

Enhancing educational administration based on Taoist thought of higher vocational colleges in Hebei Province

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Abstract

This paper aims to: 1) explore the impact mechanism of Taoist thought on the educational management practice of higher vocational colleges in Hebei Province; 2) identify the key factors affecting the management effectiveness of higher vocational education through empirical analysis; 3) construct an optimization model for higher vocational education management based on Taoist philosophy. This study adopts a mixed research method design, integrating quantitative questionnaire surveys and qualitative in-depth interviews. The theoretical framework is based on the core management ideas of Taoism (including "rule by inaction", "Tao follows nature", "yin and yang balance", etc.), focusing on the field of higher vocational education management. The research subjects adopt a stratified random sampling method, and 501 educational managers and full-time teachers from 56 higher vocational colleges in Hebei Province are selected as the research sample. The research tools include: 1) a Likert five-level scale questionnaire containing 105 items; 2) a semi-structured interview outline; 3) a literature analysis tool. The data analysis methods include: descriptive statistics, exploratory factor analysis (EFA) and principal component analysis (PCA) are used for quantitative data using SPSS software; qualitative data are coded and themes are extracted using content analysis. The study found that: 1) The Taoist concept of "ruling by doing nothing" can significantly improve management flexibility (factor loading 0.73-0.85), but a corresponding responsibility constraint mechanism needs to be established; 2) The cumulative variance explanation rate of the 7 common factors extracted by exploratory factor analysis reached 85.78%, proving that Taoist management thought has multidimensional construct validity. The theoretical contribution of this study lies in expanding the application paradigm of traditional Chinese philosophy in modern education management. The practical significance is reflected in providing higher vocational colleges with an innovative solution that integrates traditional wisdom with modern management needs, which has important reference value for improving the effectiveness of education governance.

Keywords: Educational administration, Taoist thought, Vocational colleges,

Introduction

In recent years, with the rapid development of vocational education in China, the education management of higher vocational colleges faces the dual challenges of efficiency improvement and cultural construction (Chen, 2023). Although modern management theory has been widely used in the field of vocational education, the contradiction between the rigid characteristics of traditional management models and the diversified development needs of vocational education has become increasingly prominent (Shi, 2024). Existing research shows that the adaptability of Western management theory in the Chinese education environment is limited, and localized management research based on traditional Chinese philosophy is relatively scarce (Fan, 2017). It is particularly noteworthy that the relevant literature in the past two years shows that the application of Taoist thought in education management is mainly concentrated in the field of basic education, and empirical research on the specific context of higher vocational education is still blank (Caldwell & Verney, 2024). This knowledge gap limits the innovative application of traditional wisdom in modern vocational education management, and it is urgently needed to be filled through systematic research.

Research Objectives

Hebei Province is an important pilot province for China's vocational education reform. The number of students in its 56 higher vocational colleges has exceeded 500,000 (Hebei Provincial Department of Education, 2023). Through preliminary research, this research team found that higher vocational colleges in the region generally have problems such as low management efficiency and low satisfaction of teachers and students. These problems are closely related to deep-seated factors such as excessive administration and lack of cultural identity. This study selected managers and full-time teachers of higher vocational colleges in Hebei Province as the target group for relevant research.

Research objectives and methods

The research objectives are as follows:

1. To study the level of educational administration based on Taoist thought of higher vocational colleges in Hebei Province.
2. To analyze the exploratory factors analysis of educational administration based on Taoist thought of higher vocational colleges in Hebei Province.
3. To propose the guideline for the development of educational administration based on Taoist thought of higher vocational colleges in Hebei Province.

To achieve these objectives, this paper adopts a mixed research method design. In the quantitative stage, a questionnaire survey was conducted on 501 research subjects through stratified random sampling, and exploratory factor analysis was conducted using SPSS 26.0. Subsequently, 25 key informants were selected for semi-structured interviews, and ethical review procedures were strictly followed.

Research structure and contributions

This paper first systematically combs through the theoretical context of Taoist management philosophy, then presents the empirical findings of quantitative and qualitative research, and finally proposes an operational management model. The research innovations are: (1) establishing the theoretical connection between Taoist thought and higher vocational education management for the first time; (2) developing a measurement tool with good reliability and validity; (3) proposing a "dynamic balance management framework". These achievements not only enrich the localization research of educational management theory, but also provide new ideas for the modernization of higher vocational college governance through specific management strategies.

Literature Review

The concept of education in Taoist principles

Taoist thought, especially Laozi's concept of "non-intervention," has significant reference value in modern management theory. The core idea of non-intervention is to align with natural laws, reduce human interference, and establish good cultural and behavioral norms that allow individuals to voluntarily and proactively complete tasks without constraints. This concept is not only widely applied in corporate management but also has important implications for educational administration. This paper aims to explore how Taoist thought, especially the concept of non-intervention, can be applied to school administrative management to optimize management, enhance efficiency, and promote the mutual development of teachers and students (Fan Liyuan, 2017).

2.2. Concepts and Theories related to Chinese higher colleges

As an education type that undertakes the task of vocational higher education, higher vocational education aims to cultivate technical senior professionals. In specific educational practice, higher vocational colleges not only focus on the cultivation of students' professional knowledge and skills, but also emphasize the comprehensive development of students in morality, culture, professional literacy, etc., and strive to cultivate compound talents with both profound professional knowledge and good professional literacy. In addition, higher vocational education also shoulders the important mission of serving the national development strategy, promoting industrial upgrading, and improving the overall quality of the nation. By deepening education and teaching reforms, innovating talent training models, strengthening the construction of the teaching staff, and improving the quality of education, higher vocational colleges are committed to providing the society with more high-quality technical and skilled talents to meet the needs of national economic and social development (Shi, 2024).

