Exploring the Impact of Deans' Transformational Leadership on Teaching Innovation among University Lecturers in Hebei, China

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ABSTRACT

This research aims to investigate the relationship between deans' transformational leadership and teaching innovation among lecturers in universities located in Hebei, China. The theoretical framework of this study is the transformational leadership theory of James MacGregor Burns (1978) and expanded by Bernard Bass. The research is carried out from four dimensions. This study employed a simple random sampling method. The researchers conducted a questionnaire survey of full-time lecturers at universities in Hebei Province. SPSS statistical software was used to analyze 353 valid questionnaires. The study found that participants perceive deans as having high levels of transformational leadership practices. The Pearson correlation analysis shows that there is a significant positive correlation between the practice level of transformational leadership of deans and the teaching innovation level of lecturers. The ultimate goal of this study is to enable lecturers to make continuous teaching innovations under the guidance of the dean's transformational leadership, so as to improve classroom efficiency.

Keywords: Leadership, Teaching Innovation, Transformational Leadership, education administration, higher education administration

1. Introduction

Introduction

In the current era of innovation, both nations and individuals face growing challenges and global competition. The ability of younger generations to adapt to the demands of rapid social and technological change is closely tied to the quality of education they receive. Within higher education, lecturers play a vital role not only in transmitting knowledge but also in fostering creativity, leadership, and cultural advancement. Their teaching innovation directly influences students' learning outcomes, institutional quality, and national competitiveness. However, lecturers' innovative teaching practices are not determined by individual effort alone. Research indicates that leadership style and organizational environment also play crucial roles in shaping teaching innovation (Zainal & Mohd Matore, 2021). According to Binnewies and Gromer (2012), university lecturers' innovative behaviors are positively influenced by their leaders' support, trust, and constructive feedback, which encourage the generation and implementation of new ideas. Similarly, Bellibaş, Kılınç, and Polatcan (2021) emphasized that transformational leadership is a key driver of educational reform and lecturer quality improvement. As noted by Amtu, Makulua, Matital, and Pattiruhu (2020), the interaction between leadership and teaching innovation is vital to enhancing teaching effectiveness and institutional growth. In light of the above, this study seeks to examine the relationship between deans' transformational leadership and lecturers' teaching innovation in higher education institutions in Hebei Province. Specifically, it aims to identify how deans' leadership practices influence lecturers' innovation in teaching and to provide insights for improving university management and lecturer professional development.

Background of study

According to Amabile (2004), one of the most significant factors influencing subordinates' innovative behavior is the dean's leadership style, as it shapes the organizational climate that can either promote or hinder creativity. In the university context, deans' leadership practices play a vital role in determining the level of teaching innovation among lecturers. Yunus, Abdullah, and Jusoh (2019) found a moderate positive relationship between lecturers' perceptions of deans' leadership styles and their engagement in innovative teaching practices. When deans actively support creative teaching concepts, they help establish an organizational culture that values innovation, encourages critical thinking, and fosters a conducive climate for academic creativity. As strategic planners, resource coordinators, and academic leaders, deans directly influence institutional development. Their ability to design effective strategies, such as applying analytical tools like SWOT analysis, enhances interdisciplinary collaboration and academic quality.

In China, however, educational contexts vary widely across provinces due to differences in population size, economic growth, and teaching standards. While the link between dean transformational leadership and lecturer teaching innovation has been studied in other regions, there is a lack of focused research in Hebei Province, where higher education institutions face distinct challenges and opportunities. Therefore, this study aims to examine the impact of deans' transformational leadership on lecturers' teaching innovation within universities in Hebei Province, China. Specifically, it seeks to identify how leadership behaviors contribute to fostering an innovative academic climate and to provide empirical insights for strengthening leadership practices and teaching innovation in higher education.

Problem statement

Transformational leadership is widely recognized as a powerful driver of innovation in teaching practices (Al Mansoori and Koç, 2019). However, the extent to which deans in higher education institutions demonstrate transformational leadership, particularly in relation to fostering innovative teaching, remains unclear. While substantial research has explored the link between educational leadership and innovation (Al Husseini, Beltagi, and Moizer, 2021), there is a noticeable gap in addressing regional differences that may influence these dynamics. In particular, limited attention has been given to how transformational leadership functions within the unique educational context of Hebei Province, China. Addressing this gap is essential for providing evidence based guidance to local education leaders. Given the evolving demands of higher education and the push for innovative pedagogical approaches, this study aims to examine the impact of deans' transformational leadership on lecturers' teaching innovation in universities across Hebei Province.

Research objective and hypothesis

There has been extensive research on the influence of leadership style on subordinates' innovative behavior. Scholars generally agree that a leader's attitude and behavior are crucial prerequisites for encouraging new ideas, driving organizational transformation, setting innovation goals, and providing members with access to necessary resources to create a sustainable and innovative environment. Previous studies have demonstrated that the leadership style of deans significantly impacts university organizations, influencing not only institutional performance but also lecturers' professional growth, job satisfaction, and overall cohesion within the academic community. Lecturers, as the main implementers of educational goals, play a central role in advancing teaching innovation by developing creative teaching methods and enriching learning content.

