

# Development of Sustainable Humanistic Education Strategies in Higher Vocational Colleges

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## Abstract

The objectives of this research were: 1) to study the current status of the development of sustainable humanistic education in higher vocational colleges in Hunan Province, 2) to develop strategies for the sustainable development of humanistic education in higher vocational colleges in Hunan Province, and 3) to evaluate the effectiveness of the suitability and feasibility of the sustainable development strategy of humanistic education in higher vocational colleges in Hunan Province. This study took 3351 people from 6 vocational colleges in Hunan Province as the research subjects. According to the Krejcie and Morgan (1970) sampling table, the sample group is 338 teachers, 132 school administrators, and 196 corporate mentors. The research tools include 1) a questionnaire, 2) in-depth interview, 3) focus group, and 4) evaluation effectiveness. Data analysis uses percentage, mean, standard deviation and content analysis.

The research results showed that 1) the current status of development of sustainable humanistic education in higher vocational colleges in Hunan Province is at a medium level, 2) the strategies for the sustainable development of humanistic education in higher vocational colleges in Hunan Province include: (1) improve talent training programs; (2) strengthen the construction of the teaching staff; (3) innovate teaching methods; (4) enrich course content; (5) organize social practice; (6) strengthen school-enterprise cooperation; (7) establish an evaluation system, and 3) the effectiveness of the suitability and feasibility of the sustainable development strategy of humanistic education in higher vocational colleges in Hunan Province are both at a high level.

**Keywords:** humanistic education, sustainable development, strategy, higher vocational college

## 1. Introduction

In May 2022, UNESCO held the Third World Conference on Higher Education and released “New Vision for Higher Education Towards 2030” UNESCO (2022) suggested that higher education should promote humanism in a changing world and cultivate future citizens in three ways. “Humanistic education” is an educational response to “humanism,” prioritizing values of human growth, dignity, equality, and solidarity.

In September 2022, at the summit’s closing ceremony, Guterres (..) emphasized education reform must include sustainable development concepts, focus on environmental and climate change education, train employment and entrepreneurship skills for the digital market, and call for strengthening ecological, cross-cultural, and interdisciplinary learning for global sustainable development.

Busoi (2015) believes that education for sustainable development should be transformative. Still, it must be aimed at this purpose: to help humans overcome their selfish conditions and think and act responsibly. Economic growth is essential and requires professional skills, but the current higher education system must be rethought based on professionalization and employability, considering humanistic values and principles.

Yang (2019) contends that higher vocational colleges prioritizing “employment-oriented” philosophy neglect humanistic education. The technical focus shapes the talent training model, causing a lack of humanistic literacy. Humanistic education is excluded from institutional planning with few courses. Despite student demand, colleges fail to meet it, affecting talent quality and sustainable development.

Promoting humanistic education for sustainable development reflects on traditional education. The conventional system emphasizes skills and knowledge. Sustainable humanistic education focuses on students’ comprehensive

qualities, creativity, critical thinking, and social responsibility. It helps them adapt, raises awareness, rebalances nature-human relations, teaches resource management skills and values, and helps build a sustainable society.

### 1.1 Research Questions

- 1) What is the current situation of the development of sustainable humanistic education in higher vocational colleges in Hunan Province?
- 2) How can strategies for the sustainable development of humanistic education in higher vocational colleges in Hunan Province be formulated?
- 3) What extent can we evaluate the effectiveness, suitability, and feasibility of the sustainable development strategy of humanistic education in higher vocational colleges in Hunan Province?

### 1.2 Research Objectives

- 1) To study the current status of the development of sustainable humanistic education in higher vocational colleges in Hunan Province.
- 2) To formulate the strategies for the sustainable development of humanistic education in higher vocational colleges in Hunan Province.
- 3) To evaluate the effectiveness of suitability and feasibility of the sustainable development strategy of humanistic education in higher vocational colleges in Hunan Province.

## 2. Literature Review

This study uses educational management science to analyze relevant literature, concepts, theories, and research.

### 2.1 Concept of Humanistic Education

Table 1. Definition of the scope of humanistic education by domestic and foreign scholars

Content	Li (2007)	Ma (2012)	Bai (2013)	Liu (2016)	Su & Huang (2018)	Frequency
Humanities knowledge	√		√	√		3
Human Spirit	√				√	2
Humanistic Concept		√			√	2
Humanities		√		√		2
Humanistic qualities		√	√	√		3
Values Education			√			1

### 2.2 Problems in Humanistic Education

Martha (2010): Today's education neglects human nature cultivation, causing the decline of university humanistic education and weakening of humanities and art courses. Career-oriented curriculum settings lead to the abandonment of lit, hist, and humanistic education, unfavourable for students' imagination, sympathy, and critical ability.