Recent Studies on educational administration based on Taoist thought in China

Taoist thought, especially Laozi's concept of "non-intervention," has significant reference value in modern management theory. The core idea of non-intervention is to align

with natural laws, reduce human interference, and establish good cultural and behavioral norms that allow individuals to voluntarily and proactively complete tasks without constraints. (Fan Liyuan, 2017). Non-intervention is one of the core elements of Laozi's Taoist thought, emphasizing that managers should align with natural laws and avoid excessive human interference. Laozi mentions in the "Tao Te Ching": "I do nothing and the people naturally transform; I enjoy tranquility and the people naturally correct themselves; I do nothing and the people naturally prosper; I desire nothing and the people naturally become simple." The essence of this management philosophy is to create an environment where subordinates naturally perform their work with minimal intervention (Ji Min, 2015).

Research Gaps and the Need for This Study

Taoist thought is a very important part of Chinese philosophical thought, Taoist thought in education management thought in vocational colleges and universities in less research, this study is based on Taoist thought to study the influence of Taoist education management thought in vocational colleges and universities, not only conducive to improving the internal management level and service quality of the college, but also conducive to creating a more harmonious and efficient learning environment for teachers and students. Ultimately, it realizes a new education management mode that meets the requirements of the times and philosophical concepts and lays a solid foundation for the cultivation of first-class talents.

Research Methodology

Research Design

This study adopted a mixed-methods research design, combining quantitative and qualitative research methods. The quantitative research was conducted through a questionnaire survey to collect data on teacher motivation and related factors, and the qualitative research was carried out by in-depth interviews with experts to gain in-depth understanding and validation of the research findings.

Participants

15 administrators and 10 teachers were selected as subjects for in-depth interviews. These participants should be representative and effectively reflect the views and experiences of their groups.

Data Collection Tools

1. Questionnaire

The questionnaire consisted of nine parts: Demographic data of the Respondents, Current Situation of Educational administration, Governance by Inaction, Tao Follows Nature, Yin and Yang Balance, Use Softness to Overcome Hardness, Strength Without Desire, Adapt to Nature, Interview Protocol. The items in the questionnaire were measured using a 5-point Likert scale, ranging from "strongly disagree" to "strongly agree". The content validity of the questionnaire was ensured through literature review and expert consultation, and the

reliability was tested using Cronbach's alpha coefficient, which was found to be above 0.7, indicating good reliability.

2. Interview

A semi-structured interview guide was developed to conduct in-depth interviews with the experts. The interview questions were mainly related to the experts' views on the current situation of higher education management, the influencing factors of Taoism's idea of doing nothing in education management, and Taoism's suggestion of a natural teacher team, and so on. The interviews were conducted online and each interview lasted about 20 minutes. Interview data were recorded and transcribed for subsequent analysis.

Data Analysis Methods

1. Quantitative Data Analysis

Quantitative data collected from the questionnaire was analyzed using SPSS software. Descriptive statistics were used to analyze the demographic characteristics of the participants as well as the mean and standard deviation of each variable. An exploratory factor analysis was conducted to determine the factors underlying the influence of Taoist thought on vocational education management and to test the reliability and validity of each factor.

2. Qualitative Data Analysis

This study uses a semi-structured interview method to deeply explore the practical application and potential improvement direction of Taoist thought in the education management of higher vocational colleges in Hebei Province. The interviewees include managers, teachers and relevant education experts of higher vocational colleges to ensure that management experience and practical views at different levels can be presented. Before the interview, the researcher designed an open-ended question framework covering topics such as educational management concepts, governance practices, policy implementation, and teacher-student interaction. During the interview, the researcher flexibly adjusted the order of questions according to the interviewees' answers and encouraged them to share their true thoughts and personal experiences. This method can not only ensure the systematic nature of the interview content, but also tap into deep insights, providing rich qualitative data for the research to support in-depth analysis and optimization suggestions for the education management model of higher vocational colleges.

Research Results

1. Results of Demographic data of the Respondents

The basic demographic data of the respondents (such as gender, age, highest education and work experience) will be presented in the form of frequency and percentage to have a clear understanding of the basic background of higher vocational education managers and teachers. This part provides basic data for subsequent analysis and helps to deeply understand the cognition and application of Taoist thought by educators from different backgrounds.

Table 1 Results of analysis of frequency and percentage personal status of respondents

Name	Category	N=501	Percentage (%)
Gender of respondents	Female	305	60.9
	Male	196	39.1
Age of respondents	25 and below	5	1.0
	26-30	88	17.6
	31-35	196	39.1
	36-40	146	29.1
	41-45	59	11.8
	46-50	7	1.4
Respondent's highest educational background	Bachelor	93	18.6
	Master	312	62.3
	PhD	96	19.2
The work experience of the respondents	Less than 3 years	93	18.6
	3-5 years	196	39.1
	5-10 years	146	29.1
	10-15 years	59	11.8
	15+ years	7	1.4

Overall, the gender, age, education and work experience of the sample group show a relatively balanced distribution, which can better represent the overall situation of educational management in higher vocational colleges in Hebei Province. These characteristics provide effective background information for subsequent research on the impact of Taoist thought on educational management and provide a basis for analyzing the cognition and application of Taoist thought in educational management by different groups.

2. Results of analysis of the exploratory factors analysis of Enhancing educational administration based on Taoist thought of higher vocational colleges in Hebei Province

The study will reveal how Taoist thought plays a role in the educational administration of higher vocational colleges in Hebei Province through exploratory factor analysis. The study will analyze how the key elements of Taoist thought, such as the management philosophy of "yin and yang balance", can improve the school's adaptability to individual differences of students through detailed management practices, thereby optimizing educational results.

