

Intrinsic Motivation and Innovative Teaching Practices Among Teachers in Beijing Colleges and Universities

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Abstract: The global transformation of higher education, particularly in Beijing's prestigious institutions, has highlighted the need for innovative teaching practices amidst rapid technological and societal changes. This study aims to explore the influence of intrinsic motivation on innovative teaching practices among teachers in Beijing's colleges and universities, considering the mediating roles of teacher self-efficacy and engagement. Utilizing a quantitative research methodology, data were collected from 500 teachers across 20 institutions and analyzed using structural equation modeling. The findings reveal a significant positive relationship between intrinsic motivation and innovative teaching practices, with both teacher self-efficacy and engagement serving as important mediators. This research underscores the crucial role of intrinsic motivation in driving educational innovation and provides actionable insights for enhancing teaching quality and outcomes in higher education.

Keywords: Intrinsic Motivation, Innovative Teaching Practices, Teacher Self-efficacy, Teacher Engagement

1. Introduction

The global landscape of higher education is undergoing a profound transformation, propelled by rapid technological advancements, evolving student demographics, and changing societal needs (Mohamed Hashim et al., 2021). These shifts are particularly notable in Beijing, China's capital, renowned for its prestigious universities and long-standing tradition of educational excellence. This research focuses on the intricate interplay of intrinsic motivation, teacher self-efficacy, teacher engagement, and innovative teaching practices within this dynamic context.

Over the past few decades, there has been a significant paradigm shift in teaching practices in higher education (Goh & Abdul-Wahab, 2020). Traditional lecture-based methods are increasingly being supplemented or replaced by innovative approaches such as blended learning, flipped classrooms, and project-based learning (Deng, 2023). These methods prioritize active learning, student engagement, and the application of knowledge in real-world scenarios (Chua & Islam, 2021). Beijing's universities have been at the forefront of this evolution, integrating innovative teaching practices to enhance learning outcomes and prepare students for modern-world challenges.

Intrinsic motivation, defined as the internal drive to engage in an activity for its own sake due to interest,

enjoyment, or personal satisfaction (Fishbach & Woolley, 2022), is a critical factor in education. In higher education, teachers with high intrinsic motivation are often more willing to experiment with new teaching methods and invest in developing their pedagogical skills (Alamri et al., 2020). Additionally, the theory of self-efficacy, proposed by Bandura & Wessels (1994), is pivotal in understanding teacher behavior. Teacher self-efficacy, the belief in one's ability to teach effectively and influence student learning, significantly impacts the adoption of innovative teaching practices.

Teacher engagement, characterized by commitment, passion, and involvement in their teaching roles (Gilbert & Suh, 2021), is another crucial element. Engaged teachers, marked by high energy and enthusiasm, are more likely to implement innovative practices. Research has shown strong links between intrinsic motivation, self-efficacy, and the propensity to adopt innovative teaching practices (Hidayat et al., 2023). Understanding these dynamics in Beijing's higher education sector can offer valuable insights into supporting and encouraging educators in adopting and sustaining innovative teaching practices.

In the ever-evolving educational landscape of Beijing, the intrinsic motivation of teachers emerges as a pivotal element influencing the quality and innovation of teaching practices (Gao, 2020). Intrinsic motivation, the inner drive that propels individuals to engage in an activity for the joy and satisfaction derived from the activity itself, is particularly crucial in education (Howard et al., 2020). It fuels educators' commitment to teaching excellence, curriculum development, and the incorporation of innovative pedagogies (Tang et al., 2020). However, this fundamental motivator faces numerous challenges within the high-pressure environment of Beijing's universities and colleges.

One significant challenge is the balancing act teachers must perform between their teaching responsibilities and the expectations of scholarly research and publication (Pan, 2020). The dual pressure can lead to burnout, significantly dampening a teacher's intrinsic motivation (Liu & Yu, 2021). The joy of teaching and engaging with students often becomes overshadowed by the relentless pursuit of academic prestige, as measured by publications and research grants (Ma, 2019). This shift in focus can erode the foundational passion that drives educators to innovate and excel in their teaching.