Liu (2012): In higher vocational education's explicit curriculum system, humanistic education is at the descriptive knowledge level, not internalized. Lacks communication with professional education, teachers are indifferent, fade from skilled classrooms, teaching management lacks an integration mechanism, and there is insufficient faculty, resulting in poor results.

Li (2016) believes that in terms of humanistic education, higher vocational colleges mainly have problems such as overly utilitarian educational concepts, unreasonable curriculum settings, weak campus cultural atmosphere, teachers' humanities literacy levels need to be improved, and humanities literacy education methods need to be improved.

### 2.3 Concept of Sustainable Development

#### 2.3.1 Meaning of Sustainable Development

UNESCO (1992) further elaborates on sustainable development: "Human beings should enjoy the right to live a healthy and fruitful life in harmony with nature, and to fairly meet the development and environmental needs of current and future generations and to pursue development. Must be achieved".

United Nations (2015) summarized the progress of sustainable development in the past ten years. They released

“Transforming Our World: the 2030 Agenda for Sustainable Development, proposing 17 sustainable development goals to be jointly achieved by 2030” and pointed out that by 2030, all people who study should grasp sustainable development. Develop required knowledge and skills.

### 2.3.2 The Connection Between Sustainable Development and Humanistic Education

The study found that domestic and foreign scholars gave the following insights into the relationship between sustainable development and humanistic education:

Huckle and Sterling (1996) proposed sustainable development education. It enables educators to participate in sustainable development and helps people achieve an equal and sustainable future, making people realize interdependence and the impacts of human activities and decisions.

UNESCO (2017) proposed that “the key to sustainable development education is to enable students to master some important abilities, including systematic thinking, anticipatory ability, normative ability, strategic ability, collaboration ability, critical thinking ability, self-awareness ability and comprehensive problem-solving ability”. These eight abilities are specific cognitive, social-emotional, and behavioural learning goals.

Zhu et al. (2023) believe the education system is essential for implementing sustainable development education. There are many qualities needed to promote sustainable development.

### 2.4 Main Aspects of Strategy

Liu (2012) believes that cultivating the humanistic qualities of students in higher vocational colleges should clarify the goal of humanistic education and increase the proportion of explicit humanistic courses. When constructing the curriculum system of higher vocational colleges, the number of humanistic classes should be increased, and the humanistic courses must be guaranteed in terms of class hours, credits, etc.

Yang (2019) holds teacher quality in higher vocational colleges relates to the quality of humanistic education. He suggests selecting teachers with knowledge and spirit, recruiting experts as part-timers, and building combined teaching staff to strengthen humanistic education and improve students' literacy.

Su and Huang (2018) believe that 1) Build “strong interaction” in new humanistic education classrooms like “task and sharing”, “flipped”, and “knowledge-emotion-experience”. 2) Occupy network position, use infotech, integrate online resources, combine online and offline learning.

Huang (2021) believes learning about SDGs will be more effective if discussed from a multidisciplinary perspective. The school has set aside fixed class hours to conduct special studies on sustainable development in an interdisciplinary manner.

Zhang (2023) holds enriching practical education can innovate club activities. In practice, club activities can be used as a career and integrated into humanistic education. Rich club activities can arouse humanistic concepts and activate enthusiasm, cooperation consciousness and service concepts.

Zheng (2021) believes that school-enterprise cooperation is a strategic measure for the sustainable development of higher vocational education. Through cooperative education, resource sharing and complementarity can be achieved between enterprises and higher vocational colleges, thereby improving the efficiency of resource allocation.

Lu (2023) believes that higher vocational colleges should improve data collection accuracy, use big data tech to analyze teaching situations, establish and strengthen diagnosis platforms, enhance diagnosis accuracy, clarify evaluation subjects, and increase the evaluation's scientific nature.

### 2.5 Principles for Formulating Strategies

Xu (2013) pointed out that to achieve the goal of a humanistic education strategy; seven principles must be followed: orientation with university culture, all-round integration of elements, humanization respecting students, openness absorbing experience, ecology in resource allocation, integration of science and humanities, and unity of humanities and society.

From educational strategy formulation principles, the principle behind it is to ensure educational implementation aligns with goals and values. Following principles improves educational quality and ensures fairness, equality, adaptability, and flexibility. It encourages new teaching methods and models, promoting innovation and ensuring educational sustainability.

## 3. Method

Based on the actual situation, the researchers selected 3 higher vocational colleges and 3 general higher

vocational colleges in Hunan Province that the Ministry of Education of China recognized to build high-level schools and high-level professional clusters, a total of 6 higher vocational colleges in Hunan Province as research objects. This research used a mixed method. This research is divided into 3 phases.

Part 1: The current status of sustainable development of humanistic education in higher vocational colleges in Hunan Province.

This paper uses a questionnaire to study the current status of sustainable development of humanistic education in higher vocational colleges in Hunan Province.