1. Suitability test and the coefficient correlation matrix between the variables

This study used the Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity to assess the suitability of the data and determine whether factor analysis could be performed. These two statistical tests are commonly used preprocessing steps in factor analysis to verify whether the structure of the data is strong enough to ensure that the factors extracted from the original data are meaningful.

Table 2 KMO and Bartlett's Test

KMO test and Bartlett test		
KMO value		0.97
Bartlett sphericity test	Approximate chi-square	100417.225
	df	5460
	P	0.000***

In this study, the KMO value was 0.97 and the P value of Bartlett's sphericity test was 0.000, indicating that the data had a good basis for factor analysis and that the data were well structured with significant correlations between the variables. Therefore, the study can further conduct factor extraction to explore how various management factors are clustered in latent factors in the context of the influence of Taoist thought on educational management in higher vocational colleges in Hebei Province.

2. Extract factors (Factor Extraction) using Principal Factor Analysis (PCA).

In this study, principal component analysis (PCA) was used to extract latent factors in order to better understand the impact of Taoist thought on educational management in higher vocational colleges in Hebei Province. Principal component analysis is a dimensionality reduction technique used to extract the most informative factors in the data by reducing the number of variables, thereby simplifying subsequent analysis. The key goal of factor extraction is to aggregate the variables into several new, unrelated factors by analyzing their correlations, which can effectively explain the variability of the data.

Table 3 Total Variance Explained

Factor	Rotational front difference interpretation rate			Explanation rate of variance after rotation		
	Characteristic root	Variance interpretation rate (%)	Cumulative variance explanation rate (%)	Characteristic root	Variance interpretation rate (%)	Cumulative variance explanation rate (%)
1	43.96	41.867	41.867	1342.209	12.783	12.783
2	9.935	9.462	51.328	1310.809	12.484	25.267
3	8.351	7.953	59.282	1301.461	12.395	37.662
4	8.105	7.719	67.001	1300.608	12.387	50.048
5	7.741	7.372	74.374	1283.627	12.225	62.273
6	6.251	5.953	80.326	1244.43	11.852	74.125
7	5.721	5.448	85.775	1223.206	11.65	85.775

From the results of factor extraction, the data of this study were able to extract seven factors with significant explanatory power through PCA, which together explained 85.78% of the total variance. According to the analysis of characteristic roots and variance explanation, we can see that the first factor plays a leading role in explaining the variability in the data, which also shows that there is a high degree of consistency in the main dimensions of Taoist thought applied to educational management. sex. The high variance explanation rate of the



first factor (41.87%) reflects the important position of this factor in the entire data structure. It involves the core management concepts of Taoist thought, such as "non-action governance" or "Tao follows nature", which represents educational management. The most critical theoretical basis.

Table 4 Factor loading coefficients after rotation

Item	Current Status of Education Management	label	Factor loading
1	The current education management system can effectively meet the needs of the daily operation of the school.	CSEM1	0.791
2	The decision-making process in educational management is usually transparent.	CSEM2	0.829
3	The school's management model is inflexible in the face of change.	CSEM3	0.834
4	Current education management lacks attention to the individual needs of students.	CSEM4	0.817
5	The decision of educational administrators is often based on efficiency.	CSEM5	0.841
6	The professional development of teachers occupies an important position in current educational management.	CSEM6	0.787
7	School administrators are concerned about improving the quality of education.	CSEM7	0.809
8	In education management, students' mental health problems have been fully paid attention to.	CSEM8	0.796
9	Educational administrators have a positive attitude towards the application and innovation of technology.	CSEM9	0.832
10	The current educational management system supports the diversified educational concept.	CSEM10	0.878
11	School administrators attach importance to the communication and interaction between teachers and students.	CSEM11	0.835
12	The implementation of educational policies often lacks continuity and stability.	CSEM12	0.824
13	Teachers' opinions and suggestions are often ignored in educational management.	CSEM13	0.824
14	The management mode of the school restricts educational innovation to some extent.	CSEM14	0.766
15	The current education management system can effectively cope with emergencies.	CSEM15	0.819
16	Educational administrators tend to promote school autonomy by reducing intervention.	GI1	0.789
17	Schools are usually run in a way that gives teachers more freedom.	GI2	0.848
18	Educational administrators tend to let each participant take initiative when making decisions.	GI3	0.784
19	Inaction helps to stimulate creativity within the school.	GI4	0.813
20	Educational administrators rarely interfere excessively in the day-to-day affairs of schools.	GI5	0.784
21	Education administrators usually trust the professional judgment of school teachers.	GI6	0.825
22	The role of educational administrators is more to guide than to enforce.	GI7	0.768
23	The principle of non-action governance in educational management helps to cultivate students' independence.	GI8	0.771

