How College Students' Perceived Teachers' Positive Leadership Enhances Their Creativity? The Mediating Role of Intrinsic Motivation

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Abstract

The development and cultivation of college students' creativity is a crucial task of global higher education. Therefore, this study aims to explore the influence of college students' perceived teachers' positive leadership on creativity through the mediating role of intrinsic motivation from the perspective of cognitive evaluation theory. The data for this study were collected from 511 students in Chinese colleges. The results indicate that college students' perceived teachers' positive leadership has a significant positive impact on creativity. Moreover, intrinsic motivation partially mediates the relationship between college students' perceived teachers' positive leadership and creativity. The results of this study have vital implications for college administrators and teachers.

Keywords: *Positive Leadership, Creativity, Intrinsic Motivation, Cognitive Evaluation Theory.*

Introduction

Currently, fostering college students' creativity has become a vision and mission of colleges worldwide (Caballero-García & Ruiz, 2021; Ibrayeva et al., 2022; Wang, 2021). Creativity involves intellectual processes of generating new and valuable ideas (Hon & Lui, 2016). It is a critical skill for students' personal success as it enables them to tackle challenging tasks and solve problems by generating novel ideas (Doleck et al., 2017; Li, 2022). Researchers have identified numerous predictors of college students' creativity (Alsharari & Alshurideh, 2020; Chien-Chi et al., 2020; Shi & Wang, 2020). Particularly, college teachers, as frontline leaders influencing college students' creativity, play a crucial role in its development and cultivation (Wang et al., 2022). Researchers have begun to focus on the impact of different leadership theories on college students' creativity (Shang et al., 2019; Xia et al., 2021).

Positive leadership, as a relatively new leadership theory, has evolved from the literature of positive organization and positive psychology (Cameron, 2012). The concept of positive leadership was introduced by Lloyd and Atella (2000). Positive leadership refers to a leadership style where leaders actively promote extraordinary achievements within the organization and its members, focusing on individuals' strengths and capabilities, fostering virtues in individuals (Cameron, 2012). Existing leadership research focused on business organizations or work environments has recognized that positive leadership is one of the important antecedents of individual creativity (Lyubomirsky et al., 2005; Yan et al., 2023). Antino *et al.* (2014) have been interested in positive leadership in higher education context, and their findings have indicated a positive relationship between positive leadership and student engagement. However, empirical studies on teachers' positive leadership in higher education are still relatively scarce, warranting further research to provide evidential support.

In recent years, researchers have suggested extending the focus of studying the influence of teacher leadership on college students' creativity to consider the possibility of other factors between them, thus clarifying their relationship (Gu et al., 2017). Literature suggests that positive leadership, in influencing individual behavior, enhances intrinsic motivation by satisfying individuals' inner needs, leading to positive outcomes (Xue et al., 2022; Wan et al., 2022;). When individuals perceive that their psychological needs are met by leaders, there is a transformation in their inner feelings and thoughts, which can be considered as a psychological process for enhancing creativity (Kong et al., 2019). In other words, intrinsic motivation becomes a crucial factor in whether individuals voluntarily exhibit creativity. In the context of higher

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education, Murphy *et al.* (2017) have found that teachers with a positive leadership style focus on students' potential and growth, positively influencing their intrinsic motivation. Intrinsic motivation is an essential factor in helping students engage and create academically, and when intrinsic motivation is higher, students have more creative ideas and greater flexibility (Zhang et al., 2021). However, there is limited research on the mediating role of intrinsic motivation between college students' perceived teachers' positive leadership and creativity. Therefore, this study draws on cognitive evaluation theory to attempt to explain this psychological mechanism. Cognitive evaluation theory holds that external factors can affect internal motivation, which occurs when external factors perceive autonomy and ability, thus motivating individual behavior (Deci & Ryan, 1985). Moreover, some researchers argue that leaders can be viewed as significant external factors that promote individual creativity by influencing their intrinsic motivation (Su et al., 2020; Tu & Lu, 2013). Thus, this study posits that college students' perceived teachers' positive leadership may influence intrinsic motivation, which in turn affects college students' creativity.

In summary, this study, grounded in cognitive evaluation theory, examines the impact of college students' perceived teachers' positive leadership on creativity through intrinsic motivation. Therefore, this study makes a momentous contribution to the existing literature on leadership and creativity.