Transformational leaders in universities, in particular, can inspire continuous innovation by modeling desired behaviors, promoting reform, and motivating lecturers to adopt creative and experimental teaching approaches. As leadership attitudes and practices are closely linked to institutional innovation and teaching quality, this study aims to determine the relationship between deans' transformational leadership and teaching innovation among lecturers in universities located in Hebei, China. To achieve the objective of this study, the following hypotheses were formulated.

> H1: The dean's transformational leadership is positively correlated with lecturers' teaching innovation.
>
> H1a: There is a significant correlation between the teaching innovation practices of universities lecturers and the dimensions of dean transformational leadership in Hebei, China.

Significance of study

a. Theoretical significance

A review of the existing literature on university leadership styles reveals that most studies have focused on the definitions, characteristics, current status, and development of deans' transformational leadership. By systematically analyzing the theories related to deans'

transformational leadership and drawing on insights from broader leadership theories in management (Lee, 2021), this study seeks to extend the current research, which remains largely limited to the scope of deans' transformational leadership. Through this research, it contributes to the enrichment of university leadership theory.

Most studies focus on the relationship between deans' leadership style and lecturers' organizational commitment, work involvement, and other behaviour. There is a paucity of research on the association between deans' leadership style and lecturers' innovative teaching practices. Therefore, this study also has some expansion and extension for university management style and teaching innovation theory.

b. Practical significance

Through the process of literature review, theoretical framework construction and data investigation and analysis, this study provides evidence of the positive impact of deans' transformational leadership on lecturers' teaching innovation. The findings not only highlight the current characteristics of transformational leadership among deans and the state of teaching innovation in universities, but also deepen the understanding of the critical role that transformational leadership plays in fostering teaching innovation in higher education. Moreover, the study emphasizes the importance for deans to cultivate an organizational climate that encourages innovation, offering practical insights for enhancing lecturers' innovative teaching capabilities.

2. Literature review

Definition and concept of transformational leadership

In his 1978 book On Leadership, leadership specialist James MacGregor Burns popularized the idea of transformational leadership. He defines transformational leadership as "the process by which the leader and his followers enhance each other's morals and motivations." (Burns, 1978, p.20). On this basis, Bass (1985) further deepened the theory of transformational leadership and formally defined the concept of transformational leadership in detail in 1985. He believes that transformational leaders have excellent leadership charisma. To advance employee needs, foster a culture of mutual trust and effective teamwork, and inspire workers to contribute more to the organization's and the group's interests, leaders can use targeted methods of employee motivation. These methods include helping workers independently recognize the significance and value of their work and the sense of responsibility they bear. According to his 1985 book Leadership and Performance Beyond Expectations, such leaders exhibit the following characteristics: Firstly, transformational leaders are representatives of integrity and fairness. Secondly, they can set a clear goal. Thirdly, transformational leaders have high expectations for future development. Fourthly, they can always encourage others. Fifthly, transformational leaders provide support and recognition for employees. Sixth, mobilize people's emotions and provide them with emotional value. Seventh, transformational leaders help people surpass their values. Finally, inspire people to achieve the impossible (Burns, 1985).

Transformational leadership is the ability of leaders to transform or motivate followers towards achieving organizational aims and objectives (Alqatawenh, 2018). This concept has been widely discussed by scholars since its appearance. Based on the existing research,

transformational leadership is considered to be a new leadership style that is multi-faceted and dynamic (Yi, Uddin & Sohel, 2019). It is specifically defined as the leader's transfer of positive values and behavioral concepts to subordinates based on specific situations and their own characteristics and other factors. By influencing employees' own behavior, it can achieve the development purpose of improving enterprise performance.

Dimensions for Transformational Leadership

Burns describes a leader as an individual capable of motivating followers to achieve both their own goals and those of their leaders more effectively. Transformational leadership, according to Burns, involves a leader who makes employees aware of the importance and responsibility of their tasks (Burns, 1978). Such leaders are able to stimulate the higher-level needs of their subordinates or broaden their desires and aspirations. They can inspire subordinates to act in the interests of the team, the organization, and the broader political good, rather than their own personal interests. Initially, Bass identified six dimensions of transformational leadership, but these were later condensed into three key factors. Bass and Avolio (1990) further categorized transformational leadership behaviors into four aspects: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Reza, 2019). Leaders who exhibit these qualities often possess strong values and ideals, enabling them to successfully motivate employees to put aside their personal interests and work collectively towards the larger goals of the team (Gupta & Gupta, 2025; Mbua, 2023).

Bass has been proposing transformational leadership for nearly 40 years. During this period, many scholars have carried out a lot of thinking and discussion on the construction and measurement tools of its dimension. Bass refined it into four dimensions, including charisma, personalized care, leadership charm and intellectual stimulation, and formed the Multifactor Leadership Questionnaire (MLQ) scale widely used by later scholars. This scale involves 24 items in 4 dimensions, and its reliability and validity have been effectively verified in empirical studies. Later, some scholars reclassified transformational leadership into different dimensions.