Item	Current Status of Education Management	label	Factor loading
24	The school's management style avoids excessive regulation and encourages innovation.	GI9	0.8
25	When faced with problems, educational administrators tend to wait for natural solutions rather than rush to intervene.	GI10	0.788
26	School management styles often emphasize self-regulation and self-management.	GI11	0.75
27	The idea of governance without doing anything pushes school teachers to take on more responsibility.	GI12	0.757
28	Educational administrators rely more on the collaboration of team members than on commands.	GI13	0.789
29	Non-action governance helps to reduce the contradictions and conflicts in school management.	GI14	0.824
30	School administrators believe that the education system can function smoothly with less interference.	GI15	0.73
31	Educational management should adapt to the changes of The Times and flexibly respond to challenges.	TFN1	0.809
32	Educational administrators should respect the natural development of school culture.	TFN2	0.891
33	Decisions in educational management should be made according to the actual situation, rather than following a rigid plan.	TFN3	0.854
34	Educational management should take into account the uniqueness of each student.	TFN4	0.845
35	School management should adapt to the pace of students' growth, rather than forcing them to adapt to standardization requirements.	TFN5	0.687
36	Educational administrators should listen to natural feedback and change when making decisions.	TFN6	0.809
37	Educational management should integrate into the natural and social environment to promote the all-round development of students.	TFN7	0.777
38	Schools should flexibly adjust their educational strategies according to changes in the external environment.	TFN8	0.852
39	The concept of education management should be harmonious with nature and avoid excessive intervention.	TFN9	0.814
40	Educational administrators should adjust educational methods according to the nature of students.	TFN10	0.83
41	Education policies should be flexible to accommodate the natural development needs of different regions and schools.	TFN11	0.788
42	School administrators should go with the flow of education, not resist change.	TFN12	0.822
43	Educational administrators respect the natural development path of the school and do not easily interfere with it.	TFN13	0.818
44	Excessive planning should be avoided in education management, allowing students and teachers to grow naturally.	TFN14	0.883
45	Schools should adjust teaching methods and curriculum content according to the characteristics of disciplines and the needs of students.	TFN15	0.797
46	Education management should find a balance between strict and relaxed.	YYB1	0.786
47	Educational administrators should find a middle point between tradition and innovation.	YYB2	0.896



Item	Current Status of Education Management	label	Factor loading
48	Education management should balance students' learning pressure and mental health.	YYB3	0.799
49	Schools should find a balance between their academic load and extra-curricular activities.	YYB4	0.898
50	Educational administrators should reconcile teachers' work load with their personal development.	YYB5	0.874
51	In the process of management, educational administrators should balance authority and democracy.	YYB6	0.929
52	School management should find a balance between stability and change.	YYB7	0.803
53	Educational administrators should balance traditional teaching with the application of modern technology.	YYB8	0.92
54	In education management, the voices of teachers and students should be given equal weight.	YYB9	0.923
55	The management mode of the school should ensure both standardization and flexibility.	YYB10	0.835
56	Educational administrators should pay attention to the overall development of students, rather than a single achievement.	YYB11	0.791
57	Education management should find a proper distribution between control and freedom.	YYB12	0.874
58	The balance between spiritual development and knowledge and skill should be emphasized in educational management.	YYB13	0.853
59	Education policies should balance the interests of all parties to ensure fairness and efficiency.	YYB14	0.879
60	Decisions in educational management should balance short-term and long-term goals.	YYB15	0.924
61	Education administrators should resolve conflicts through communication and understanding, rather than using heavy-handed measures.	USOH1	0.839
62	School management should encourage flexible leadership styles and avoid overly strict control.	USOH2	0.817
63	Educational administrators should promote educational reform through encouragement and support, not orders and coercion.	USOH3	0.82
64	Changes in educational management should be carried out in a gradual manner rather than in a rush for quick success.	USOH4	0.792
65	Schools should guide students in a gentle way and avoid excessive pressure.	USOH5	0.838
66	Education administrators should adopt a more inclusive management style.	USOH6	0.87
67	Schools should give priority to cooperative rather than competitive education.	USOH7	0.827
68	Educational administrators should replace punishment with encouragement and support.	USOH8	0.773
69	Education management should emphasize empathy and understanding rather than authority.	USOH9	0.887
70	Schools should solve problems through nonviolent communication.	USOH10	0.805
71	Education administrators should avoid excessive pressure and respect the wishes of teachers and students.	USOH11	0.808
72	School management should minimize the constraints of rules and regulations and enhance flexibility.	USOH12	0.856

Item	Current Status of Education Management	label	Factor loading
73	Educational administrators apply flexible strategies to solve the conflicts between teachers and students.	USOH13	0.903
74	Schools should promote a harmonious atmosphere by fostering a positive school culture.	USOH14	0.817
75	Educational administrators use non-confrontational methods to promote school cooperation and development.	USOH15	0.837
76	Educational administrators should lead schools with an attitude of selflessness, not self-interest.	SWD1	0.805
77	Educational management should focus on teamwork rather than individual achievement.	SWD2	0.827
78	School administrators should pursue intrinsic educational values rather than external reputation.	SWD3	0.764
79	Educational administrators should have unmotivated leadership and focus on collective interests.	SWD4	0.829
80	Schools should aim at cultivating students' inner qualities rather than simply pursuing grades.	SWD5	0.761
81	Educational administrators should avoid excessive utilitarian thinking.	SWD6	0.804
82	School management should focus on cultivating students' self-cognition and inner motivation.	SWD7	0.797
83	Education management should be based on a sense of responsibility rather than individual desire.	SWD8	0.73
84	School administrators should find higher educational value and significance in non-desire.	SWD9	0.901
85	Educational administrators should improve the quality of education through selfless service.	SWD10	0.839
86	Educational administrators should focus on internal growth rather than external evaluation.	SWD11	0.837
87	School administrators should avoid excessive material pursuits and focus on spiritual pursuits.	SWD12	0.853
88	In education management, more emphasis should be placed on cultivating students' inner strength rather than external rewards.	SWD13	0.849
89	Education administrators should avoid excessive desire for positions and focus on education itself.	SWD14	0.788
90	Schools should emphasize internal motivation and reduce external motivation in teaching.	SWD15	0.753
91	Educational management should be flexible to adapt to social, economic and technological changes.	AN1	0.753
92	Schools should adjust the teaching content according to the interests and needs of students.	AN2	0.762
93	Educational administrators should make adjustments according to the situation of educational resources in different regions.	AN3	0.844
94	Education management should be personalized according to the different school environment.	AN4	0.81
95	Schools should adapt to students' growth trajectories and provide support accordingly.	AN5	0.844
96	Educational administrators should be sensitive to changes in the external environment and make adjustments quickly.	AN6	0.792
97	Education administrators should incorporate local characteristics into education policies.	AN7	0.768