Moreover, the autonomy of teachers within their educational spheres is crucial for fostering intrinsic motivation (Teng, 2019). Autonomy allows educators to tailor their teaching methods, explore creative pedagogical approaches, and integrate personal interests and expertise into their curriculum (Lan & Zhang, 2019). Unfortunately, in many institutions within Beijing, stringent administrative controls and rigid curricular standards limit this autonomy (Zhong & Wang, 2019). Teachers find themselves confined to predetermined syllabi and teaching methods, stifling their creative and innovative capacities and, by extension, their intrinsic motivation (Li & Sun, 2019).

Resource constraints represent another hurdle. While some universities and colleges in Beijing are well-endowed with cutting-edge technological tools and educational resources, others lag (Wu, 2019). Teachers in less resourced institutions struggle to implement innovative teaching practices due to the lack of access to necessary technologies and materials (Pan et al., 2019). This disparity not only hinders pedagogical advancement but also demotivates teachers who are keen to explore and adopt innovative teaching methodologies but find themselves constrained by resource limitations (Wang & Sun, 2019).

The recognition and support of innovative teaching efforts are also critical to sustaining teachers' intrinsic motivation (Zhang, 2019). When innovative pedagogical practices are met with indifference or resistance from institutional leadership, teachers' enthusiasm and motivation to pursue such initiatives wane (Wang & Sun, 2019). The absence of a supportive and appreciative environment can lead to a situation where teachers no longer feel compelled to go above and beyond traditional teaching methods, as their efforts seem unrewarded and undervalued (Lin, 2019).

Professional development opportunities are essential for teachers to stay abreast of pedagogical innovations and continue to find inspiration in their teaching (Ma, 2019). However, a mismatch between the available professional development programs and teachers' actual needs and interests can lead to a sense of stagnation (Huang & Huang,

2019). When professional growth opportunities are not aligned with educators' aspirations or current educational trends, they do little to enhance teachers' skills or reignite their passion for teaching, thus negatively impacting their intrinsic motivation (Bai, 2019).

Cultural and institutional norms that favor traditional teaching methods over innovative approaches can create an environment resistant to change (Zhang et al., 2019). Educators motivated to introduce new pedagogies or technologies may encounter skepticism or opposition from colleagues and administrators accustomed to conventional methods (Ding & Liu, 2019). This resistance can be disheartening for motivated teachers, leading to a gradual decline in their intrinsic motivation to innovate within their teaching practices.

Given these complexities, this research aims to dissect the influence of intrinsic motivation on the adoption of innovative teaching practices, while considering the mediating roles of teacher self-efficacy and engagement. By identifying and understanding these elements, the research seeks to contribute actionable insights for policymakers, educational leaders, and practitioners. These contributions are anticipated to support the development of strategies that enhance teacher motivation, self-efficacy, and engagement, thereby promoting the widespread adoption of innovative teaching methods. Ultimately, this study endeavors to bolster educational quality and outcomes in Beijing's universities and colleges, setting a precedent for educational reform in similar contexts globally.

2. Literature Review

2.1 Intrinsic Motivation of Teachers and Innovative Teaching Practices

The interplay between intrinsic motivation of teachers and innovative teaching practices has been a focal point in educational research.

Ginsberg & Wlodkowski (2019), Calderón et al. (2020), and Wilkesmann & Lauer (2020) collectively highlight the profound effect of intrinsic motivation on the propensity of teachers to engage in and adopt innovative teaching methodologies. Ginsberg & Wlodkowski (2019) emphasize that teachers with high intrinsic motivation, those driven by internal satisfaction, exhibit a greater willingness to explore and implement novel teaching strategies, spurred by a deep-rooted passion for teaching and a commitment to enhancing their students' learning experiences. This inclination is not merely about being open to change but entails an active pursuit of innovation, underpinned by the desire to improve the educational process. Similarly, Calderón et al. (2020) affirm that intrinsically motivated educators, characterized by deriving joy and fulfillment from their profession, are more likely to adopt student-centered teaching approaches. These methods not only create a more engaging and dynamic learning environment but also significantly boost student learning outcomes. The motivation of these teachers stems from a genuine interest in and dedication to the educational and developmental needs of their students, rather than external incentives or pressures. Their enthusiasm for experimenting with and implementing instructional methods that actively involve students in the learning process underscores a commitment to making education a more interactive experience. Furthermore, Wilkesmann & Lauer (2020) contribute to this discourse by demonstrating that teachers driven by an intrinsic passion for teaching and a continuous quest for self-improvement exhibit a higher receptivity to innovative teaching techniques. These educators view the adoption of new ideas and methods not as a challenge but as an opportunity to enrich their teaching arsenal and enhance the learning experience for their students. Their openness to innovation is essential in the ever-evolving educational landscape, suggesting that a teacher's ability to adapt to and embrace new methodologies is pivotal for effective teaching and student success. These studies enrich the understanding of how intrinsic motivation operates within the educational sphere, underscoring the complexity of its influence on teaching practices and the necessity of nurturing such motivation among educators to sustain and advance educational innovation.