Theory for Transformational Leadership

The study of transformational leadership hinges on the transformational leadership theory. Transformational leadership theory provides a useful framework to examine how transformational leaders promote lecturers' teaching innovation. This theory, originally proposed by James MacGregor Burns in 1978 and later expanded by Bernard Bass, focuses on how leaders inspire and motivate followers to achieve exceptional outcomes (Deshwal & Ali, 2020). The theory comprises four key components: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Reza, 2019).

Past Research on Transformational Leadership

The study on transformational leadership can be traced back to the 1970s. Downtown (1974) proposed in ‘Rebel Leadership’ that when leaders have a certain leadership style, they can effectively enhance the trust between leaders and employees, improve the psychological state of employees and enhance their work efficiency. But Downtown does not define this leadership style. Later, Burns (1978) put forward the theory of transformational Leadership for the first time in his masterpiece ‘Leadership’ after a series of studies. He defined transformational leadership as a leader who makes employees realize the value of work results, so as to stimulate

the needs of employees at a higher level, constantly improve their work enthusiasm, and guide them to transcend selfish thoughts.

Past Research on Relationship of Variables

Transformational leadership has been widely examined as a key driver of innovation in organizational and educational contexts. Drawing from social learning theory and basic psychological needs theory, Ariyani and Hidayati (2018) investigated how transformational leadership influences employees' innovative behavior. Their study found a strong positive correlation, suggesting that transformational leadership creates favorable conditions for innovation by strengthening organizational systems and supporting employee autonomy and motivation. However, their findings are based on general organizational settings, limiting their direct applicability to educational environments.

In education, Ihsani, Inderawati, and Vianty (2020) studied transformational leadership among principals in private vocational senior high schools in Palembang. They found that the transformational behaviors of school leaders significantly impacted teacher performance. While their research does not directly measure teaching innovation, performance in the classroom serves as a relevant proxy, highlighting how leadership style can shape educators' professional engagement. Still, the study's focus on secondary education restricts its generalizability to the higher education context.

Zuraik and Kelly (2018) extended the discourse by examining the role of transformational leadership at the executive level, specifically CEOs, across 215 U.S.-based organizations. Their research emphasized both direct and indirect effects of CEO leadership on organizational innovation, mediated by the innovation climate. Notably, their findings differentiated between exploitation and exploration, with leadership showing greater influence over exploitation activities. This distinction is valuable, as it reveals that leadership may not equally encourage all types of innovation, a nuance often overlooked in educational leadership literature.

In higher education, Atiku and Anane-Simon (2020) emphasized that transformational leadership is vital for implementing innovative teaching and learning strategies. They argued that sustainable change in academic quality and instructional innovation cannot occur without leadership that actively supports and manages transformation. While conceptually strong, their study lacked empirical depth, relying more on narrative assertions than measurable outcomes.

Meng (2022) offered a robust empirical contribution by surveying 1,022 college instructors to analyze the relationship between deans' transformational leadership and teaching innovation. Using SPSS and AMOS for statistical analysis, the study confirmed that transformational leadership from academic deans significantly enhances lecturers' capacity to adopt innovative teaching methods. Unlike other studies, Meng directly linked leadership style with pedagogical innovation, offering stronger internal validity within the higher education context.

Collectively, these studies affirm that transformational leadership is a critical influence on innovative behavior in both organizational and educational settings. However, much of the literature either generalizes from corporate environments or focuses on secondary education. Few studies, such as Meng's, offer targeted insights into how leadership operates within universities, particularly in regional contexts like Hebei Province. This gap underscores the need for more localized and higher education-specific research to guide policy and leadership development.

Relational Theoretical Framework

Social cognitive theory was first put forward and summarized by Bandura (1971), and has been widely used in many fields such as pedagogy, psychology and management. It is an important theoretical basis for studying individual behavior (Smith, Williams & O'Donnell, 2019). Social cognitive theory holds that neither the internal factor theory of psychological trait theory nor the external factor theory of traditional behaviorism can fully explain individual behavior choice (Alahmad, 2020). On this basis, the study puts forward the core theory of social cognitive theory, ternary interactive determinism.

Bandura's Ternary interaction determinism holds that individual behavior is actually influenced by environment, individual behavior and cognition (Wang, 2021). The three are independent and interact with each other. At the same time, the pairwise relationship between the three is the focus of the research. First of all, cognition and behavior affect each other. Cognition affects behavior choice, and behavior choice also affects individual cognition. Secondly, environment and behavior influence each other. Environment, as the external condition of behavior realization, will affect individual behavior choice. But individuals can also give full play to their own subjective initiative. Dealing with the relationship between oneself and the environment can play a role in adjusting the external environment and make the environment more in line with individual needs. Finally, cognition and environment interact. Individual cognition can be subtly influenced and modified by the environment. The change of the environment will have an impact on the individual's cognition, and the individual can also affect his own behavior through the change of cognition, and then have an impact on the environment.

