

INNOVATIVE LEADERSHIP OF ADMINISTRATORS IN HENAN MECHANICAL AND ELECTRICAL VOCATIONAL COLLEGE

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Abstract: The objectives of this research were: (1) to study the level of innovative leadership of administrators in Henan Mechanical and Electrical Vocational College;(2) to compare the innovative leadership of administrators in Henan Mechanical and Electrical Vocational College, as teachers assessment, classified by education level and working experience.

The research methodology was a survey research. The population scope of 429 teachers in Henan Mechanical and Electrical Vocational College. The sample number of 214 teachers in Henan Vocational College of Mechanical and Electrical Engineering. The sample size was determined by Krejcie and Morgan's table and obtained by simple random sampling technique. The instrument used for data collection was a five-point rating scale questionnaire. The statistics used for data analysis were frequency, percentage, mean, Standard Deviation, and t-test.

Research Major findings were: (1) Innovative leadership of administrators in Henan Mechanical and Electrical Vocational College, overall and aspects were at high level; (2) comparison of the innovative leadership of administrators in Henan Mechanical and Electrical Vocational College, as teachers assessment, classified by education level and working experience, overall and aspects were different with statistics significant at .05 level.

Keywords: Innovative leadership, Administrators, Henan Mechanical and Electrical Vocational College

Background and significance of research

The rapid development of society and technology has presented higher education with unprecedented opportunities and challenges. As the key higher vocational college focused on in this study, Henan Vocational College of Mechanical and Electrical Engineering needs to align with industry demands, adjust its professional settings and talent training programs. This requires administrators to possess keen market insight and innovative decision-making capabilities, as well as innovate educational concepts and management models, so as to provide students with a better environment and support for innovation and entrepreneurship.

This study enriches university administration theories (especially for industry-specific vocational colleges) by exploring innovative leadership of managers at Henan Vocational College of Mechanical and Electrical Engineering. It offers new perspectives on the mechanism and influencing factors of innovative leadership in university management, expands leadership research in vocational colleges, and provides practical insights for leadership theory development—echoing Lewin et al. (1939) on innovative leadership's role in resource integration, team building, and stakeholder coordination to drive organizational innovation. It helps the college's managers enhance innovative leadership, optimize management, foster an innovative culture, and improve teaching, research, and talent training. It also provides references for similar institutions, promoting educational innovation and better service to economic and social development.

Research Objectives: 1. To study the level of innovative leadership of administrators in Henan Mechanical and Electrical Vocational College. 2. To compare the innovative leadership of administrators in Henan Mechanical and Electrical Vocational College, as teachers' assessment, classified by education level and working experience.

Research Hypothesis: 1. Teachers had different education level assessed the innovative leadership of administrators in Henan Mechanical and Electrical Vocational College with different level. 2. Teachers had different working experience assessed the innovative leadership of administrators in Henan Mechanical and Electrical Vocational College with different level.

Research Scope: Content Scope

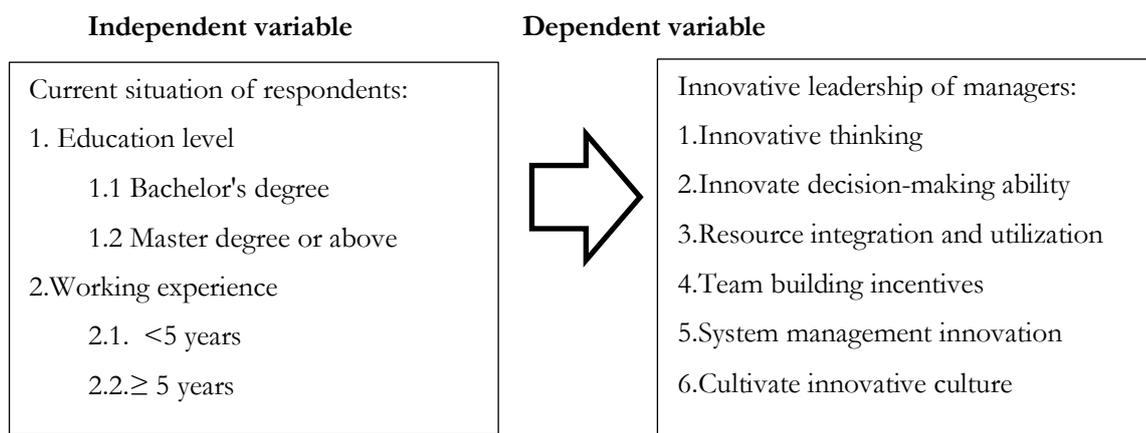
1. Independent variable: teachers’ assessment classified by education level.and working experience.
 2. Dependent variable: innovative leadership of administrators in Henan Mechanical and Electrical Vocational College.This research used innovative leadership style theory of Lewin & et. al. (1939) in six aspects:

- 1) Innovative thinking,
- 2) Decision-making ability,
- 3) Resource integration and utilization,
- 4) Team building incentive,
- 5) System innovation and management,
- 6) Cultivation of innovative culture

Population and Sample Scope

Population scope: 429 teachers in Henan Mechanical and Electrical Vocational College.
 Sample number: 214 teachers in Henan Mechanical and Electrical Vocational College.

Research Framework: The research framework was shown in figure 1



Expected Benefits

- 1. Enhance the understanding of innovative leadership among administrators of Henan Mechanical and Electrical Vocational College
- 2. Provide valuable strategies for a comprehensive analysis of all personnel as classification according to their working years, work experience and educational background in order to provide the guideline for targeted leadership management advice.

Research Design

This research was a survey design. The research procedure consisted of 4 steps.

Population and Sample

There are 429 teachers in Henan Vocational College of Mechanical and Electrical Engineering. There are 214 teachers in Henan Vocational College of Mechanical and Electrical Engineering. The sample size was determined

by the Krejcie & Morgan table (1967) and obtained by simple random sampling.

Research Instrument

The instruments used in this research were a 5-point rating scale questionnaire. The researcher has divided the instruments to 3 parts as Part 1: The questionnaire about the general information of the respondents is in the form of a checklist survey asking about work educational and experience level, Part 2: The leadership behavior questionnaire of Henan Vocational College of Mechanical and Electrical Engineering includes the six components.

Development Instruments

So that the research tools are efficient and consistent with the conceptual framework of the research, the researcher has created an instrument for data collection as follows: (1) Study the details of how to create from the concept. Theoretical and research papers related to the innovative leadership of leadership school administrators. (2) Study documents, rules, forms, and methods for constructing a questionnaire-type instrument. Conceptual valuation of Likert as input to build a scaled questionnaire with a 5-point rating scale. (3) Take the questionnaire that was created successfully. To propose advisors to make sure the accuracy is more appropriate. (4) The revised questionnaire was presented to 3 education experts. Consider checking the content validity (Content Validity) using the consistency index between the questions in the questionnaire with the definition of terms using the criteria for the index of concordance by scoring as follows: +1 Make sure the question is consistent with the definition of the given term. 0 Not sure if the question matches the definition of the term given. -1 The question does not correspond to the given definition. (5) Record expert opinions for each item. Then combine the views of the three experts individually and replace them with the IOC formula. If the questionnaire is between 0.67-1.00, it is considered that the quality of the instruments can be achieved. It can be used to store data, but if the consistency index is less than 0.60, the question must be revised to make it more complete. (6) The instrument was try-out on a non-sample population of 30 people to determine the reliability using Cronbrach's alpha coefficient formula (Cronbach, 1990) using a packaged program which must have a level of .70 or higher, the confidence was at 0.89. (7) Editable queries are used to create complete instrument, used in research to collect data from sample.

Data Collections The researcher has conducted data collection, in the following:

1. for permission to collect data with the sample studies
2. The researcher send the questionnaires to the samples
3. Check the completeness by the Questionnaire Star, and used it to next collect research data.

Data Analysis The data were analyzed by statistical software packages:

1. Analyze data on the general status of respondents using the frequency distribution method, and find the percentage
2. Analyze by mean and standard deviation, and set criteria for interpreting the results as follows: 4.51-5.00 means the highest level of practice, 3.51-4.50 means the high level, 2.51-3.50 means the moderate level of practice, 1.51-2.50 means the low level, and 1.00-1.50 means the lowest level.
3. Analyze comparison of the innovative leadership of administrators in Henan Mechanical and Electrical Vocational College. were shown by using the t-test. (Unareromlert T.2015)

Statistics used to analyze data

This research used statistics as: Frequency, Percentage, Average, Standard deviation, t-test independent.

Data Analysis Results: (1) The research objective of Innovative Leadership of Administrators in Henan Mechanical and Electrical Vocational College.