Item	Current Status of Education Management	label	Factor loading
98	Educational management should be able to adapt to the educational challenges brought about by globalization.	AN8	0.856
99	Schools should provide customized learning styles according to students' personality characteristics.	AN9	0.781
100	Educational administrators should adjust management strategies according to the specific conditions of schools.	AN10	0.817
101	Educational management should find the appropriate path in different cultural backgrounds.	AN11	0.799
102	Educational management should respond flexibly without violating the educational objectives.	AN12	0.816
103	Schools should adjust their learning arrangements according to the seasons and social rhythms.	AN13	0.886
104	Educational management should keep a keen ability to respond to social changes.	AN14	0.657
105	Educational administrators should constantly adapt and adjust to the changes of educational environment.	AN15	0.769

CSEM (Core Concept of Educational Management), GI (Application of Taoist Governance Thought), TFN (Taoist Natural Law), YYB (Yin-Yang Balance), USOH (Using Softness to Overcome Hardness), SWD (Power without Desire), AN (Adaptation to Nature)

Through the factor loading analysis results in Table 4.5, it can be concluded that the seven dimensions set in this paper performed well in factor analysis. Each dimension contains 15 scale questions, and these questions show high factor loading coefficients on the corresponding factors. Specifically, the factor loading coefficient of each question exceeds 0.6 on the dimension to which it belongs, which shows that these questions can well reflect the characteristics of the dimension and have strong explanatory power in the factors of this dimension. This result verifies that the design of each dimension is effective and each question can accurately measure the concepts related to it.

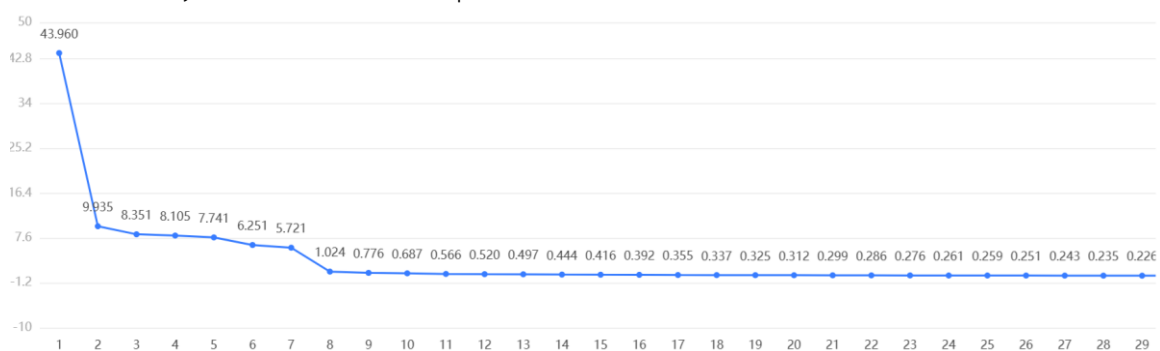


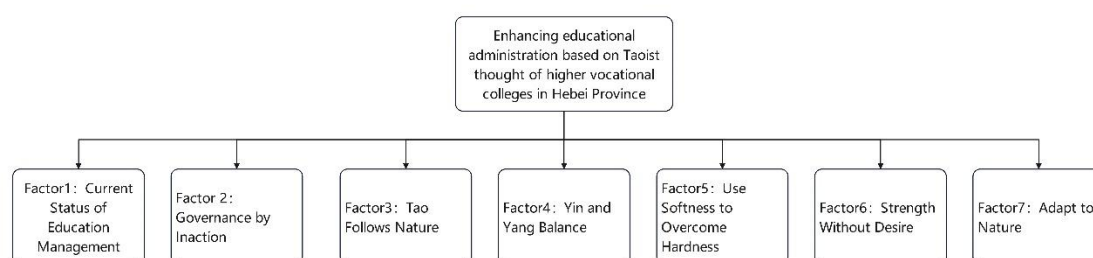
Figure 1 Scree plot

In the scree plot shown in Figure 4.1, the slope between the 7th and 8th factors becomes less steep, indicating that the amount of information explained by the subsequent 8th factor decreases significantly. This suggests that the first 7 factors can cover most of the information, thus selecting 7 factors is appropriate.

Table 4 Factors Element Analysis

Factors	Item	Quantity	Factor loading
1	CSEM1~15	15	0.766~0.878
2	GI1~15	15	0.73~0.848
3	TFN1~15	15	0.687~0.891
4	YYB1~15	15	0.786~0.924
5	USOH1~15	15	0.773~0.903
6	SWD1~15	15	0.73~0.901
7	AN1~15	15	0.657~0.886
Total		105	

From the factor loading analysis results provided in the table, it can be seen that the factor loading coefficients of the seven factors designed in this paper (CSEM, GI, TFN, YYB, USOH, SWD, AN) on the scale questions perform well. Specifically, these factor loading coefficients are between 0.657 and 0.924, reflecting that the 15 questions contained in each factor in the scale have strong explanatory power and can effectively measure the characteristics of each dimension. This result shows that the scale questions can accurately reflect the influence of Taoist thought on different dimensions in educational management, and provide a reliable data basis for subsequent factor analysis and model construction.

**Figure 2** EFA model results

3. Results for analyzing the model of Enhancing educational administration based on Taoist thought of higher vocational colleges in Hebei Province

This study used the ethnographic future research content analysis technique developed by Professor Robert B. Terkester, which is a widely used method in anthropological research. It aims to present reality in a way that is consistent with the overall situation by classifying, describing, analyzing, interpreting and diagnosing images and desires according to individual needs. The content analysis method is flexible and can adjust the interview outline according to the actual situation during the research process, adding or deleting the preliminarily set topics.