### *3.1 The Population*

The research population included 3351 people related to the sustainable development of humanistic education in 6 higher vocational colleges in Hunan Province, classified as follows: 2769 teachers, 192 school administrators and 390 corporate mentors.

### *3.2 The Sample Group*

The sample group of this study includes 666 people related to the sustainable development of humanistic education in higher vocational colleges in Hunan Province in the academic year 2024. The sample group was determined by random sampling using the table provided by Krejcie and Morgan (1970). According to the stratified random sampling method, it is divided into 338 teachers, 132 school administrators and 196 corporate mentors.

The problems, approaches, and factors influencing the sustainable development of humanistic education in higher vocational colleges in Hunan Province were studied through interviews. The interviewees were from higher vocational colleges in Hunan Province, and 12 people were randomly selected using a purposive sampling method.

Part 2: Strategies for sustainable development of humanistic education in higher vocational colleges in Hunan Province.

- 1) Educational management strategies for humanistic education's sustainable development in successful Hunan vocational colleges studied via interviews. Data from 2 successful institutions (3 per institution, total 6). Criteria: the best higher vocational colleges with high-level education.
- 2) Through focus group discussion, the internal and external environment of Hunan vocational colleges' humanistic education's sustainable development was analyzed, and a strategy was drafted. Twelve 12 were randomly selected by purposive sampling for discussion.
- 3) Via experts' focus group discussion, reviewed draft strategy for Hunan vocational colleges' humanistic education's sustainable development, discussed its suitability and feasibility to formulate the plan. 5 experts were randomly selected by purposive sampling.

Part 3: The effectiveness of suitability and feasibility of the strategies for sustainable development of humanistic education in higher vocational colleges in Hunan Province.

The sustainable development strategy of humanistic education in higher vocational colleges in Hunan Province was evaluated from the perspective of suitability and feasibility. According to the selection qualification criteria, 5 experts with strategic planning knowledge and ability from higher vocational colleges in Hunan Province were selected using purposive sampling.

### *3.3 Research Instruments*

The tools used in this study include questionnaires, in-depth interviews, focus groups, and effectiveness evaluation.

### *3.4 Data Collection*

#### 1) Qualitative Data Collection

##### 1.1) In-depth Interviews:

Understand the challenges, approaches, and factors of sustainable development of humanistic education in Hunan vocational colleges.

Gain insights into its successful practices.

##### 1.2) Focus Group Discussions:

Discuss the draft strategy for its sustainable development.

Evaluate adaptability and feasibility to formulate strategy.

## 2) Quantitative Data Collection

2.1) Questionnaire Survey: Design different questionnaires for teachers, administrators, and mentors to assess status using the Likert scale and open-ended questions.

2.2) Effectiveness Evaluation: Develop an evaluation scale and invite experts to assess the strategy, focusing on suitability and feasibility.

## 3.5 Data Analysis

### 1) Qualitative data analysis:

1.1) Thematic analysis: Identify core themes for humanistic education's sustainable development in vocational colleges.

1.2) Coding system: Ensure consistency for pattern tracking and analysis.

### 2) Quantitative data analysis:

#### 2.1) Statistical analysis:

Mean & standard deviation method: Analyze problems, approaches, factors, and strategies for humanistic education in Hunan vocational colleges—mean data interpretation based on Rensis Likert (1932).

Frequency & percentage: Analyze sample respondents' info by gender, age, education, title/position, and work experience.

2.2) Content analysis: Apply structured interview research content comparing variables.

2.3) Comprehensive analysis.

### 3) Mixed method analysis:

Integrate qualitative and quantitative data to find intersections via SWOT, PEST, and TOWS analysis for a more comprehensive understanding.

## 4. Results

Research on Strategies for the Development of Sustainable Humanistic Education in Higher Vocational Colleges in Hunan Province. The researchers summarized the results into three parts, as follows:

Part I: The current status of sustainable development of humanistic education in higher vocational colleges in Hunan Province.

At present, the seven aspects of humanistic education in higher vocational colleges in Hunan Province, including teaching methods, curriculum content, talent training programs, faculty team building, evaluation system, social practice, and school-enterprise cooperation, are all at a moderate level, among which the average level in teaching methods is the highest. The average level in social practice is the lowest.

The current status of teaching methods is at a moderate level. According to the results of this study, the order of the current status of teaching methods from high to low is as follows: "Regularly organizing students to display the learning outcomes of humanistic education courses" has the highest average level, followed by "Online + offline' hybrid teaching mode", "focusing on the use of innovative teaching technologies" and "sufficient practical teaching arrangements in humanistic education". "The school frequently organizes lectures, forums or exhibitions related to humanistic education" has the lowest average level.