In the 1980s, Edward Deci and Richard Ryan put forward the theory of self-determination. This theory focuses on intrinsic motivation, emphasizes autonomy, competence, and relatedness in promoting self-motivated behavior (Purwanti & Octavia, 2022). It could be useful in understanding how dean transformational leadership might contribute to lecturers' sense of autonomy and competence, thereby encouraging innovative teaching practices.

Conceptual Framework

Based on the theory of transformational leadership, this study investigates the teaching innovation behavior of lecturers from four dimensions of transformational leadership. Dean Transformational Leadership, based on Burns (1978) and Bass (1985), consists of four dimensions: charisma, vision incentive, intellectual stimulation, and personalized care. Charismatic deans act as role models, vision incentives provide direction and motivation, intellectual stimulation encourages creative thinking, and personalized care fosters individual growth. Together, these dimensions create an environment that nurtures innovation and collaboration.

Lecturer Teaching Innovation includes four components: idea generation, idea promotion, work commitment, and idea realization. These represent the process through which lecturers identify problems, propose and share new ideas, remain committed to implementation, and apply innovative methods in teaching and learning. The framework indicates the relationship between deans' transformational leadership and lecturers' teaching innovation. Transformational leaders inspire and empower lecturers, fostering a supportive academic climate that encourages creativity and continuous improvement. Grounded in Transformational Leadership Theory (Burns, 1978; Bass, 1985) and the Componential Theory of Creativity (Amabile, 1996). The illustration of this study is shown in Figure 1 below.

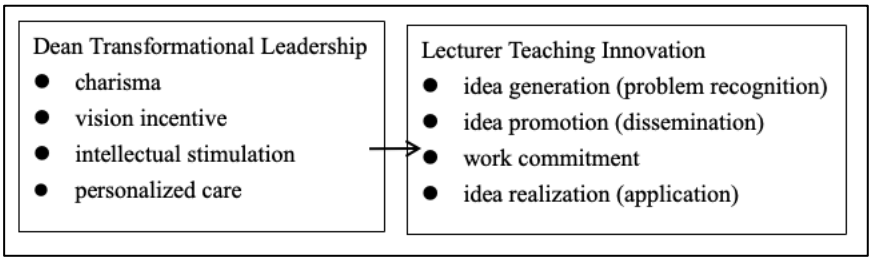

Figure 1: A Conceptual Framework

3. Methodology

This part focuses on study design, sample, instrumentation, validation, reliability, and normality, data collection, pilot studies, and data analysis.

Research Design

Research design is a framework for collecting, measuring, and analyzing raw data (Vidakis, Barianos & Trampas, 2020). This study uses questionnaires to gather data and employs quantitative research methods. In order to fulfill the research objectives outlined in Chapter 1, the questionnaire was revised and refined following a pilot study. A total of 30 respondents were selected from a higher education institution in Hebei to participate in the pilot test. Based on the results, several adjustments were made to the instrument, including the adaptation of items and the removal of ambiguous or redundant words to improve clarity and reliability.

Therefore, this study aims to examine the relationship between deans' transformational leadership and lecturers' teaching innovation in colleges and universities across Hebei Province, China. This chapter also presents the research design, including the population, sampling procedures, research instrument, and statistical methods employed in the study. In this study, the researchers first reviewed and synthesized relevant domestic and international research to establish a theoretical foundation and reference framework. Based on this foundation, they proposed research hypotheses and designed the research plan. The main method used in the research is to obtain data by questionnaire survey, then analyze and test different data by different statistical methods, and discuss and analyze the survey results. Questionnaires are distributed to a large number of subjects at the same time, allowing them to complete the test at their own convenient time. Therefore, this have been given great flexibility for analysis and standardized questions make measurement precise by enforcing uniform definitions on participants.

This study uses descriptive statistical analysis, correlation analysis, regression analysis and other methods to carry out statistical analysis. To determine the relationship between dean transformational leadership and lecturers' teaching innovation.

Research Sampling Technique

This study employed a quantitative sampling strategy to ensure that the selected participants accurately represented the larger population of lecturers in higher education institutions across Hebei Province. The sampling approach was designed to produce reliable and generalizable

findings while minimizing potential bias. The primary purpose of sampling is to obtain a representative subset of the target population, allowing the results to be generalized to the entire group (Mohajan, 2020). Sampling involves selecting a specific group of individuals from a larger population so that the data collected can be used to make valid inferences about the whole. In a sample survey, the information gathered from the respondents serves as the foundation for understanding the overall population's characteristics and behaviors.

According to Krejcie and Morgan (1970), the sample size table indicates that for a population of 3,045 individuals, a minimum of 341 respondents is required to achieve adequate statistical representation. Accordingly, this study targeted at least 341 lecturers from colleges and universities in Hebei Province, China. A simple random sampling method was employed to ensure fairness and representativeness. A total of 61 higher education institutions (HEIs) offering degree programs were included. Within each institution, a random sample of full-time lecturers from various faculties was invited to participate. Respondents were asked to assess both the transformational leadership practices of their deans and their own teaching innovation levels. This method was chosen because it ensures that every individual in the population has an equal and independent chance of selection, thereby reducing sampling bias and enhancing the generalizability of the findings.