Table 5 Factor 1: Current Status of Educational administration

Key Informant Names	Factor 1: Current Status of Educational administration	Summarize
Key informant 1	Describes educational administration as overly structured, with a strong focus on efficiency and transparency. However, it lacks flexibility and is slow to adapt to change, leading to a failure in addressing the unique needs of students.	The current system is rigid, efficient-focused, and does not prioritize student individuality.
Key informant 2	Emphasizes that educational administration is generally effective but struggles with balancing quality improvements with the rigid application of policies. The lack of flexibility impedes responsiveness to new educational needs.	Educational administration is effective in maintaining stability but insufficiently adaptive to new challenges.
Key informant 3	Points out that the management model is still largely traditional, failing to incorporate individual student needs or provide sufficient space for teacher involvement. However, there is some focus on improving quality and integrating technology.	Traditional management, limited flexibility, but some positive changes are being made, especially in tech adoption.

Table 6 Factor 2: Governance by Inaction

Key Informant Names	Factor2: Governance by Inaction	Summarize
Key informant 1	Believes that reduced intervention by educational administrators has led to greater autonomy for teachers, fostering creativity and innovation. However, there are concerns about a lack of accountability.	Reduced intervention promotes autonomy but also leads to some lack of responsibility and clarity.
Key informant 2	Supports the concept of non-action, where administrators trust teachers and allow self-regulation, but acknowledges that this approach can sometimes lead to inefficiency and uncoordinated efforts.	Non-action encourages trust and innovation, but may lack coordination and efficiency.
Key informant 3	Notes that less interference from administrators has generally been beneficial for fostering innovation and independence. However, this can also lead to challenges when addressing complex issues.	Non-action governance is beneficial but struggles when dealing with complex or urgent issues.

Table 7 Factor3: Tao Follows Nature

Key Informant Names	Factor3: Tao Follows Nature	Summarize
Key informant 1	Advocates for a flexible approach in educational administration, where decisions align with natural growth, respecting both school culture and student development.	Educational administration should be adaptable and aligned with natural growth patterns and the needs of the students.
Key informant 2	Stresses the importance of respecting the natural development of both students and the school environment, encouraging policies that are flexible and context-driven.	Management should prioritize natural development over rigid planning, allowing for contextual flexibility.
Key informant 3	Suggests that educational management should evolve organically, with strategies that are reactive to the needs of both students and the broader educational environment.	A responsive and organic approach to educational administration is essential for aligning with evolving student needs.

Table 8 Factor4: Yin and Yang Balance

Key Informant Names	Factor4: Yin and Yang Balance	Summarize
Key informant 1	Advocates for finding a balance between strictness and flexibility in education, particularly in managing workloads and ensuring mental health.	A balanced approach to management is essential, balancing strictness with flexibility and mental health awareness.
Key informant 2	Emphasizes the importance of balancing traditional values with innovative practices and fostering both student achievements and their well-being.	Balancing tradition and innovation is key to promoting a holistic educational experience.
Key informant 3	Believes that educational administration should create a harmony between authority and democracy, ensuring both stability and adaptability.	A balance between authority and democracy is critical for maintaining stability and fostering innovation.

Table 9 Factor5: Use Softness to Overcome Hardness

Key Informant Names	Factor5: Use Softness to Overcome Hardness	Summarize
Key informant 1	Emphasizes the need for a leadership style that focuses on encouragement and gradual change, avoiding heavy-handed measures.	Leadership should be gentle and supportive, guiding changes through encouragement rather than coercion.

Key Informant Names	Factor5: Use Softness to Overcome Hardness	Summarize
Key informant 2	Believes that educational administrators should prioritize flexibility and empathy, creating a more inclusive and non-confrontational environment.	Soft leadership fosters cooperation and empathy, reducing conflict and fostering a positive environment.
Key informant 3	Suggests that the educational management approach should focus on minimizing pressure and respecting the needs of both teachers and students.	Educational administration should prioritize flexibility and respect, fostering a more harmonious atmosphere.

Table 10 Factor6: Strength Without Desire

Key Informant Names	Factor6: Strength Without Desire	Summarize
Key informant 1	Argues that educational administrators should focus on intrinsic values, avoiding materialistic or external motivations, and cultivating a sense of responsibility.	Administrators should focus on internal values and foster selfless leadership to achieve better educational outcomes.
Key informant 2	Advocates for a leadership style that values internal growth over external recognition, emphasizing the importance of ethical leadership.	A focus on ethical leadership and internal values promotes sustainable educational development.
Key informant 3	Notes that educational administration should encourage spiritual and personal growth over external achievement, aligning with Taoist principles of non-desire.	Education should foster internal motivation, reducing the emphasis on material rewards or external success.

Table 11 Factor7: Adapt to Nature

Key Informant Names	Factor7: Adapt to Nature	Summarize
Key informant 1	Highlights the importance of adapting educational strategies to local and regional contexts, including considering external challenges like globalization.	Educational administration must be flexible and context-sensitive, responding to both local and global challenges.
Key informant 2	Emphasizes the need for tailored educational practices that align with the local environment, respecting regional differences and student needs.	Tailored education strategies that consider local and regional characteristics are key to success.

Key Informant Names	Factor7: Adapt to Nature	Summarize
Key informant 3	Argues that education must be adaptable to various conditions, including technological advancements and evolving social demands.	Educational administration must stay flexible and responsive to rapid changes in society and technology.

4. Summy

This study systematically reveals the impact mechanism of Taoist thought on higher vocational education management through a mixed method of quantitative analysis and qualitative research. The research findings not only verify the theoretical hypothesis, but also propose an operational improvement path: on the basis of maintaining the existing management effectiveness, focus on enhancing the adaptability (TFN), balance (YYB) and humanistic care (USOH) of the system, thereby promoting the overall improvement of the quality of education management in higher vocational colleges in Hebei Province. This study provides an important reference for the application of traditional culture in modern education management.