The status of course content is at a moderate level. According to the results of this study, the order of the status quo of course content from high to low is as follows: "The proportion of practical links (such as case analysis and simulation exercises) in the course content is appropriate" has the highest average level, followed by "using different course content for students of different majors", "the course content is in line with the actual needs of students" and "the course content incorporates the latest humanistic concepts". "The teaching content meets the requirements of teaching innovation technology" has the lowest average level.

The current status of the talent development program is at a moderate level. According to the results of this study, the current status of talent training programs is ranked from high to low in the following order: "Carrying out corresponding humanistic education according to the characteristics of professional categories" has the highest average level, followed by "Reasonable arrangement of humanistic education course hours", "Reasonable proportion of humanistic education courses in the curriculum system" and "Sufficient arrangement of social practice teaching in humanistic education courses". "Incorporating humanistic education into the talent

training goals of various majors” has the lowest average level.

The current status of teacher team building is at a moderate level. According to the results of this study, the current levels of teacher team construction are in the following order from high to low: “regularly selecting teachers to participate in humanistic education practice in enterprises and society” has the highest average level, followed by “regularly organizing teachers to participate in professional training or academic exchanges in humanistic education”, “regularly carrying out humanistic education research activities” and “the school has rich humanistic education teachers”. The average level of “regularly assessing humanistic education teachers” is the lowest.

The current status of the evaluation system is at a moderate level. According to the results of this study, the current status of the evaluation system is in the following order from high to low: “Formulating sustainable development of humanistic education evaluation goals” has the highest average level, followed by “regularly organizing teaching supervision experts to conduct classroom teaching evaluation and guidance”, “regularly organizing special inspections of humanistic education” and “regularly organizing students to evaluate and feedback on humanistic education”. “Regularly measuring the effect of students’ humanistic education” has the lowest average level.

The current status of social practice is at a moderate level. According to the results of this study, the current status of social practice is in the following order from high to low: “Rich and diverse forms of social practice” has the highest average level, followed by “harmonious connection between social practice and classroom teaching”, “comprehensive analysis of social practice data and transformation of social practice results” and “rich social practice content system”. “Establishing an effective social practice process supervision mechanism, professional teachers promptly answer students’ doubts about social problems” has the lowest average level.

The current status of school-enterprise cooperation is at a moderate level. According to the results of this study, the order of the current status for school-enterprise collaboration from high to low is as follows: “Enterprise mentors often participate in the humanistic education of higher vocational colleges” has the highest average level, followed by “Enterprises often organize training to improve humanistic education guidance capabilities”, “School-enterprise cooperation projects keep up with industry development trends and meet students’ future workplace needs” and “Schools and enterprises share humanistic education information and resources”, and “Enterprises regularly evaluate and provide feedback on the humanistic education of higher vocational colleges” has the lowest average level.

Part 2: Strategies for developing sustainable humanistic education in higher vocational colleges in Hunan Province.

Hunan Province’s higher vocational colleges have 7 aspects and 35 measures in their strategies for sustainable development of humanistic education, including 5 measures to improve talent training programs, 5 measures to strengthen faculty team building, 5 measures to Innovative teaching methods, 5 measures to Enrich course content, 5 measures to organize social practice, 5 measures to strengthen school-enterprise cooperation, and 5 measures to establish an evaluation system.

Strategies to improve talent training programs include: 1) Clarifying humanistic education’s talent training goals. 2) Construct a scientific and reasonable curriculum system. 3) Reasonably set the course hours for humanistic education. 4) Arrange sufficient social practice teaching for humanistic education. 5) Open interdisciplinary courses.

Strategies for Strengthening the construction of the teaching staff include: 1) Introduce high-level humanistic education teachers. 2) Organize teachers to participate in professional training or academic exchanges in humanistic education. 3) Develop a diversified assessment mechanism for humanistic education teachers. 4) Select teachers to participate in humanistic education practice in enterprises and society. 5) Carry out humanistic education research activities.

Strategies for innovative teaching methods include 1) “Online + offline” hybrid teaching mode. 2) They organized lectures, forums, and exhibitions related to humanistic education. 3) Organizing students to display the learning results of humanistic education courses. 4) There are sufficient arrangements for social practice teaching in humanistic education courses. 5) Focus on the use of innovative teaching technologies.

Strategies for enriching course content include: 1) The course content must meet the actual needs of students in the future workplace and society. 2) The course content incorporates the latest humanistic concepts. 3) The course content incorporates practical links such as case analysis and simulation exercises. 4) The course content meets the characteristics and needs of different majors. 5) The course content meets the requirements of

innovative teaching technologies.

Strategies for Organizing Social Practice include: 1) Establishing a rich social practice content system. 2) Enrich the forms of social practice. 3) Organically connect social practice with classroom teaching to realize the mutual recognition mechanism of credits. 4) Establish a supervision mechanism for the social practice process to guide professional teachers in promptly answering social questions students are confused about. 5) Encourage students to comprehensively analyse social practice data and transform it into social practice results.

