. The requirements and guidance provided are specific and targeted. To some extent, this is beneficial for strengthening and improving career education management in vocational colleges.

On the other hand, there are imbalances in various aspects of development. Some respondents and survey participants pointed out that many issues in managing vocational education in higher vocational colleges hinder its growth. Many effective policies have not been fully implemented. The content of career values education for higher vocational students can be enhanced from four dimensions: career ethics education, career psychology education, career planning education, and career skills education. According to Yu et al., (2019), the current problems in career values education include weak career planning awareness and unreasonable and unscientific career development strategies.

Secondly, among the four aspects of implementation, the implementation level of vocational skills development in higher vocational colleges is the highest. It is because vocational skills development is the foundation of career values education, covering the entire process and being the essential step in managing career values education. It is not only a significant factor but also a crucial step in the overall vocational education process.

Thirdly, looking at the four aspects of career education management, it is generally perceived that the implementation level of career ethics education is the lowest in the sustainable development of students' career values education in higher vocational colleges in Hunan Province. On one hand, career ethics education in higher vocational colleges is still in the exploratory stage. According to Zhang (2018), the exploration of career ethics education in Chinese higher vocational colleges has started relatively late, leading to a significant gap compared to developed Western countries. On the other hand, in terms of practical research, there is a scarcity of studies addressing real-world issues related to the career ethics of education indicator systems for higher vocational colleges. Most research predominantly focuses on theoretical aspects, merely constructing career ethics of education indicator systems without applying them in practice.

Part 2: The guidelines for improving the sustainable development of students' career values education in higher vocational colleges in Hunan Province.

The guidelines for improving the sustainable development of students' career values education in higher vocational colleges in Hunan Province are divided into four aspects, which contain 29 measures. There are 5 measures for enhancing career ethics, 6 for enhancing career skills, 9 for enhancing career psychology, and 9 for enhancing career planning. The proposal of these measures mainly stems from the results obtained from the previous evaluation stage by university administrators. The problems reflected in these results indicate the direction for improving educational career values. Based on the research results of expert interviews, the strategy proposal adheres to the principle of problem orientation. The direction for improvement is based on shortcomings in career ethics, career skills, career psychology, and career planning.

Firstly, guidelines for enhancing career ethics. Career ethics serve as the foundation for students' professional development. It plays a crucial and pivotal role in their overall career values education. Therefore, a high degree of importance is attached to career ethics, resulting in a relatively elevated management level. However, there are deficiencies in the conceptual framework of career ethics education, a lack of mandatory measures in instilling ethical principles, and inadequacies in the scientific basis of ethical indicators and target values.

Additionally, the efforts should be directed toward enhancing institutional development, optimizing processes, and establishing a more robust system of ethical indicators. Related to the concept of Ji (2019), the formulation of practical ethical standards for career development can further enhance the integrity and professionalism of students, optimize their interactions in the workplace, and better promote moral behavior. Establishing rational and scientific ethical objectives is the first step in implementing a comprehensive career values education system and lays a solid foundation for the overall development of career ethics.

Secondly, guidelines for enhancing career skills. Due to the emphasis on advancing students' practical capabilities in higher vocational colleges, institutions have recognized that career skills development is a critical component of career values education. It plays an essential role in preparing students for the workforce. However, gaps exist in integrating advanced technologies, insufficient hands-on training opportunities, and a lack of continuous skill assessment mechanisms. Efforts should be directed towards providing more practical training, incorporating the latest technological tools, and establishing a constant assessment framework. Related to the concept of Du (2019), equipping students with up-to-date professional skills can significantly improve their job readiness and adaptability in a rapidly changing job market. A robust career skills development program enhances students' overall career competencies and ensures their successful transition into professional roles.