2.2 Intrinsic Motivation of Teachers and Teacher Self-efficacy

The relationship between the intrinsic motivation of teachers and their self-efficacy has been a significant focus in educational psychology research.

Calkins et al. (2023), Lakanen & Isomöttönen (2023), and Affuso et al. (2023) collectively emphasize the pivotal role of intrinsic motivation in enhancing teacher self-efficacy from slightly different angles. Calkins et al. (2023) argue that personal satisfaction and a sense of accomplishment in teaching significantly bolster teachers' beliefs in their abilities, which in turn fosters a reflective practice, benefiting not only the educators themselves but also the students and the school culture at large. This view is echoed by Lakanen & Isomöttönen (2023), who focus on the direct effects of intrinsic motivation on teachers' belief in their effective teaching capabilities, classroom control, and adaptability to student needs, arguing that such motivation leads to innovative teaching and a dynamic learning environment. On the other hand, Affuso et al. (2023) drew connections between intrinsic motivation and teaching effectiveness through the lenses of autonomy, competence, and relatedness, highlighting the positive impact on classroom atmosphere and student motivation. While all three studies underscore the significance of intrinsic motivation in fostering self-efficacy, they present nuanced perspectives on how this dynamic unfolds. Calkins et al. (2023) highlight the broader implications for school culture and peer inspiration, Lakanen & Isomöttönen (2023) pinpoint the operational aspects of teaching practice, such as instructional strategies and classroom management, and Affuso et al. (2023) concentrate on the psychological underpinnings of motivation and its effect on teacher and student engagement. These studies suggest a symbiotic relationship between intrinsic motivation and self-efficacy that extends beyond the individual teacher to influence students and the entire school culture.

2.3 Teacher Self-efficacy and Innovative Teaching Practices

The influence of teacher self-efficacy on innovative teaching practices is a critical area of study in educational research.

Poulou et al. (2019), Choi et al. (2019), and Gardner et al. (2019) collectively underscore the pivotal role of teacher self-efficacy in fostering innovative teaching practices. Poulou et al. (2019) elucidate that teachers with high self-efficacy in student engagement, instructional strategies, and classroom management are more inclined to employ and thrive using innovative methods, driven by a belief in their ability to navigate the complexities of diverse classroom settings. This sentiment is echoed and further grounded in psychological theory by Choi et al. (2019), who, drawing upon Bandura's theory of self-efficacy, argue that a teacher's belief in their capabilities to orchestrate and execute various teaching actions propels them towards innovation, undeterred by the associated risks. They emphasize the role of such educators in leading the adoption of new technologies and pedagogical strategies, highlighting their role as catalysts for change. Meanwhile, Gardner et al. (2019) contribute to this discourse by illustrating how teachers with strong self-efficacy are not only more likely to experiment with new teaching practices but also serve as inspirational figures within their educational communities, thereby fostering a culture of innovation and improvement. These research findings suggest that while the studies agree regarding the overall influence of self-efficacy on educational innovation, they offer nuanced perspectives on how this trait impacts teacher behavior and the educational ecosystem.

2.4 Intrinsic Motivation of Teachers and Teacher Engagement

Exploring the impact of intrinsic motivation on teacher engagement is pivotal in understanding teacher behavior and effectiveness.

The interplay between intrinsic motivation factors and teacher engagement is a complex domain, with scholars like Bukhari et al. (2023), Chan et al. (2023), and Khun-Inkeeree et al. (2022) providing insightful analyses from various perspectives. Bukhari et al. (2023) emphasize the significance of autonomy, positing that it not only fosters a more dynamic and personalized approach to teaching but also cultivates a supportive and collaborative school culture.