Strategies for strengthening school-enterprise cooperation include: 1) Joint curriculum development between schools and enterprises to achieve information and resource sharing of humanistic education. 2) Establish a corporate mentor system and frequently participate in humanistic education in higher vocational colleges. 3) Enterprises frequently organize training to improve the ability to guide humanistic education. 4) Enterprises regularly evaluate and provide feedback on the humanistic education of higher vocational colleges. 5) Create school-enterprise cooperation projects that keep up with industry development trends and meet students' future workplace needs.

Strategies to Establish an evaluation system include: 1) Clarify the purpose and content of humanistic education evaluation. 2) Diversify the evaluation subjects of humanistic education. 3) Multi-dimensional humanistic education evaluation indicators. 4) Standardize humanistic education evaluation methods and tools. 5) Develop a humanistic education feedback mechanism.

Part 3: The effectiveness of strategies for developing sustainable humanistic education in higher vocational colleges in Hunan Province.

The suitability and feasibility of the seven aspects of the sustainable development humanistic the education strategy of higher vocational colleges in Hunan Province is at a high level, with average values ranging from 3.60 to 4.60 and 4.00 to 4.80, respectively, indicating that the strategy of this study is highly suitable and feasible.

- The suitability and feasibility of improving the talent training program were highest. The suitability and feasibility of strengthening the construction of the teaching staff were high.
- The suitability and feasibility of innovative teaching methods were high.
- The suitability and feasibility of enriching the course content were high.
- The suitability and feasibility of organizing social practice were high.
- The suitability and feasibility of strengthening school-enterprise cooperation were high.
- The suitability and feasibility of establishing an evaluation system were high.

## 5. Discussion

Research on Sustainable Development Strategies of Humanistic education in Higher Vocational Colleges in Hunan Province. The researchers summarized the discussion into three parts, as follows:

Part I: The current status of sustainable development of humanistic education in higher vocational colleges in Hunan Province.

The average and standard values of the seven variables were analyzed by investigating the current status of teaching methods, course content, talent training programs, faculty team construction, evaluation system, social practice, and school-enterprise cooperation in humanistic education in higher vocational colleges in Hunan Province. It was found that the total average of teaching methods, course content, talent training programs, faculty team construction, evaluation system, social practice, and school-enterprise cooperation was 3.069, all of which were at a moderate level and needed further improvement.

In terms of teaching methods, "Students are often organized to display the learning results of humanistic education courses", "'online + offline' hybrid teaching mode", and "focus on the use of innovative teaching technologies" are at a moderate level, which is consistent with the view of Liu (2012), who believes that humanistic education remains at the problem of imparting descriptive knowledge and has not been internalized into students' humanities qualities. "There are sufficient practical teaching arrangements in humanistic education "and" the school often organizes lectures, forums or exhibitions related to humanistic education "are at a moderate level, which is consistent with the view of Li (2016), who believes that there are problems with unreasonable curriculum settings in humanistic education. In terms of course content, "the proportion of practical links (such as case analysis and simulation exercises) in the course content is appropriate", "different course content is used for students of different majors", and "the course content is consistent with the actual

needs of students” are at a moderate level, which is consistent with the views of Martha (2010). He believes university course settings are all oriented towards careers and employment, resulting in abandoning humanistic education such as literature, history, and philosophy that understands human nature and human cultivation. This is also consistent with the views of Zeng (2017). He believes that the country and society require universities to cultivate practical and practical talents and cultivate technical and technical talents and strongly emphasizes that universities should offer more natural science courses, followed by social science courses, and humanities courses are placed in the least prominent position.

In terms of talent training programs, “carry out corresponding humanistic education according to the characteristics of professional categories” and “humanistic education is included in the talent training goals of each major “ are at a moderate level, which is consistent with the view of Gao (2007), who believes that there is a deviation in the training goals of higher vocational education, focusing on skill training and neglecting the education of students’ all-round development, and the inaccurate school positioning leads to the lack of pertinence of humanistic education. This is also consistent with the view of Yang (2019), who believes that humanistic education is ignored in the school-running philosophy of higher vocational colleges, humanistic education is not included in the overall planning of higher vocational colleges, and professional courses squeeze out the hours of humanistic education. However, “the course hours of humanistic education are reasonable”, “the proportion of humanistic education courses in the curriculum system is reasonable”, and “there are sufficient arrangements for social practice teaching in humanistic education courses” are at a moderate level, which is consistent with the view of Liu (2012), who believes that in the explicit curriculum system of higher vocational education, humanities courses are weak and difficult to show, humanistic education lacks communication with professional education, professional teachers are indifferent, and humanistic education fades out of skill teaching classrooms. This is also consistent with the view of Zeng (2017), who believes that there are few disciplines and a single type of courses in terms of humanistic education curriculum construction, and a complete humanities and social science curriculum system has not been formed. The curriculum system is centered on professional theory courses, and classic humanities courses are excluded from professional theory courses.