Literature Review

Cognitive Evaluation Theory

The Cognitive Evaluation Theory (CET), proposed by Deci and Ryan (1985), examines how external factors influence intrinsic motivation, suggesting that this influence occurs through the perception of autonomy and competence by external factors, thereby affecting individual behavior. The theory also indicates that psychological needs for autonomy and competence form the basis of intrinsic motivation (Deci & Ryan, 2008). Autonomy reflects individual ownership of behavior and choice, while competence refers to individual knowledge of the skills necessary to successfully complete tasks in specific environments (Deci & Ryan, 2000). Deci and Ryan (1985) also suggested that the evolution of individual intrinsic motivation follows a clear causal sequence, starting from autonomy support, triggering changes in perceived competence, and ultimately promoting the development of intrinsic motivation. Therefore, external factors can directly promote intrinsic motivation by increasing perceived competence or indirectly through providing autonomy (Tu & Lu, 2013).

Past researchers have utilized CET to explore leadership as an external factor influencing creativity (Javed et al., 2019; Su et al., 2020; Tu & Lu, 2013). For example, Tu and Lu (2013) have considered ethical leadership as an external factor based on CET and found that followers of ethical leaders exhibit higher intrinsic motivation, demonstrate greater perseverance in the face of obstacles, and are willing to use their existing knowledge to find alternative solutions to problems, thereby displaying innovation in their work behaviors. Based on CET, Javed *et al.* (2019) have viewed inclusive leadership as an external factor and found that inclusive leaders can enhance employees' intrinsic motivation by balancing their autonomy and competence, thereby making employees more innovative in their work. Su *et al.* (2020) have considered servant leadership as an external factor based on CET and found that servant leaders, by focusing on the needs of subordinates and facilitating their autonomy, promote subordinates' intrinsic motivation, thereby making them more creative in their work. Since ethical leadership, inclusive leadership, and servant leadership have been considered positive forms of leadership in past research (Hoch et al., 2018; Lee et al., 2020; Randel et al., 2018), this study utilizes CET to explain the psychological mechanism between college students' perceived teachers' positive leadership and creativity. Building upon the aforementioned literature, this study considers positive leadership as an external factor and suggests that college students' perceived teachers' positive leadership may influence creativity through the mediating role of intrinsic motivation.

Positive Leadership and Creativity

Creativity is considered the generation of novel and useful ideas (Amabile, 2011). Additionally, creativity involves individual creative thinking based on their skills, qualifications, and experiences (Shafi et al., 2020). Creative students enjoy learning new things, come up with innovative ideas, and collaborate with others to

solve life's problems (Weng et al., 2022). Researchers worldwide strive to understand the factors influencing individual creativity, especially those influencing students' creativity (Chang et al., 2022; Tang et al., 2022; Wang et al., 2022). Leadership is considered a significant predictor of individual creativity (Luu et al., 2019). Consistent with this, previous studies have identified positive effects of teacher leadership on students' creativity (Gu et al., 2017; Meng & Zhao, 2018; Xia et al., 2021).

Positive leaders can create positive work environments for organizational members, improve interpersonal relationships, and inspire subordinates' creativity (Cameron, 2013). Past researchers have begun applying positive leadership in higher education context (Antino et al., 2014). Tierney and Farmer (2002) have pointed out that due to the high social interconnectedness in higher education, the development of students' creativity does not occur in social isolation. Therefore, teacher' s behavior is considered a fundamental requirement for enhancing students' creativity (Sun et al., 2021). Thus, teachers' encouragement, support, and other positive behaviors have been identified as crucial environmental factors supporting students' creativity (Soh, 2017). Specifically, teachers' creation of a conducive learning environment has a significantly positive impact on students' creativity (Lin & Wong, 2014). Richardson and Mishra (2018) have found that teachers' fostering of teacher-student relationships, peer relationships, and classroom atmosphere is indispensable for enhancing students' creativity. Empirical research by Fan and Cai (2022) have demonstrated that teachers effectively enhance students' creativity in the classroom by encouraging creative learning and thinking. Giving students opportunities for independent learning and thinking is beneficial for their creativity development (Soh, 2017). Mentors create a free environment for graduate students, cultivating their creativity and encouraging them to explore their research questions freely (Gu et al., 2017; Shalley et al., 2000). Through mentors' academic support, graduate students can directly seek academic assistance from mentors, including useful feedback, suggestions, practical assistance, and resources, enabling mentors to enhance graduate students' ability to propose new ideas and questions (Gu et al., 2017; Overall et al., 2011). Therefore, this study postulates that teachers with a positive leadership style are expected to enhance students' creativity. Based on the above discussion, this study proposes the following hypothesis:

H1: College students' perceived teachers' positive leadership has a significant positive impact on creativity.

The Mediating Role of Intrinsic Motivation

Motivation concerns what drives people to act, think, and develop (Deci & Ryan, 2008). Deci and Ryan (1985) categorized individual motivation into three types, intrinsic motivation, extrinsic motivation and amotivation. Among them, intrinsic motivation has emerged as a key mechanism driving creativity (Hennessey, 2015; Zhang et al., 2021). Intrinsic motivation describes individual autonomous reactions to external environments, ultimately influencing individual engagement in creative activities (Shalley et al., 2000). According to CET, external factors can influence intrinsic motivation, specifically, external factors can directly promote intrinsic motivation by increasing perceived competence or indirectly through providing autonomy, thus leading to more effective behaviors (Tu & Lu, 2013).

Previous research has explored many factors influencing intrinsic motivation, such as metacognitive awareness (Urban et al., 2021), personality traits (Tan et al., 2019), and teacher leadership (Gu et al., 2017). Xia *et al.* (2021) have argued that teacher leadership is a vital factor influencing students' intrinsic motivation. Previous studies have explored the impact of different teacher leadership styles on students' intrinsic motivation (Charbonneau & Barling, 2001; Gu et al., 2017; Xia et al., 2021). Due to the dominant position of teachers and their direct interaction with students, teachers can become the primary external factors motivating students' intrinsic motivation (Du et al., 2019). Similarly, teachers with a positive leadership style can focus on students' potential and growth, exerting beneficial effects on students' intrinsic motivation (Murphy et al., 2017). These teachers can also stimulate students' desire for achievement through guidance (Shang et al., 2019). Therefore, teachers help students become more proactive in learning by engaging them in positive interactions, which increases their enthusiasm and energy for learning (Xia et al., 2021). Teachers not only encourage students to express their views but also provide them with positive feedback, enhancing their autonomy (Meng & Zhao, 2018). Consequently, these behaviors of teachers can promote the establishment of positive teacher-student relationships and enhance students' intrinsic motivation

(Khalilzadeh & Khodi, 2021). Additionally, teachers' creation of a positive learning environment positively influences students' intrinsic motivation (Siu et al., 2014; Tsai et al., 2015).

Intrinsic motivation is an important factor in promoting students' active participation in learning and creativity (Gulzar et al., 2021). Intrinsic motivation encourages students to generate more creative ideas and exhibit greater flexibility, leading to outstanding performance in creative tasks (Zhang et al., 2021). Individuals with higher intrinsic motivation tend to generate creative ideas more easily because intrinsic motivation can enhance creativity by increasing positive emotions and adventurousness (Grant & Berry, 2011). Intrinsic motivation represents students' interest in learning, making them more engaged and creative in their learning (Gulzar et al., 2022). Previous research has provided evidence that students' intrinsic motivation can promote creativity. For example, Meng *et al.* (2017) have conducted research in China and found that intrinsic motivation is positively correlated with students' creativity. Xia *et al.* (2021) have found that intrinsic motivation is a momentous mediating variable between teacher leadership and student creativity. Gu *et al.* (2017) 's empirical study shows that intrinsic motivation plays a complete mediating role in the impact of supportive supervisory style and directive supervisory style on graduate students' creativity. In summary, based on CET, this study suggests that teachers' positive leadership as a crucial external factor may influence students' intrinsic motivation, ultimately promoting their creativity. Therefore, this study proposes the following hypothesis:

H2: Intrinsic motivation mediates the relationship between college students' perceived teachers' positive leadership and creativity.