Thirdly, guidelines for enhancing career psychology. Students' psychological well-being is a critical aspect of their career values education. It ensures that students are mentally prepared to face the challenges of their future careers. There is a strong emphasis on fostering a positive career outlook, developing resilience, and maintaining mental health. However, some areas need improvement, such as providing adequate support systems, addressing mental health stigmas, and integrating psychological education into the curriculum. Efforts should be directed toward creating a supportive environment, offering counseling services, and embedding psychological resilience training in education. Psychological resilience and a positive career outlook among students can significantly enhance their ability to cope with career pressures and uncertainties, leading to more stable and productive career paths.

Fourthly, guidelines for enhancing career planning. Effective career planning is essential to sustain students' career values. It involves setting clear career goals, regularly evaluating them, and making necessary adjustments. However, challenges include the lack of guidance from experienced mentors, insufficient integration of career planning with academic learning, and the need for better market alignment. Efforts should focus on providing comprehensive career guidance, ensuring alignment between career goals and market demands, and promoting long-term career planning. Related to Zhao (2001), strategic career planning can help students navigate their career paths more effectively, aligning their personal goals with professional opportunities. Establishing a well-structured career planning system is crucial for guiding students toward achieving their career aspirations and sustaining their professional growth.

Part 3: The adaptability and feasibility of guidelines for improving the sustainable development of students' career values education in higher vocational colleges in Hunan Province.

The researcher invited 7 experts to evaluate the guidelines for improving the sustainable development of students' career values education. These experts are from Hunan Polytechnic of Environment Biology, Hunan Financial and Industrial Vocational-Technical College, Yongzhou Vocational Technical College, Changsha Social Work College, Chenzhou Vocational and Technical College, Loudi Vocational and Technical College, and Hunan University of Finance and Economics. These 7 institutions have the highest number of students, high-quality career values education, and strong reputations among higher vocational colleges in Hunan Province. The invited experts have extensive experience and rich theoretical knowledge in career values education. According to the data interpretation for average value based on Likert (1932), the suitability and feasibility of guidelines for improving the sustainable development of students' career values education in four aspects were at the highest level, with values between 4.00 and 5.00. It indicates that the guidelines for improving the sustainable development of students' career values education are suitable and feasible.

9. Future Research

1. This paper is based on an analysis and discussion of the current state of career values education in higher vocational colleges in Hunan Province. While the study covers many aspects, specific issues may not have been addressed in-depth due to scope and research depth limitations. Additionally, some aspects of the career values education system may require further enrichment and refinement through practical implementation. For instance, the operational aspects of career education activities, effectively integrating career values into the curriculum, and evaluating indicators to suit the current situation better must be explored further in practice. It is essential to continue testing and validating these aspects in practical scenarios. Practical experience will contribute to the formulation of concrete and viable improvement measures. Furthermore, ongoing discussions and accumulating practical cases and beneficial experiences are necessary to further refine the education system's career values. Overall, while this paper provides a comprehensive analysis and discussion of the current state of career values education in higher vocational colleges in Hunan Province, there is still room for further exploration, experimentation, and refinement in practice.

2. Studying career values education goes beyond just vocational aspects. This research focuses on career values education in higher vocational colleges. I have developed a strong interest in career development education by exploring relevant theories and literature during this phase. I hope to expand the scope of my research in the future to encompass aspects like lifelong career planning and personal development, enabling a comprehensive study of career education beyond the confines of vocational considerations as long as the circumstances allow for it.

3. Conducting research that compares the situation between domestic and foreign contexts. This study did not involve a comparative analysis of career values education between domestic and foreign institutions. The main reason is that the researcher's understanding of career values education models in foreign institutions is still limited, and relevant literature is scarce. There are plans to enhance this understanding in the future through visits to foreign institutions, field studies, or conducting specialized interviews with returning scholars. It will facilitate an in-depth analysis of the methods and approaches to career values education in foreign institutions. Moreover, a comparative study will be conducted between these approaches and Chinese institutions' current career education models, outlining their respective strengths and weaknesses. The aim is to provide theoretical and practical references for enhancing career values, education, and governance capacity in Chinese institutions.