The research results related to goal 1 show that the education management level of higher vocational colleges in Hebei Province presents the characteristics of "efficiency first, lack of flexibility". Through factor analysis of 7 dimensions and semi-structured interviews, it is found that the current education management system performs well in terms of institutional transparency (CSEM2, 0.829) and daily operation (CSEM1, 0.791), but there are obvious rigid management characteristics, which are reflected in the rigid management model (CSEM3, 0.834) and insufficient attention to individual differences of students (CSEM4, 0.817). The interview data further verified this finding. The interviewees generally reflected that "the decision-making process is too structured" (Key Informant 1), indicating that traditional management thinking still dominates and the flexible management concept in Taoist thought has not been fully applied.

The research results related to Objective 2 show that the impact of Taoist thought on educational management can be systematically explained through 7 key dimensions. The 7 factors extracted by exploratory factor analysis cumulatively explained 85.78% of the variance, among which the "yin and yang balance" (YYB) and "using softness to overcome hardness" (USOH) dimensions performed particularly well (YYB6 loading 0.929, USOH13 loading 0.903). Semi-structured interviews revealed the specific manifestations of these dimensions in actual management, such as "seeking a balance between teacher workload and personal development" (Key Informant 2) and "using non-confrontational methods to resolve conflicts" (Key Informant 3). The mutual confirmation of quantitative and qualitative data constructed a complete theoretical framework for the impact of Taoist thought on educational management.

The research results related to Goal 3 show that based on empirical analysis, a guiding ideology for education management with "dynamic balance" as the core can be proposed. The study shows that the dimensions of "following nature" (TFN) and "adapting to nature" (AN) have significant predictive power (TFN2 load 0.891, AN8 load 0.856), and managers in the interviews also emphasized the importance of "providing support according to students' growth trajectory" (Key Informant 3). This provides a theoretical basis for building a management model of "combining rigidity and flexibility", which not only retains the institutional advantages, but also incorporates the flexible wisdom of Taoist "rule by inaction" (GI), forming an education management paradigm with the characteristics of Hebei higher vocational colleges.

Discussion

This study reveals the application of Taoist thought in educational administration through exploratory factor analysis and semi-structured interviews on the quality management of graduates in higher vocational colleges in Hebei Province and explores its impact on the educational administration model of higher vocational colleges in Hebei Province from seven key factors.

1. Core concepts of educational administration

From the current situation of education management in higher vocational colleges and universities in Hebei Province, the current management system is highly structured, emphasizing efficiency and transparency, but suffering from a lack of flexibility. Taoist thought emphasizes "ruling by doing nothing", i.e., achieving management goals through natural, non-coercive means. In modern education management, overly rigid structures and regulations may neglect the needs of individual students, whereas "ruling by doing nothing" as advocated by Taoist thinking encourages a more flexible and inclusive approach to management, which helps administrators to provide more humane support and care while maintaining the quality of education.

2. Application of Taoist governance thought

The application of Taoist educational thinking in the management of higher education in Hebei Province is manifested in a management style that reduces intervention and respects teachers' autonomy. Reflections from the interviews suggest that the concept of "non-intervention" in educational management promotes teachers' innovation and autonomy, but also brings about a lack of responsibility and coordination. Taoist thought advocates "doing nothing", but in educational management practice, managers need to balance the relationship between "release" and "control" to ensure innovation without losing control and guidance.

3. The natural law of Taoist thought

The "natural law of Taoist thought" emphasizes that educational administration should conform to the natural development of students. Managers of higher vocational colleges in Hebei Province need to flexibly adjust management strategies according to the actual situation

of the school and the growth needs of students. The interviews reflect that the overly rigid educational administration model often ignores the changes in students' individual needs, while the "Tao follows nature" in Taoist thought provides a more flexible and responsive management idea. The application of this idea helps educational administration to look at the development of schools and students from a longer-term perspective, making the education system more humane and adaptable.

4. Yin-Yang Balance

The concept of "Yin-Yang Balance" in Taoist thought is particularly important in educational administration. Managers of higher vocational colleges in Hebei Province recognize that in teaching management, a balance should be maintained between strictness and flexibility, tradition and innovation. The "Yin-Yang Balance" of educational administration is not only related to the improvement of academic performance, but also involves students' mental health and teachers' work stress management. The interview results show that managers need to pay attention to the physical and mental health of students and teachers while ensuring the quality of education, so as to create a harmonious educational environment.

5. Overcoming Hardness with Softness

"Overcoming Hardness with Softness" is a management strategy emphasized in Taoist thought, that is, achieving goals through gentle and non-coercive means. In the management of higher vocational education in Hebei Province, the leadership style emphasizes flexibility, empathy and gradual change, and avoids taking overly tough measures. During the interviews, many interviewees emphasized that flexible leadership can reduce conflicts and promote the enthusiasm of teachers and students. Educational managers can help build a more harmonious educational environment by encouraging, supporting and creating an open communication atmosphere.

6. Governing without desire

The Taoist concept of "governing without desire" advocates that leaders should abandon external material desires and focus on the inner state of desirelessness to achieve high fairness and effectiveness in educational management. In the educational management of higher vocational colleges in Hebei Province, the interviewees generally believed that educational managers should focus on internal responsibility and moral leadership rather than excessive pursuit of external rewards or material benefits. Through the cultivation of intrinsic values and spiritual leadership, managers can stimulate the intrinsic motivation of teachers and students, thereby improving the quality of education.