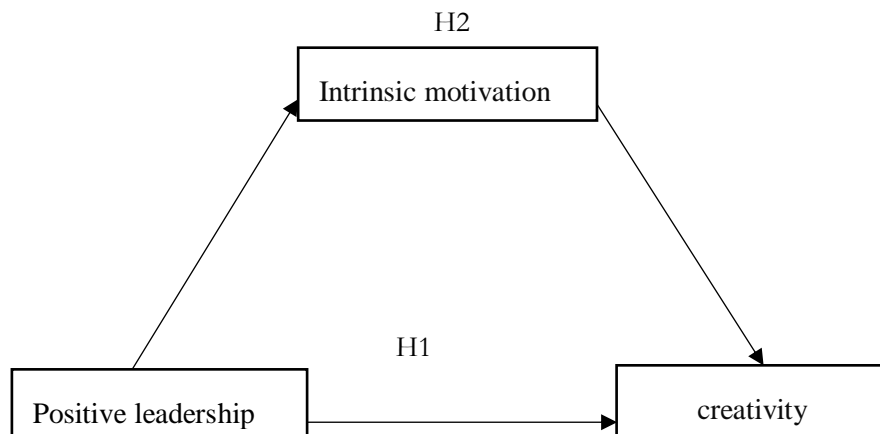The research model proposed in this study is depicted in Figure 1.

Figure 1. Research Framework

Research Methodology

Participants and Sampling

The data for this study were collected from students at three colleges in Ningxia Hui Autonomous Region, China. The three colleges are all demonstrative schools of the "National College Students' Innovation and Entrepreneurship Training Program" certified by the Chinese Ministry of Education. The method of convenience sampling was employed in this study. Convenience sampling is a non-probabilistic method used to select a sample of participants based on their willingness to participate and local convenience (Creswell & Creswell, 2017). The survey was conducted in two rounds, including a pilot questionnaire and formal questionnaire. The pilot questionnaire was administered from August 6, 2022, to August 13, 2022, resulting in 137 valid responses with a response rate of 83%. After conducting reliability and validity analyses on the pilot questionnaire, reverse items and items with factor loading less than 0.4 were removed

to form the formal questionnaire. The formal questionnaire was administered from December 20, 2023, to December 30, 2023. A total of 600 formal questionnaires were distributed, and 511 valid responses were collected, resulting in a response rate of 85%. Among the respondents, 203 (39.7%) were male and 308 (60.3%) were female, with 262 (51.3%) majoring in humanities and 249 (48.7%) in science. Regarding grades, there were 158 (30.9%) freshmen, 125(24.5%) sophomores, 136 (26.6%) juniors, and 92 (18%) seniors.

Research Instruments

The measurement tools used in this study are all from existing studies. In this study, the method of Brislin (1970) was adopted to translate the scale back. First, the English scale was translated into Chinese, and then the Chinese scale was translated into English, to make sure the translation was accurate and easy to understand. After comparing the differences, we modified and adjusted some items to preserve the accuracy of this study. Since the Positive Leadership Scale and Creativity Scale were originally designed to measure employees' perception, the items in these scales were minimally modified and adjusted to suit the context of higher education.

Positive Leadership

The Positive Leadership scale, a simplified version adapted from Cameron (2012), was used to measure college students' perceived teachers' positive leadership. This scale consists of 15 items across five dimensions: positive climate, positive relationships, positive communication, positive meaning, and positive strategies. Students were asked to rate their agreement with these statements regarding teacher leadership behavior. The scale used a 5-point Likert scale ranging from 1 (never) to 5 (always), with higher scores indicating higher levels of perceived positive leadership. The scale has been used in higher education context (Antino et al., 2014). The exploratory factor analysis of the pilot questionnaire showed that KMO=0.937, Bartlett's Test of Sphericity value was significant ($p<0.001$). The maximum varimax rotation was used for further analysis, and the factor loading ranged from 0.461 to 0.896, with good validity (Zaltman & Burger, 1975). The Cronbach's α value of each dimension was 0.867, 0.901, 0.825, 0.848, 0.953, respectively, and the overall scale was 0.953, indicating that the scale had good reliability.