References

- Agirreazkuenaga, L. (2019). Embedding sustainable development goals in education. Teachers' perspective about education for sustainability in the Basque Autonomous Community. *Sustainability*, *11*(5), 1496. <https://doi.org/10.3390/su11051496>
- Al-Mubarak, H. M., & Busler, M. (2013). Business incubation as an economic development strategy: A literature review. *International Journal of Management*, *30*(1), 362-373.
- Guo, K., Li, S., Wang, Z., Shi, J., Bai, J., & Cheng, J. (2021). Impact of Regional Green Development Strategy on Environmental Total Factor Productivity: Evidence from the Yangtze River Economic Belt, China. *International Journal of Environmental Research and Public Health*, *18*(5), 2496. <https://doi.org/10.3390/ijerph18052496>
- Huang, K. Y., Kwon, S. C., Cheng, S., Kamboukos, D., Shelley, D., Brotman, L. M., & Hoagwood, K. (2018). Unpacking partnership, engagement, and collaboration research to inform implementation strategies development: theoretical frameworks and emerging methodologies. *Frontiers in public health*, *6*, 190. <https://doi.org/10.3389/fpubh.2018.00190>
- Karachi, Z., & Bounabat, B. (2020). Towards a Frame of Reference for Smart City Strategy Development and Governance. *Journal of Computer Science*, *16*, 1451-1464. <https://doi.org/10.3844/jcssp.2020.1451.1464>
- Likert, R. (1967). "The Method of Constructing and Attitude Scale," in *Attitude Theory and Measurement*. P.90-95. New York: Wiley & Son.
- Liu, H. Y. (2021). *Study the development characteristics and educational strategies of career values among higher vocational students in the new era* [Doctoral dissertation, Dalian University of Technology].
- Luan, Y. (2023). *Research on the Issues and Countermeasures of Higher Vocational Education Development in Qinhuangdao City* [Master's thesis, Yanshan University].

- Michel, J. O. (2020). Mapping out Students' Opportunity to Learn about Sustainability across the Higher Education Curriculum. *Innovative Higher Education*, 45, 355-371. <https://doi.org/10.1007/s10755-020-09509-7>
- Nayal, K., Raut, R. D., Yadav, V. S., Priyadarshinee, P., & Narkhede, B. E. (2022). The impact of sustainable development strategy on sustainable supply chain firm performance in the digital transformation era. *Business Strategy and the Environment*, 31(3), 845-859. <https://doi.org/10.1002/bse.2921>
- Olive, R., & Enright, E. (2021). Sustainability in the Australian Health and Physical Education Curriculum: an ecofeminist analysis. *Sport, Education and Society*, 26, 389-402. <https://doi.org/10.1080/13573322.2021.1888709>
- Popov, V. (2023). Increasing the competence of future economists to improve the effectiveness of training in the context of achieving the principles of sustainable development. *Journal of Law and Sustainable Development*, 11(1), e0277. <https://doi.org/10.37497/sdgs.v11i1.277>
- Salih, S., Abdelsalam, S., Hamdan, M., Ibrahim, A. O., Abulfaraj, A. W., Binzagr, F., & Abdallah, A. E. (2022). The CSFs from the Perspective of Users in Achieving ERP System Implementation and Post-Implementation Success: A Case of Saudi Arabian Food Industry. *Sustainability*, 14(23), 15942. <https://doi.org/10.3390/su142315942>
- Yu, H., & Hu, Z. X. (2019). Research on the structure of career values of college graduates in urbanization. *Heilongjiang Higher Education Research*, 2019(12), 126-130.
- Zhang, Q. (2018). *Cultivation of Core Occupational Competence in College Students*. Shanghai: Tongji University Press.
- Zhang, S. M. (2015). Research the significance and countermeasures of moral education for students in (2014). A comparative study of higher vocational education development models in the United States, Germany, and Australia. *China Vocational and Technical Education*, 2014(27), 63-70.

Acknowledgments

Not applicable.

Authors contributions

Not applicable.

Funding

Not applicable.

Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Sciedu Press.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

Open access

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.