In terms of teacher staff building, “teachers are often sent to enterprises and society to participate in humanistic education practice”, “teachers are often organized to participate in professional training or academic exchanges in humanistic education”, “the school has a rich humanistic education faculty”, “teachers of humanistic education are regularly assessed” and “humanistic education research activities are often carried out” are at a moderate level, which is consistent with the view of Gao (2007), who believes that humanistic education in China’s higher vocational colleges lacks a mechanism to motivate teachers to conduct professional humanistic education and that the participation of teachers is insufficient. This is also consistent with the view of Liu (2012), who believes that there are phenomena in higher vocational education, such as professional teachers ignoring humanistic education, the teaching management system lacks a mechanism to discuss and integrate professional education and humanistic education, and the humanistic education faculty is insufficient.

In terms of the evaluation system, “formulate sustainable development evaluation goals for humanistic education” is at a moderate level, which is consistent with the view of Liu (2012), who believes that one of the reasons for the lack of humanistic education in higher vocational education is that humanistic education is affected by the lack of an independent evaluation indicator system for higher vocational education. “Regularly organize teaching supervision experts to conduct classroom teaching evaluation and guidance”, “regularly organize special inspections of humanistic education”, “regularly organize students to evaluate and give feedback on humanistic education”, and “regularly measure the effects of students’ humanistic education” are at a moderate level, which is similar to the view of Su and Huang (2018), who believe that humanistic education lacks self-reflection and self-renewal, and constantly loses its due realistic care and critical spirit. In addition, humanistic education has the disadvantages of empty and stale content and rigid and dogmatic forms to a certain extent, which leads to its profound disconnection from social needs.

In terms of social practice, “the forms of social practice are rich and diverse”, “the social practice is harmoniously connected with classroom teaching”, “the social practice data is comprehensively analyzed and transformed into social practice results”, “it has a rich social practice content system”, and “an effective social practice process supervision mechanism has been established, and professional teachers answer students’ social questions promptly” are at a moderate level, which is consistent with the view of Hong (2022). He believes that there are differences in the goals of practical education in colleges and universities, which leads to the lack of coordination between the central bodies of work, and the collaborative management of the content and process of practice needs to be improved. The first and second classroom carriers have coordination but must be further deepened. The communication between the implementation subjects of practical education is not timely and

smooth, and there is a lack of mechanisms for problem feedback.

In terms of school-enterprise cooperation, “enterprise mentors often participate in the humanistic education of higher vocational colleges”, “enterprises often organize training to improve the ability to guide humanistic education”, “school-enterprise cooperation projects keep up with industry development trends and meet students’ future workplace needs”, “humanistic education information and resources are shared between schools and enterprises “ and “enterprises regularly evaluate and provide feedback on the humanistic education of higher vocational colleges” are at a moderate level, which is consistent with the views of Chen (2023). He believes that driven by policies, interests and responsibilities, school-enterprise cooperation lacks motivation, enterprises are not very enthusiastic about participating in school-enterprise collaboration, resource allocation in the cooperation process is unreasonable, cooperation lacks long-term stability, and the content and form of school-enterprise cooperation are too single, which can easily lead to the disconnection between the teaching content of vocational education and actual needs. The existing school-enterprise cooperation evaluation system focuses too much on assessing economic benefits and neglects to evaluate education quality.

Part 2: Strategies for sustainable development of humanistic education in higher vocational colleges in Hunan Province.

The questionnaire survey on the current situation of humanistic education in higher vocational colleges in Hunan Province and the interviews on the problems, approaches and influencing factors of sustainable development of humanistic education in step one, SWOT and PEST, were used for data analysis, laying the foundation for formulating a scientific and reasonable strategy draft. Then, in step two, the relevant personnel of two higher vocational colleges with successful humanistic education in Hunan Province were interviewed again, which provided a reference for formulating the strategy draft. Then, through the focus group discussion, a strategy draft of 35 measures in 7 aspects was proposed. Finally, after the focus group discussion of experts, the strategy for sustainable development of humanistic education in higher vocational colleges in Hunan Province was obtained.

Strategy 1: Improve the talent training program. 3 measures of “clarify the talent training goals of humanistic education”, “construct a scientific and reasonable curriculum system”, and “reasonably set the course hours of humanistic education” are consistent with the views of Liu (2012), who believes that humanistic education in higher vocational colleges should clarify the goals of humanistic education and increase the proportion of explicit humanities courses. This is also consistent with the views of Yang (2019), who believes that higher vocational colleges should coordinate the construction of students’ knowledge system, skill system, and spiritual system, establish the training goals of both humanistic education and technical skills education, and embed humanistic education courses into the curriculum system. 2 measures of “arrange sufficient social practice teaching of humanistic education” and “open interdisciplinary courses” are consistent with the views of Ding (2023), who believes that to optimize the talent training program of vocational education, it is necessary to reasonably allocate teaching hours, build a practical teaching system as a whole, optimize the form and carrier of practical teaching, ensure the quality of practical teaching, improve the practical teaching evaluation system, and enhance students’ practical ability.