Intrinsic Motivation

The Intrinsic Motivation scale, adapted from Amabile *et al.* (1994), was used to measure students' intrinsic motivation. This scale consists of 15 items across two dimensions: enjoyment and challenge. Students were asked to report their agreement with statements regarding intrinsic motivation. The scale used a 4-point Likert scale ranging from 1 (completely disagree) to 4 (completely agree), with higher scores indicating higher levels of intrinsic motivation. The scale has been used in the Chinese higher education context (Siu et al., 2014; Tsai et al., 2015; Wu et al., 2020). In the past, some researchers argued that the scale could have higher reliability and validity by abandoning the reverse item (Barnette, 2000), so the reverse items were also deleted in this study. Exploratory factor analysis was carried out on the pilot questionnaire, and items with factor loading less than 0.4 were deleted, leaving 12 questions remaining. The results showed that: KMO=0.867, Bartlett's Test of Sphericity value was significant ($p<0.001$). The maximum varimax rotation was used for further analysis, and the factor loading ranged from 0.446 to 0.860, with good validity. The Cronbach's α values of each dimension were 0.880 and 0.820, respectively, and the overall scale were 0.904, indicating good reliability.

Creativity

The Creativity scale, adapted from Zhou and George (2001), was used to measure students' creativity. This scale consists of 13 items measuring a single dimension. Students were asked to report their agreement with statements regarding their own creativity. The scale used a 5-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree), with higher scores indicating higher levels of creativity. The scale has been used in the Chinese higher education context (Tsai et al., 2015; Wang & Liu, 2023). The exploratory factor analysis of the pilot questionnaire showed that KMO=0.935, Bartlett's Test of Sphericity value was significant ($p<0.001$). The maximum varimax rotation was used for further analysis, and the factor loading

was between 0.671 and 0.813, with good validity. Cronbach's α value of the overall scale was 0.941, indicating that the reliability of the scale was good.

Data Analysis Strategy

Data analysis was conducted using SPSS and AMOS. Confirmatory factor analysis was used to test the validity, Process macro model 4 was adopted to test the mediating effect, and bootstrapping method with 5000 repetitions was employed to further verify the hypothesis of this study (Hayes, 2017).

Findings

Common Method Variance（CMV）Test

In order to test the common method variance, the CFA test was performed on the multi-factor model and compared with the CFA test of the single-factor model (Podsakoff & Organ, 1986). The results are presented in Table 1. The multi-factor model in the present study had a good fit with the data (χ^2=1789.416, CFI=0.922, RMSEA=0.054), while the single-factor model had poor fit with the data (χ^2=5013.099, CFI=0.693, RMSEA=0.106). The comparison showed that the multi-factor model significantly outperformed the single-factor model ($\Delta\chi^2 = 3223.68$, $\Delta df = 28$, $p < 0.001$), indicating that the two models were significantly different. Therefore, there was no serious common method variance in this study.

Table 1. Results Of the Common Method Variance Test

Model	χ^2	df	χ^2/df	$\triangle\chi^2$	$\triangle df$	p
Single-factor model	5013.099	740	6.774	3223.68	28	0.000
Multi-factor model	1789.416	712	2.513			

Reliability and Validity Analysis

Cronbach's α was used to assess the reliability of the formal questionnaire in this study. Hair *et al.* (2010) have suggested that Cronbach's α values should be greater than 0.7. The reliability analysis results are presented in Table 2, Cronbach's α values of all variables are greater than 0.7. Convergent validity was measured using Composite Reliability (CR) and extracted Average Variance Extracted (AVE), CR values should be greater than 0.6, and AVE values should exceed 0.5 (Fornell & Larcker, 1981). Furthermore, the scores of factor loadings for each factor were significant and higher than 0.4.

Table 2. Reliability and Validity Estimates

Constructs	Items	Item loading	CR	Cronbach's α	AVE
PA	3	0.80-0.86	0.862	0.860	0.676
PR	3	0.77-0.86	0.649	0.842	0.847
PC	3	0.74-0.81	0.608	0.819	0.823
PM	3	0.80-0.84	0.666	0.855	0.857
PS	3	0.78-0.84	0.675	0.861	0.861
EN	8	0.65-0.76	0.893	0.891	0.510
CH	4	0.72-0.79	0.839	0.837	0.566
CR	13	0.66-0.81	0.839	0.935	0.566

Note: PA=Positive atmosphere; PR=Positive relationship; PC=Positive communication; PM=Positive meaning; PS=Positive strategy; EN=Enjoyment; CH=Challenge; CR=Creativity; CA=Cronbach alpha; CR=Composite reliability; AVE=Average extracted variance.