Research Instrumentation

Data were collected through a structured questionnaire developed using established instruments from previous studies. Permission to use and adapt the instruments was obtained from the original developers. The questionnaire consisted of three sections: (A) Background of respondents, (B) Transformational leadership, and (C) Teaching innovation.

Part A: Background of Respondents

This section collected demographic information, including gender, years of teaching experience, and academic qualification. These data were used to describe the characteristics of the respondents and explore possible demographic influences on teaching innovation.

Part B: Transformational Leadership Questionnaire

The Transformational Leadership Questionnaire (TLQ) developed by Li Chao-ping and Shi Kan was adapted to measure deans' transformational leadership behaviors. It contained 21 items covering four dimensions: leadership charisma (Items 1–5), vision incentive (Items 6–11), intellectual stimulation (Items 12–17), and personalized care (Items 18–21). Respondents rated each item using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A higher score indicated a greater presence of transformational leadership traits. The TLQ demonstrated satisfactory reliability and validity in previous studies and was found appropriate for the higher education context.

Part C: Teaching Innovation Questionnaire

Teaching innovation was measured using an 18-item scale adapted from previous studies on transformational leadership and teachers' innovative behavior. The instrument assessed four dimensions of teaching innovation: idea generation (Items 1–6), idea promotion (Items 7–12), work commitment (Items 13–18), and idea realization (Items

19–24). Respondents evaluated each statement on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores represented stronger levels of innovative teaching behavior.

Validity and Reliability

Validity refers to the extent to which a test, measurement, or study accurately assesses what it is designed to measure (Sürücü & Maslakci, 2020). From the perspective of content effectiveness, this study covers the dimensions of dean transformational leadership and lecturer teaching innovation. The effectiveness of the tool was obtained through the evaluation of scholars in the field of study. This study will review the relevant literature to ensure that the selected tools are appropriate for the background of higher education lecturers in Hebei Province.

Reliability refers to the consistency, stability or repeatability of measurement or research results. In other words, if the same measurement is repeated, it should yield similar results under consistent conditions (Kennedy, 2022). If you get the same repeated results under the same conditions, then the test will be reliable. This study used statistical methods Cronbach's alpha to assess the internal consistency of scales used to measure dean transformational leadership and instructional innovation. Because it is an indicator of the reliability of the construction. A higher alpha indicates greater internal consistency reliability. Generally, a value of Cronbach's alpha greater than 0.7 is considered acceptable, indicating that the measurement tools have good consistency (Schrepp, 2020).

During the investigation process, ensure that these tests are culturally sensitive and appropriate for China, especially Hebei Province. Interpretations of dean transformational leadership and pedagogical innovation may vary from culture to culture.

Table 1. Reliability Analysis

Sample Size	Items	Cronbach's alpha
353	48	0.952

Pilot study

To test the clarity and comprehensibility of the questionnaire items and to identify any potential issues that might influence participants' responses, a pilot study was conducted prior to the main survey. The pilot study helped estimate the time required for data collection and ensured that the overall research process could be carried out efficiently. A small sample of lecturers was selected from the target population in Hebei Province, China, ensuring diversity in terms of age, gender, and teaching experience. The pilot test aimed to confirm that the questionnaire content was clear, relevant, and contextually appropriate for the educational environment in Hebei. During this stage, the data collection procedure was implemented on a small scale to monitor the duration of the survey and identify any confusion or difficulties experienced by the participants.

The reliability and validity of the instrument were then assessed to determine whether the questionnaire accurately captured the intended data. Based on the pilot results, necessary

revisions and refinements were made to the questionnaire and overall research design to improve clarity and measurement accuracy. The pilot study data were also analyzed to identify potential challenges and risks that could arise during the full implementation. Through this process, the study enhanced the validity, reliability, and feasibility of the main research.

Data analysis

Before conducting inferential analyses, a normality test was performed to ensure that the data met the assumptions required for parametric statistics, such as the Pearson product–moment correlation. The skewness and kurtosis values of each variable were examined to determine the distribution of the data. Acceptable values for skewness range between –2 and +2, while kurtosis values between –7 and +7 indicate normality. The skewness values for transformational leadership (–0.737) and teaching innovation (–0.683), together with the kurtosis values for transformational leadership (–0.210) and teaching innovation (–0.824), were all within the acceptable range. These results confirm that the data were normally distributed, allowing for further statistical analyses, including Pearson correlation and regression tests. A total of 366 questionnaires were distributed to full-time lecturers from universities and colleges in Hebei Province, China. All questionnaires were returned, yielding a 100% response rate, with 353 valid responses retained for data analysis.

4. Findings and discussion

Demographic profile of respondents

The table demonstrates the analysis of the demographic factors of the respondents that are related to their personal characteristics such as gender, total years of working, education background. Table 2 indicates the results of the data analysis.