Strategy 2: Strengthen the construction of the teaching staff. 4 measures of “introduce high-level humanistic, education teachers”, “organize teachers to participate in professional training or academic exchanges in humanistic education”, “select teachers to participate in humanistic education practice in enterprises and society”, and “carry out humanistic education research activities” are consistent with the views of Li (2016). She believes that full-time and part-time teachers should constantly absorb and learn new knowledge of humanities literacy, expand their knowledge, and play a guiding role in students’ learning and understanding of the world through lesson preparation and daily teaching exchanges. It is also consistent with the views of Yang (2019). He believes that the quality level of the faculty of higher vocational colleges profoundly impacts humanistic education. The faculty can be formed by selecting a group of teachers with profound academic accomplishments, rich humanistic spirit, and patriotism. At the same time, experts with profound academic attainments and social influence can be hired for the social sciences, industries, and enterprises to establish a part-time faculty team. The measure of “develop a diversified assessment mechanism for humanistic education teachers “ is consistent with the view proposed by Wang (2021) that sustainable development education should be included in the content and assessment standards of teacher training.

Strategy 3: Innovative teaching methods. 2 measures of “online + offline hybrid teaching mode” and “focus on the use of innovative teaching technologies” are consistent with the views of Su and Huang (2018), who believe that humanistic education must actively occupy the network position, use modern information dissemination technology, integrate MOOC (high-quality Chinese MOOC), micro-courses and other open network platform

online resources, and enhance students' "learning ability" in humanities courses through a combination of online learning and offline sharing, and mobilize students' learning enthusiasm. This is also consistent with the views of Yu (2022), who believes that implementing higher vocational humanistic education in teaching methods should adopt an online and offline hybrid teaching mode and form efficient interaction between learners and guides. 3 measures of "organize lectures, forums or exhibitions related to humanistic education", "organize students to display the learning results of humanistic education courses", and "there are sufficient arrangements for social practice teaching in humanistic education courses" are consistent with the views of Guan et al. (2023). They believe integrating high-quality educational resources and reforming teaching content and methods can accelerate the effective and in-depth integration of school education at all levels and types with sustainable development education through thematic education, general education, boutique classrooms, school-based courses, and other forms. Enrich and expand the innovative practice of sustainable development education through camp education, pan-study tours, project cooperation and other forms. Combined with learner-centred methods, it guides learners in building a sustainable development knowledge system, promotes action-oriented learning methods, and combines what they have learned with daily life behaviours. This is also consistent with the views of Zhou (2023), who believes in creating a harmonious classroom atmosphere and promoting emotional interaction. Effectively use feedback strategies to promote emotional interaction between teachers and students; emphasize cooperative learning and encourage emotional interaction between students.

Strategy 4: Enrich course content. 2 measures of "course content must meet the actual needs of students in the future workplace and society" and "course content incorporates the latest humanistic concepts" are consistent with the views of Liu (2012), who believes that the selection of the primary content of higher vocational humanistic education should adhere to the principles of promoting classics, grasping mainstream trends, and being in line with the specific circumstances of students. This is also consistent with the views of Zhang (2023), who believes that the setting of teaching content should keep up with social hot spots, follow the development trend of the times, and meet the needs of different teaching stages and different audience groups to the greatest extent. 3 measures of "course content incorporates practical links such as case analysis and simulation exercises", "course content meets the characteristics and needs of different majors", and "course content meets the requirements of teaching innovation technology" are consistent with the views of Su and Huang (2018), who believe that China's excellent traditional culture has a long history and profound connotations, providing rich spiritual and cultural resources for humanistic education. Incorporating humanistic education into the teaching plan promotes its integration and interaction with professional courses. Through building a practice platform, organizing competition activities, holding academic forums and other diversified forms, the rich thoughts and culture of Chinese culture can be internalized into students' hearts, forming a good atmosphere for traditional cultural education.

Strategy 5: Organize social practice. 3 measures of "establishing a rich social practice content System", "enrich social practice forms" and "organically connecting social practice with classroom teaching to realize the credit recognition mechanism" are consistent with the views of Chen (2021). She believes it is necessary to continuously enrich practice content, innovate the form of practice, and open up the practice front. Incorporate social practice into the teaching plan, stipulate the corresponding hours and credits, organize work-study programs, volunteer services, social welfare, and other activities, and promote students to establish sound professional ethics and develop good professional habits. This is also consistent with the views of Ma (2023). She believes that interdisciplinary humanistic education should be combined with practice, focus on the connection with real life, and enable students to apply the theoretical knowledge they have learned to practical situations. 2 measures of "establish a social practice process supervision mechanism to guide professional teachers to promptly answer students' social questions" and "encourage students to conduct a comprehensive analysis of social practice data and transform it into social practice results" are similar to the views of Hu (2018). He believes that practical activities should be closely integrated with professional education, the curriculum concept of social practice should be strengthened, the participation and effectiveness of social practice activities should be emphasized, and distinctive activity brands should be established.