Table 1. Show the mean, Standard Deviation, and level of the Innovative Leadership of Administrators in Henan Mechanical and Electrical Vocational College: Innovative leadership of managers

(n=214)

| NO. | Innovative leadership of managers | \bar{x} | S.D. | Level |
|--------------|--------------------------------------|-------------|-------------|-------------|
| 1 | Innovative thinking | 3.39 | 0.90 | Medium |
| 2 | Innovate decision-making ability | 3.53 | 0.85 | High |
| 3 | Resource integration and utilization | 3.73 | 0.91 | High |
| 4 | Team building incentivesaa | 3.66 | 0.93 | High |
| 5 | System management innovation | 3.89 | 0.85 | High |
| 6 | Cultivate innovative culture | 3.60 | 0.90 | High |
| Total | | 3.63 | 0.89 | High |

Statistical significance at 0.05 level

Table 1 was found that the Innovative Leadership of Administrators in Henan Mechanical and Electrical Vocational College, overall and aspect was at high level (mean= 3.63). When analyzing each aspect, most of aspects were at high level, except Innovative thinking consciousness aspect was at medium level.

Table 2 : Innovative Leadership of Administrators in Henan Mechanical and Electrical Vocational College, classified by educational level, overall aspect.

(n=214)

| Innovative leadership of managers | Educational level | | | | t | sig |
|--|-------------------|-------------|------------------------|-------------|--------------|-------------|
| | Bachelor's degree | | Master degree or above | | | |
| | \bar{x} | S.D. | \bar{x} | S.D. | | |
| 1.Innovative thinking | 3.28 | 0.89 | 3.50 | 0.91 | -1.54 | 0.12 |
| 2.Innovate decision-making ability | 3.75 | 0.76 | 3.31 | 0.94 | 3.07* | 0.00 |
| 3.Resource integration and utilization | 3.90 | 0.90 | 3.56 | 0.92 | 2.17* | 0.03 |
| 4.Team building incentives | 3.89 | 0.88 | 3.43 | 0.98 | 2.88* | 0.00 |
| 5.System management innovation | 3.87 | 0.73 | 3.91 | 0.97 | -0.25 | 0.80 |
| 6.Cultivate innovative culture | 3.54 | 0.89 | 3.66 | 0.91 | -0.83 | 0.40 |
| Total | 3.70 | 0.84 | 3.56 | 0.94 | 1.03* | 0.30 |

Statistical significance at 0.05 level

Table 2:t-test, Innovative Leadership of Administrators in Henan Mechanical and Electrical Vocational College, according to teachers' assessment, classified by educational level, overall and aspects were different.

Table 3 : Innovative Leadership of Administrators in Henan Mechanical and Electrical Vocational College, classified by work experience level, overall aspect.

(n=214)

| Innovative leadership of managers | Work Experience | | | | t | sig |
|-----------------------------------|-----------------|------|-----------|------|--------|------|
| | < 5 years | | ≥5 years | | | |
| | \bar{x} | S.D. | \bar{x} | S.D. | | |
| 1.Innovative thinking | 3.34 | 0.88 | 3.44 | 0.92 | -0.69* | 0.49 |

| | | | | | | |
|--|-------------|-------------|-------------|-------------|---------------|-------------|
| 2.Innovate decision-making ability | 3.35 | 0.84 | 3.71 | 0.86 | -2.50* | 0.01 |
| 3.Resource integration and utilization | 3.72 | 0.89 | 3.74 | 0.93 | -0.14* | 0.88 |
| 4.Team building incentives | 3.51 | 0.90 | 3.81 | 0.96 | -1.98* | 0.04 |
| 5.System management innovation | 3.66 | 0.82 | 4.12 | 0.88 | -3.27* | 0.00 |
| 6.Cultivate innovative culture | 3.51 | 0.86 | 3.69 | 0.94 | -1.25* | 0.21 |
| Total | 3.51 | 0.86 | 3.75 | 0.92 | -1.68* | 0.09 |

Statistical significance at 0.05 level

Table 3: t-test, Innovative Leadership of Administrators in Henan Mechanical and Electrical Vocational College, according to teachers' assessment, classified by work experience, overall and aspects were different.