Table 2. Background of the Respondents (n=353)

Variable		Frequency	Percent
Gender	male	154	43.6
	female	199	56.4
Teaching age	5years	104	29.5
	6-10 years	138	39.1
	11-20 years	69	19.5
	Less than 20 years	42	11.9
Degree	Junior college	65	18.4
	undergraduate	185	52.4
	master	103	29.2

The respondents demographic profile shows that more female lecturers 199 (56.4%) participated in this study compared to male lecturers 154 (43.6%). Among them, the number of lecturers with 6-10 years of teaching experience is in the majority (39.1%). The largest

number of lecturers are undergraduate graduates (52.4%). The investigators identified that respondents had good teaching experience and had knowledge and experience assessing the leadership qualities of various school deans.

Level of dean transformational leadership practice in Hebei province

Table 3. Mean and Standard Deviation of Transformational Leadership

Variables	Dimension	No.	Mean	Std. deviation
Transformational Leadership	leadership charisma	B 1	3.88	1.154
		B 2	3.90	1.127
		B 3	3.85	1.211
		B 4	3.79	1.213
		B 5	3.86	1.135
	vision motivation	B 6	3.79	1.133
		B 7	3.83	1.188
		B 8	3.79	1.155
		B 9	3.86	1.121
		B 10	3.88	1.132
		B 11	3.76	1.108
	intellectual	B 12	3.90	1.102
	stimulation	B 13	4.00	1.075
		B 14	3.87	1.130
		B 15	3.90	1.164
		B 16	3.84	1.150
		B 17	3.67	1.242
	personalized care	B 18	3.61	1.294
		B 19	3.58	1.272
		B 20	3.57	1.332
		B 21	3.61	1.275

Table 3 Mean and Standard Deviation of Transformational Leadership. It includes data on various aspects of transformational leadership, such as charisma, vision motivation, intellectual stimulation, and personalized care. The table lists B1 to B5 as the leadership dimension, with mean values ranging from 3.57 to 4.00, indicating a generally positive perception of leadership charisma. Items B6 to B10 are included under the vision motivation dimension, with similar mean values, suggesting that vision motivation is also rated positively. The dimension of intelligence stimulation, covered by items B11 to B15, shows the average value reflecting the intellectual engagement provided by the leadership. The last dimension of personalized care, including items B16 to B21, has mean values that suggest a focus on individualized attention and support. The last dimension, personalized care (items B16–B21), emphasizes individualized attention and support. From this dimension results, the comparatively modest

mean values suggest that such practices (individual attention and support) may be constrained by Confucian power-distance norms, which shape hierarchical relationships in Chinese academic culture. In such contexts, leaders tend to maintain authority through formal structures rather than through personalized mentoring or emotional support. Moreover, the standard deviations for each item reflect the degree of variability in participants' responses. This information contributes to the broader analysis of transformational leadership and its influence on teaching innovation practices among lecturers in Hebei Province.

Level of lecturers' teaching innovation in Hebei province

Table 4. Mean and Standard Deviation of Teaching Innovation

Variables	Dimension	No.	Mean	SD
Teaching innovation	idea generation	C 1	3.58	1.270
		C 2	3.67	1.257
		C 3	3.65	1.277
		C 4	3.64	1.250
		C 5	3.62	1.272
		C 6	3.69	1.259
	idea promotion	C 7	3.70	1.244
		C 8	3.69	1.267
		C 9	3.69	1.275
		C 10	3.71	1.258
		C 11	3.71	1.213
		C 12	3.70	1.266
	work commitment	C 13	3.74	1.255
		C 14	3.77	1.241
		C 15	3.73	1.240
		C 16	3.72	1.213
		C 17	3.70	1.197
		C 18	3.66	1.296
	idea realization	C 19	3.75	1.205
		C 20	3.72	1.226
		C 21	3.74	1.185
		C 22	3.66	1.271
		C 23	3.70	1.277
		C 24	3.77	1.244

Table 4 presents statistical data on the four dimensions of teaching innovation: idea generation, idea promotion, work commitment, and idea realization. These are represented by items C1 to C24, along with their corresponding mean and standard deviation values. The mean scores, which range from 3.58 to 3.77, indicate a generally positive level of teaching innovation among lecturers in Hebei Province. The standard deviations reflect a moderate variability in responses, suggesting some differences in how innovation is perceived or practiced. Although the scores are relatively high across all dimensions, the slightly lower range in idea generation points to a potential area for enhancement. In light of this, deans could foster greater creativity by supporting risk-taking behaviors. For example, they may introduce targeted initiatives such as innovation grants or internal awards to encourage lecturers to experiment with new teaching methods and solutions. This data is essential for understanding current practices and shaping strategies for further development and institutional support.