7. Follow nature

Finally, as one of the core concepts of Taoist thought, following nature also has a profound impact on the educational administration of higher vocational colleges. Higher vocational education managers in Hebei Province should flexibly respond to and adjust education strategies according to different educational environments, student needs and social development trends. Especially in the context of globalization, technological

development and changes in social needs, educational administration must have strong adaptability. This requires education managers to not only pay attention to the growth of students, but also to grasp the changes in the external environment in a timely manner and formulate forward-looking and targeted education policies.

8. Summary

The results related to goal 1 show that the educational management of higher vocational colleges in Hebei Province has problems of rigid structure and lack of flexibility, while the Taoist concepts of "ruling by inaction" and "following the laws of nature" can effectively make up for this deficiency. This may be because traditional management overemphasizes efficiency and transparency and ignores the personalized needs of students and teachers (supported by interview results). The flexible management advocated by Taoist thought provides a more humane support method for educational managers, which helps to improve the inclusiveness of management while maintaining the quality of education.

The results related to goal 2 show that the application of Taoist thought in the educational management of higher vocational colleges in Hebei Province is mainly reflected in reducing intervention, respecting teachers' autonomy, and balancing the relationship between "releasing" and "control". This may be because excessive intervention will inhibit teachers' innovation, while complete laissez-faire may lead to a lack of responsibility (supported by exploratory factor analysis). Through strategies such as "yin and yang balance" and "using softness to overcome hardness", managers can find a balance between strictness and flexibility, tradition and innovation, thereby optimizing the educational management model.

The results related to Objective 3 show that Taoist thought provides guiding ideas such as "following nature" and "governing without desire" for the development of educational management in higher vocational colleges in Hebei Province. This may be because globalization and changes in social needs require educational management to be more adaptable and forward-looking (supported by semi-structured interviews). Taoist thought emphasizes that managers should focus on intrinsic values and spiritual leadership, improve the quality of education by stimulating the intrinsic motivation of teachers and students, and flexibly adjust policies according to changes in the external environment.

In summary, this study reveals the practical application of Taoist thought in educational management in higher vocational colleges in Hebei Province and its positive impact through exploratory factor analysis and interviews. Taoist thought not only provides theoretical support for solving the rigid problems in current management, but also points out the direction for the development of future educational management, that is, to build a more harmonious and efficient educational environment through flexible, balanced and natural management strategies.

Conclusion

1. Summary of the Study

The purpose of this study is: 1) to explore the influence of Taoist thought on the management of higher vocational education in Hebei Province; 2) to conduct an exploratory factor analysis on the management of higher vocational education in Hebei Province; 3) to propose a higher vocational educational administration model based on Taoist thought. This study was conducted through the following steps:

1.1 Review of concepts, theories and related studies

This study first deeply reviews Taoist thought and its application in educational administration. Through literature analysis, combined with the intersection of Taoist thought and modern higher vocational educational administration, the research framework was determined. On this basis, through expert interviews and existing literature analysis, the main factors affecting higher vocational educational administration were identified. The results show that this paper mainly sets up 7 dimensions to measure Taoist thought, and each dimension contains 15 questions for measurement.

1.2 Develop research tools

Based on the variables determined in step 1, the researchers sorted and screened out 105 relevant variables and constructed Likert scale questions. These questions are designed to measure the influence of Taoist thought on higher vocational educational administration. After the guidance of consultants and five statistical experts, the content validity (Item Objective Congruence, LOC) of each question was greater than 0.6. Subsequently, the reliability test was conducted through the questionnaire, and the Cronbach alpha coefficient of the final questionnaire was 0.986, indicating that the questionnaire had high reliability.

1.3 Data Collection

The study collected data from a sample group of higher vocational colleges in Hebei Province through questionnaires. From 2024 to 2025, the study covered 56 higher vocational colleges and conducted the first round of external quality assessment through Questionnaire Star. The respondents included 140 educational administrators and 361 teachers, and a total of 501 valid questionnaires were received from 56 schools.

1.4 Data Analysis

The data analysis first examined the personal situation of the respondents and their understanding of Taoist thought in higher vocational educational administration, and descriptive statistics were performed using mean (\bar{X}) and standard deviation (S.D.). Subsequently, exploratory factor analysis (EFA) and principal component analysis (PCA) were used to evaluate the influencing factors of Taoist thought in higher vocational educational administration. As a result, 7 effective factors were identified, and the relevant higher vocational educational administration model was further developed.

1.5 Model development and refinement

Combining the analysis results of step 4, the researchers proposed a higher vocational educational administration model based on Taoist thought and invited 5 educational administration experts to evaluate the model. The expert evaluation was mainly conducted from the aspects of accuracy, appropriateness, feasibility and effectiveness, and finally confirmed the applicability of the model. Through data aggregation and content analysis, a model of educational administration suitable for higher vocational colleges in Hebei Province was successfully developed and a complete research report was formed.

The sample of this study included 56 higher vocational colleges from Hebei Province. The respondents were managers and teachers, with a sample size of 501. The research tools included (1) scales; (2) questionnaires; and (3) semi-structured interviews. The statistical methods used for data analysis were (1) frequency; (2) percentage; (3) mean; (4) standard deviation; (5) factor analysis and (6) content analysis.

2. Results of Demographic Data of the Respondents

The sample data of this study shows that women account for 60.88% of the educational administration group in higher vocational colleges in Hebei Province, which is significantly higher than men, reflecting the dominant position of women in this field. In terms of age, the largest number of respondents are aged 31 to 35, accounting for 39.12%, while the younger group of 25 and below is relatively small, accounting for only 0.998%. In terms of education, 62.28% of the respondents have a master's degree, indicating that the group has a high overall education and a strong professional background. In terms of work experience, 39.12% of the respondents have 3 to 5 years of experience, indicating that most education managers and teachers are relatively young and have certain practical experience.

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