Strategy 6: Strengthen school-enterprise cooperation. 3 measures of "joint curriculum development between schools and enterprises to achieve information and resource sharing of humanistic education", "enterprises regularly evaluate and provide feedback on the humanistic education of higher vocational colleges", and "create school-enterprise cooperation projects that keep up with industry development trends and meet students' future workplace needs" are consistent with the views of Wu (2015). They build an open teaching system, school-enterprise cooperation evaluation system and service system that can connect with enterprises and industries, create a standardized and orderly evaluation system, and effectively promote the sustainable

development of school-enterprise cooperation. This is also consistent with the view of Zheng (2021). Through cooperative education, enterprises and higher vocational colleges can achieve resource sharing and complementarity, thereby improving the efficiency of resource allocation. 2 measures of “a corporate mentor system and frequently participate in humanistic education in higher vocational colleges” and “enterprises regularly organize training to improve the guidance ability of humanistic education” are consistent with the view of Chen (2021). Schools and enterprises cooperate mutually beneficial in teaching staff, technical resources, classroom teaching, job training, scientific research, etc., and a vocational education talent training mechanism guided by social needs.

Strategy 7: Establish an evaluation system. 3 measures of “clarify the purpose and content of humanistic education evaluation”, “diversify the evaluation subjects of humanistic education”, and “multi-dimensional humanistic education evaluation indicators” are consistent with the views of Liu (2012). He believes that a reasonable evaluation of humanistic education in higher vocational colleges should evaluate the overall planning of humanities quality education in higher vocational colleges from the aspects of school orientation, system construction, and leadership attention, assess the humanistic education and teaching status of higher vocational colleges from the four elements of environment construction, teacher construction, curriculum construction, and teacher construction, and evaluate the status of humanistic education activities in higher vocational colleges from the perspectives of academic activities, cultural and sports activities, and social practice activities; the humanistic education achievements of higher vocational colleges should be evaluated from factors such as student achievements, college achievements, and social influence. The measure of “standardised humanistic education evaluation methods and tools” is consistent with the views of Lu (2023). She believes that higher vocational colleges should further strengthen the awareness of big data, establish and improve the teaching quality diagnosis platform, improve the accuracy of diagnosis, further clarify the subject of teaching quality evaluation, and enhance the scientific nature of evaluation. This is also consistent with the view of Yang (2023), who believes that it is necessary to optimize the evaluation system comprehensively, combine it with the education quality assurance system, create a new evaluation method, change the single form of the traditional evaluation system, and advocate the participation of multiple evaluation subjects. The measure of “develop a humanistic education feedback mechanism “ is similar to the view of Yu (2022), who believes that student feedback on humanities courses is mainly presented through course discussions, questions and answers, and other teacher-student and student-student interactions, which are primarily conducted simultaneously with teacher teaching. Through the analysis of students’ online activity traces, the learning platform can establish an electronic file for each student, and the teacher’s analysis and evaluation of the electronic file can form a comprehensive and in-depth process evaluation, which serves as an essential reference for measuring students’ learning effects.

Part 3: The effectiveness of strategies for sustainable development of humanistic education in higher vocational colleges in Hunan Province.

5 experts evaluated the analysis results of this part. All the members of the expert group have doctoral degrees, including 1 expert with knowledge and experience in strategy formulation, 2 academic managers with associate professor titles or above, 1 educational institution manager with associate professor titles or above, and 1 teacher with associate professor titles or above. The evaluation adopts a five-level scoring system, and the respondents can only choose one level to evaluate the suitability and feasibility of the sustainable development humanistic education strategy of higher vocational colleges in Hunan Province.

The suitability and feasibility of the 7 aspects of the sustainable development humanistic education strategy of higher vocational colleges in Hunan Province are at a high level, with the average values ranging from 3.60 to 4.60 and 4.00 to 4.80, respectively, indicating that this research strategy has high suitability and feasibility.

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### Authors contributions

Dr. Zhang Jingrui and Associate Professor Dr. Chollada Pongpattanyothin were responsible for study design and revising. Dr. Zhang Jingrui was responsible for data collection and drafted the manuscript. Associate Professor Dr. Narongwat Mingmit, Dr. Thanida Sujarittham and Dr. Chawalit Jujia revised it. All authors read and approved the final manuscript.

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