Level of Transformational Leadership and Teaching Innovation Practices in Hebei Province

Based on the findings, the descriptive analysis revealed a high level of transformational leadership practices among deans. This suggests that transformational leadership can play a pivotal role in enhancing teaching innovation among lecturers. To support this potential, the Ministry of Education in China may consider introducing professional learning and leadership development programs aimed at equipping academic leaders with the skills and mindset needed to elevate leadership quality across the education system, thereby strengthening teaching innovation at the institutional level. The concept of transformational leadership and its influence on teaching innovation is a critical area in educational leadership research (Al-Husseini, El Beltagi, and Moizer, 2021). Transformational leadership refers to a style that inspires and motivates followers to go beyond expectations by reshaping their values and beliefs. It has been consistently linked to promoting innovation in educational environments (Gonfa, 2019).

In the context of Hebei Province or other educational regions, transformational leaders typically focus on developing a shared vision, inspiring educators and students, and supporting creative teaching practices that improve learning outcomes. These leaders build trust and commitment among faculty, which can influence the relationship between leadership behavior and teaching innovation. Furthermore, transformational leadership contributes significantly to shaping school practices that promote deeper learning, shifting from traditional instruction toward more innovative, student-centered approaches aligned with the demands of a digital and knowledge-driven society. Such leaders foster collaboration among teachers, challenge outdated norms, and encourage the use of teaching strategies that build critical thinking, creativity, and problem-solving skills in students.

The Relationship Between the Dean Transformational Leadership and Lecturers' Teaching Innovation in Hebei Province

To discover the relationship of transformational leadership and teaching innovation, Pearson Product-moment correlation analysis was employed between studied variables. The statistical significance was set at 95% confidence interval level ($p<0.05$). The correlation analysis is used to describe the strength and direction between two variables with the linear relationship. Table 5 shows the Pearson correlation analysis examined the relationship or association among transformational leadership (as independent variables) towards teaching innovation (as dependent variable). The relationship strength was analysed using Cohen (1988, 1992) and the range for the correlation coefficient of the relationship is explained below (Kraft, 2020).

Table 5. Pearson Correlation Coefficients

Variables	*r*	*p*
Transformational Leadership	.652	.000

**. at the 0.01 level (two-tailed), the correlation was significant.

As stated in table 6 below, the correlational matrix table indicating the correlation between the lecturers' teaching innovation practice which is the dependent variable while dean's transformational leadership as an independent variable.

Table 6. Correlational Matrix

Variables	*Y*	*X*
Y (Transformational Leadership)	1	
X (Teaching Innovation)	.652**	1

**. at the 0.01 level (two-tailed), the correlation was significant.

The above matrix table 6, indicates the correlation between the teaching innovation and dean transformational leadership. Thus showed that there is statistically significantly positive correlation that is strong among dean transformational leadership towards teaching innovation in Hebei province, China. The correlation of dean transformational leadership and teaching innovation has been explained in detail below. The test of Pearson product moment correlation was performed to test the hypothesis in the study.

H1: The dean's transformational leadership is positively correlated with lecturers' teaching innovation.

Pearson product moment correlation analysis was conducted to test the hypothesis. Thus, Pearson correlation was used to determine the relationship of dean transformational leadership and teaching innovation. The four dimensions of dean transformational leadership styles are leadership charisma, vision motivation, intellectual stimulation, personalized care. Based on the results recorded in table 8 coefficient value($r = .652$) was large and significantly positive ($p<0.00$). Therefore, dean transformational leadership has a stronger relationship towards teaching innovation. It could be concluded that dean transformational leadership is significantly positive and highly related to teaching innovation. Therefore, H1a is accepted. This study indicated that lecturers′ teaching innovation was affected by transformational leadership styles.

H1a: There is a significant correlation between the teaching innovation practices of universities lecturers and the dimensions of dean transformational leadership in Hebei, China.

The Pearson correlation analysis results from the table 9 also indicated, a significantly positive and strong relation between dean transformational leadership and lecturers' teaching innovation in Hebei province, China. ($r=.652$, $p< 0.00$). Therefore, H1a is accepted. The result analysis shows that when the lecturers think the dean has a good leadership style and they improve the teaching innovation. It is an indication that transformational leadership strongly related with teaching innovation of lecturers.

5. Implications and conclusions

Implication of the study

From the aspect of educational leadership, the study emphasizes the importance of transformational leadership in the field of education, especially in the context of Chinese higher

education. Research has shown that deans and other academic leaders who exhibit transformational leadership behaviors can significantly promote teaching innovation in lecturers. From the perspective of the teaching practice of lecturers, the research shows that the practice level of dean's transformational leadership is positively correlated with the teaching innovation level of lecturers. It shows when the dean's demonstrate the supportive, clear vision and implemented leadership, it helps enhancing the creativity and effective teaching among lecturers. In line with this, the organizational supports as practice by the dean mediates the relationship between transformational leadership and knowledge-sharing behavior (Chen et al., 2024). The study encourages lecturers to adopt innovative teaching methods and underscores the need for ongoing professional development aligned with transformational leadership principles. It also offers policy insights for leadership development programs, suggesting that supporting and rewarding transformational leadership behaviors can foster teaching innovation and enhance student learning outcomes (Bellibaş, Kılınç & Polatcan, 2021). And this study opens the way for further research on the impact of transformational leadership outside of Hebei, China. While the study focuses on Hebei, China, its implications can be contextualized globally. Educational institutions worldwide can draw insights from the relationship between transformational leadership and teaching innovation to enhance their own practices and adapt strategies to their specific contexts.