Discussion

Based on the research objectives, the discussion will be presented as follows:

Innovative thinking consciousness was found that Innovative Leadership of Administrators in Henan Mechanical and Electrical Vocational College at a medium level. The study found that the administrators of Henan Mechanical and Electrical Vocational Technology College have a relatively high awareness of innovative thinking and innovative ability, and their level of innovative leadership is relatively high. This indicates result was consistent with the comprehensive analysis by Zhou and George (2003) who found that the primary feature of innovative leadership was creative thinking. Zhou and George (2003) emphasized that innovation leaders have more powerful conceptualization and divergent thinking to identify innovation opportunities from complex information. This thinking characteristic enables leaders to break through the inherent patterns and propose breakthrough solutions. The impetus of change is another core feature of innovative leadership. Similarly, the innovative thinking demonstrated by the administrators of Henan Mechanical and Electrical Vocational College highlights their ability to adapt to changing educational requirements and contribute to the overall success of the school.

Innovate decision-making ability was found, the level of Innovative Leadership of Administrators in Henan Mechanical and Electrical Vocational College at a high level. The high level of innovative leadership among administrators at Henan Mechanical and Electrical Vocational College, coupled with the identified innovative decision-making ability, further aligns with the insights from De Rue and Wellman's (2009) research. It can be inferred that these administrators have formed a positive cycle of continuous learning and practical application in the daily work.

Team building incentives was found, the level of Innovative Leadership of Administrators in Henan Mechanical and Electrical Vocational College at a high level. The study found that this result is consistent with the comprehensive analysis by Zhou and George (2003) shows that innovation leaders enhance employees' confidence and motivation for innovation by providing resource support, establishing incentive mechanisms and creating a safe environment. This consistency further confirms that these administrators have effectively adopted multiple strategies to enhance the innovation confidence and motivation of faculty and staff, thereby forming a strong driving force for the college's innovative development.

Resource integration and utilization was found, the level of Innovative Leadership of Administrators in Henan Mechanical and Electrical Vocational College at a high level. The study found that this result is consistent with the comprehensive analysis by Tush-man and O'Reilly (1996) believe that innovative leadership is a multi-dimensional conceptual system. And defines it as the ability to drive change by creatively integrating resources and energizing the organization.

System management innovation was found, the level of Innovative Leadership of Administrators in Henan Mechanical and Electrical Vocational College at a high level. The study found that this result is consistent with the

comprehensive analysis by Birkinshaw et al. (2008) proposed that at the organizational level, innovation leadership is reflected in the construction of strategic innovation ability. This further proves that the administrators have effectively constructed strategic innovation capabilities at the organizational level, and have made remarkable achievements in establishing a flexible organizational structure, fostering an innovation culture, and ensuring the sustainability of innovation activities through institutional design.

Cultivate innovative culture was found, the level of Innovative Leadership of Administrators in Henan Mechanical and Electrical Vocational College at a high level. The study found that this result is consistent with the comprehensive analysis by Amabile and Khairi (2008) emphasize that innovation leaders can stimulate the innovation potential of team members by creating a supportive environment and fostering a culture of innovation. This indicates that the college's administrators have taken targeted measures to make the innovative culture permeate every aspect of the campus, becoming a powerful driving force for the development of teachers and students.

Recommendations

1. Conduct multi-dimensional comparative studies: Compare the innovative performance of administrative staff with different educational backgrounds, analyze the laws of ability changes among those with different working years, and make cross-college comparisons on innovation differences and paths to form distinctive features, so as to provide a multi-faceted reference for relevant personnel.
2. Conduct in-depth analysis in combination with organizational context: Study the impact of school culture on the exertion of administrative staff's innovative leadership, analyze the mechanism of organizational structure in terms of information acquisition and decision-making efficiency, focus on the interactive relationship between strategic planning and innovative leadership, and construct a dynamic development model.
3. Explore intervention strategies to improve innovative leadership: Design personalized training for administrative staff with different backgrounds, establish an incentive mechanism linked to innovative achievements while paying attention to differences in intrinsic incentives, and study the optimal combination mode of administrative teams to enhance overall innovation capability.

Proposals for next research

1. Adopt mixed research methods, combining quantitative and qualitative research. Collect data through long-term tracking, paired with interviews of typical cases, to explore the internal and external mechanisms behind changes in innovative leadership.
2. Refine research variables and examine the moderating effect of administrative staff's personality traits, professional backgrounds, etc., on the relationship between education, work experience, and innovative leadership.
3. Strengthen research on the application of results. Apply research-based improvement strategies in schools of different regions and levels, summarize adaptation experiences, and form targeted application guidelines for specific regions and types of schools.
4. Pay attention to the impact of emerging technologies. Study the role of digital transformation on administrative staff's innovative leadership, analyze how different background staff adapt to and integrate emerging technologies, and explore related differences.

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