Descriptive Statistics and Correlation

Table 3 presents the mean, standard deviation, and correlation for all variables. From Table 3, it can be observed that the correlation coefficients between variables range from 0.58 to 0.76, and all *p*-values are less than 0.001, indicating significant correlations between variables.

Table 3. Means, Standard Deviations and Correlations

Variables	M	SD	PL	IM	CR
PL	4.10	0.63	1		
IM	3.15	0.44	0.576***	1	
CR	3.94	0.58	0.619***	0.764***	1

Note: ***$p<0.001$; PL=Positive leadership; IM=Intrinsic motivation; CR=Creativity.

Hypothesis Testing

The results, as shown in Table 4, indicate that in Model 1, college students' perceived teachers' positive leadership significantly and positively influences creativity (β=0.564, $p<0.001$), supporting Hypothesis 1. In Model 2, college students' perceived teachers' positive leadership has a significant and positive impact on intrinsic motivation (β=0.401, $p<0.001$). In Model 3, after adding intrinsic motivation as a mediating variable, college students' perceived teachers' positive leadership still significantly and positively influences creativity (β=0.244, $p<0.001$), albeit with a decreased effect compared to Model 1. Furthermore, intrinsic motivation significantly and positively influences creativity (β=0.798, $p < 0.001$). Therefore, it can be concluded that intrinsic motivation partially mediates the relationship between college students' perceived teachers' positive leadership and creativity, supporting Hypothesis 2.

Furthermore, this study employed a bias-corrected non-parametric percentile Bootstrap method to examine the mediating effect of intrinsic motivation in the relationship between college students' perceptions of teachers' positive leadership and creativity. The indirect effect value is 0.320, and 95% Confidence Interval is [0.260-0.384], which does not include 0. This reaffirms the significant mediating effect of intrinsic motivation in the relationship between college students' perceptions of teachers' positive leadership and creativity.

Table 4. Empirical Mediation Model of Intrinsic Motivation

Variables	Model 1	Model 2	Model 3
	CR	IM	CR
	β (t)	β (t)	β (t)
PL	0.564 (17.760***)	0.401 (15.902***)	0.244 (8.104***)
IM			0.798 (18.502***)
R²	0.383	0.332	0.631
F	315.422***	252.869***	434.628***

Note: ***$p<0.001$; β is the standardized regression coefficient; PL=Positive leadership; IM=Intrinsic motivation; CR=Creativity.

Discussion

The findings of this study reveal that college students' perceived teachers' positive leadership significantly influences creativity. This aligns with prior research indicating that teacher leadership has a positive impact on students' creativity (Xia et al., 2021; Gu et al., 2017; Meng & Zhao, 2018). The empirical evidence provided in this study supports the positive relationship between teacher leadership and students' creativity in higher education context. This discovery suggests that teachers with a positive leadership style should

motivate students to engage in creative exploration in higher education. Such encouragement helps to create a positive learning environment and fosters students' creativity. This study concludes that the possible reason is that college teachers are the front-line leaders that affect the creativity of college students. Teachers with a positive leadership style will focus on students' potential and growth, which positively influences students' outcomes (Murphy et al., 2017). Positive leaders motivate individuals to actively engage while interacting with them, making them more dynamic and creative (Yan et al., 2023). Additionally, the optimism and positive outlook of positive leaders often enhance the positive aspects of mindset (Salmi et al., 2014). The positive attitude of teachers contributes to creating a conducive learning environment for students, promoting the generation of novel and useful ideas, and cultivating students' creativity (Sobaih & Moustafa, 2016). Therefore, teachers with a positive leadership style can serve as role models for college students to emulate, thereby enhancing their creativity.