It is concluded from this study that the organizational atmosphere that values and promotes the transformative leadership of deans is conducive to promoting teaching innovation. Colleges and universities may benefit from fostering an atmosphere that supports innovation, in which deans have the ability to motivate and motivate lecturers effectively (Averill & Major, 2020). For example, establishing a dynamic incentive mechanism. A combination model of base salary and performance rewards can be adopted. Linking individual interests closely with the long-term development of the university will help stimulate lecturers' innovative spirit in teaching. Ultimately, the study's implications extend to the student learning experience. By fostering teaching innovation through transformational leadership practices, academic institutions can improve the quality of teaching by lecturers. Instructors are encouraged to promote classroom engagement in innovative ways and better prepare students for future challenges.

Conclusion of the Study

The study found a positive relationship between dean transformational leadership and teaching innovation. Lecturers who perceived their deans as transformational leaders were more likely to engage in innovative teaching practices. Specific leadership behaviors (such as leadership charisma, vision motivation, intellectual stimulation, and personalized care) were associated with higher levels of teaching innovation.

The study proves that deans who show transformational leadership quality have significant positive influence on the innovative teaching practice of lecturers. The data show that the influence of dean's leadership charisma and intellectual stimulation have a strong correlation with the improvement of teaching management and innovation. Through data analysis, it is concluded that transformational leadership has more direct influence on lecturers' teaching innovation behavior than indirect channels such as knowledge management.

The results have implications for educational leadership practices, particularly in academic institutions. Deans and other academic leaders should prioritize the development of transformational leadership skills to facilitate teaching innovation and ultimately enhance the quality of education. Finally, the conclusion may suggest potential avenues for future research,

such as exploring the longitudinal effects of dean transformational leadership on teaching innovation or investigating the role of contextual factors in shaping this relationship within different cultural and institutional settings.

In conclusion, this study sheds light on the critical role of dean transformational leadership in fostering teaching innovation among lecturers in Hebei, China. By cultivating a culture of innovation within academic institutions, transformational leaders can inspire faculty members to embrace innovative pedagogical approaches and ultimately enhance the quality of education. The implications of the study extend beyond Hebei to inform educational leadership practices globally, offering valuable insights for promoting teaching innovation and driving educational excellence in higher education settings.

6. Recommendations

Recommendations for practice

Universities should recognize the importance of leadership in fostering innovative teaching environments (Al-Husseini, El Beltagi & Moizer, 2021). Deans and other academic leaders can foster innovation in teaching by modeling transformational leadership behaviors. The implementation of the specific strategy is to organize regular seminars and exchanges between deans. Exchange interviews on transformational leadership practices. Train full-time lecturers in innovative thinking. Open a communication mailbox between the dean and the lecturer. Build a communication bridge for leaders.

In terms of leadership development, school leaders (including deans) should embrace leadership development programs to systematically acquire and internalize effective transformational leadership qualities. Developing transformational leadership skills is essential to changing lecturers' attitudes and increasing their commitment to the profession. The university is committed to promoting transformational leadership by encouraging deans and other academic leaders to exhibit transformational leadership behaviors. Create a campus environment where leaders inspire, motivate and stimulate the creativity of faculty (Ariyani & Zuhaery, 2021). Deans should actively engage in intellectual stimulation that encourages critical thinking, creativity, and innovative teaching practices on the faculty. Deans should enhance personal charisma and vision motivation. Charisma influence and motivational motivation have positive effects on lecturers' teaching career commitment. It is helpful to cultivate the sense of mission and enthusiasm of educators. As a school leader should support the autonomy and creativity of educators (Fradkin-Hayslip, 2021). Transformational leaders should empower lecturers. Instructors are encouraged to use experimental and creative teaching methods.

Recommendations for Future Research

First, future studies should incorporate a cross cultural perspective by conducting similar research in diverse educational systems. This would allow for a comparison of how transformational leadership influences teaching innovation across different cultural and institutional contexts. Additionally, conducting in depth case studies within specific academic institutions in Hebei could uncover contextual factors that shape the relationship between

deans' transformational leadership and lecturers' teaching innovation, providing rich and localized insights.

Second, there is a need for longitudinal research to examine the long term effects of transformational leadership on lecturers' teaching innovation and overall educational outcomes. Such studies would offer a deeper understanding of how leadership practices evolve over time and their sustained impact. Expanding the scope to include other educational roles such as department heads, principals, and administrators would also provide a more comprehensive view of how various leadership positions influence teaching innovation.

Finally, it would be valuable to compare transformational leadership with other leadership styles such as transactional or laissez faire leadership to assess their relative effectiveness in fostering teaching innovation. This comparison could inform more targeted and effective leadership development strategies within higher education institutions.

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