Furthermore, this study demonstrates that intrinsic motivation partially mediates the impact of college students' perceptions of teachers' positive leadership on their creativity. This finding is in line with previous research, which suggests that the supportive behavior of supervisors can promote the intrinsic motivation of graduate students, which in turn leads them to find new and better ways of doing things and exert more creativity in research work (Gu et al., 2017). The finding of this study also reinforces the view of cognitive evaluation theory, which holds that external factors motivate individual behavior by influencing their intrinsic motivation (Deci & Ryan, 1985). Applying this logic to the process of how college students' perceptions of teachers' positive leadership influences creativity, when teachers demonstrate positive leadership behaviors towards students, such as establishing positive teacher-student relationships, engaging in positive communication, and creating a positive learning environment, students are more likely to actively engage in learning, enjoy the learning process, and typically be more willing to accept challenges, thereby intrinsically stimulating their creativity.

Theoretical and Practical Implications

This study holds two theoretical implications for the literature on creativity and higher education. Firstly, it enriches our understanding of the relationship between college students' perceived teachers' positive leadership and their creativity in higher education context. By applying CET to college students' perceived teachers' positive leadership, this study explores the role of teachers with a positive leadership style in fostering students' creativity. The findings demonstrate a significant positive influence of college students' perceived teachers' positive leadership on their creativity in a higher education context, contributing to a broader understanding of teachers' positive leadership in higher education. Secondly, our findings, by considering intrinsic motivation as a mediator, explore the underlying influencing mechanism through which college students' perceived teachers' positive leadership influences their creativity. Most existing studies have only examined the mediating role of intrinsic motivation in the relationship between supervisory leadership (such as ethical leadership, humble leadership, empowering leadership) and creativity, with little research investigating its role in the relationship between college students' perceived teachers' positive leadership and their creativity. Based on CET, our findings provide empirical evidence for the view that college students' perceptions of teachers' positive leadership serve as an external factor influencing their creativity indirectly through intrinsic motivation.

This study also has significant practical implications for higher education practice. Firstly, college administrators should train teachers to become positive leaders to enhance students' creativity. Leadership training programs should not only emphasize the importance of positive leadership but also guide teachers in implementing positive leadership. Particularly, to ensure that teachers learn how to effectively implement positive leadership, leadership training programs could introduce aspects such as fostering a positive learning atmosphere, establishing positive relationships between teachers and students, encouraging positive communication between them, and creating positive meaning. Through these aspects, teachers can learn how to become positive leaders in practice. Secondly, as intrinsic motivation partially mediates the relationship between college students' perceived teachers' positive leadership and their creativity, college teachers can adopt a positive leadership style and then enhance students' intrinsic motivation. In this process, students' creativity will be stronger. Specifically, while exercising positive leadership, college teachers can create a positive learning environment for students, stimulating their interest in tasks to

enhance intrinsic motivation. For example, teachers can pose intriguing questions in courses, which can be challenging questions within the discipline, guiding students to explore and learn actively, arousing their curiosity in the process of exploration. Teachers can also engage in more active interaction with students and understand their needs, making them feel cared for and supported by the teacher. Good teacher-student relationships help students better integrate into the learning environment and enjoy the learning process.

Limitations and Future Research

This study has the following limitations. Firstly, it is based on a cross-sectional design. However, considering that intrinsic motivation and creativity may change over time, future researchers are advised to confirm their causal relationships through longitudinal studies. Secondly, this study explores the relationship among college students' perceived teachers' positive leadership, intrinsic motivation, and creativity. However, according to the literature, we find that there may be other moderating variables, such as innovation consciousness (Olugbara et al., 2020), individualism and collectivism (Yan et al., 2023). Therefore, the above variables could be considered as moderating factors in new research models to better understand their boundary conditions. Thirdly, this study only investigates students from three colleges in Ningxia Hui Autonomous Region of China, which limits the generalizability of the research findings. Future research should consider expanding the sample to other regions in China to validate the generalizability of the study results. However, caution should be exercised when generalizing the results of this study to different cultural, economic, or institutional backgrounds.

Conclusion

This study examines the relationship among college students' perceived teachers' positive leadership, intrinsic motivation, and creativity. Based on CET, this study posits that college students' perceived teachers' positive leadership is an external factor influencing their creativity through its impact on intrinsic motivation. This study responds to the call from researchers for empirical research on the relationship between teacher leadership and creativity in higher education context (Gu et al., 2017; Shang et al., 2019; Xia et al., 2021).

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