This view of autonomy as a catalyst for both individual and collective engagement in educational settings echoes through their findings. Conversely, Chan et al. (2023) pivot towards the competence aspect of intrinsic motivation, arguing that a teacher's sense of skill and efficacy is paramount in elevating their engagement levels. They highlight how this competence fuels a positive feedback loop, wherein teachers' enthusiasm and innovation in instructional strategies enhance the learning environment, further validating their sense of professional worth and engagement. Meanwhile, Khun-Inkeeree et al. (2022) underscore the importance of relatedness, illustrating how deep connections with students and peers can enrich the teaching experience, foster a collaborative ethos, and ultimately heighten engagement. These viewpoints underscore the complexity of designing and implementing educational policies and practices that effectively harness these motivational drivers to enhance teacher engagement and, by extension, educational outcomes.

2.5 Teacher Engagement and Innovative Teaching Practices

The positive impact of teacher engagement on innovative teaching practices is a well-researched topic in educational psychology.

Jacobson & Cole (2020), Ji (2021), and Hosseini & Haghghi Shirazi (2021) collectively illuminate the multifaceted nature of teacher engagement and its pivotal role in fostering innovative teaching practices. Jacobson & Cole (2020) elucidate the criticality of cognitive engagement, portraying teachers who immerse themselves in reflective practices and perpetual inquiry as more predisposed to embracing pedagogical innovations. This form of engagement is characterized by a relentless pursuit of enhancement, where teachers are proactive in updating their instructional strategies through professional development endeavors, thereby augmenting their teaching efficacy and creativity. In a complementary vein, Ji (2021) explores the dimension of social engagement with students, suggesting that teachers who forge robust connections with their learners are better equipped to customize their teaching approaches. These educators, attuned to their students' learning preferences and obstacles, are depicted as more adept at adapting their methods to optimize student engagement and achievement. Similarly, Hosseini & Haghghi Shirazi (2021) investigate the sphere of collegial social engagement, positing that teachers involved in professional communities are more likely to be innovators in education. Through collaboration, these teachers enhance their instructional repertoire, benefiting from the collective wisdom and support of their peers. While all studies underscore the significance of engagement in promoting innovative teaching, they diverge in their focal points—cognitive engagement with one's practice (Jacobson & Cole, 2020), social engagement with students (Ji, 2021), and collegial engagement (Hosseini & Haghghi Shirazi, 2021). These studies collectively advocate for the positive influence of teacher engagement on innovation.

3. Research Methodology

3.1 Research Design

This study employs a quantitative research method to examine the influence of intrinsic motivation on innovative teaching practices among teachers, considering the mediating effects of teacher self-efficacy and engagement in universities and colleges in Beijing, China. Quantitative research, which involves the collection and analysis of numerical data, is suitable for this study as it allows for the measurement and analysis of variables to identify patterns, relationships, and causal connections (Jamieson et al., 2023). This method is chosen for several reasons. Firstly, quantitative research can handle large datasets effectively, making it ideal for analyzing the diverse teaching populations in Beijing's higher education institutions. The ability to generalize findings from a sizable sample to a broader population is critical for understanding widespread educational phenomena (Kotronoulas et al., 2023). Secondly, the precision and objectivity offered by statistical analysis align with the research objectives of quantifying the extent to which intrinsic motivation and self-efficacy influence innovative teaching practices. Using established statistical methods facilitates the validation of hypothesized relationships among variables (Fischer et al., 2023),

providing a clear framework for testing the mediation effects of teacher self-efficacy and engagement.

Quantitative methods are crucial in educational research for making reliable inferences about educational phenomena (Siripipatthanakul et al., 2023). For instance, Kilag et al. (2023) highlighted the power of quantitative analysis in identifying effective teaching practices, while Aikens & Kulacki's (2023) exploration of self-efficacy provided robust models for understanding motivational processes in educational settings. These foundational works emphasize the value of quantitative analysis in producing generalizable and actionable insights, especially when investigating complex constructs like motivation, self-efficacy, and engagement.

3.2 Research Population

The research population comprises teaching staff from 20 diverse higher education institutions in Beijing, China, encompassing prestigious universities and specialized colleges. This selection reflects the rich educational landscape of Beijing. The total population of faculty members across these institutions is approximately 34,290. This broad base ensures that the study captures a significant portion of the teaching staff in Beijing's higher education system, providing a robust foundation for exploring the dynamics of intrinsic motivation, teacher self-efficacy, teacher engagement, and their impact on innovative teaching practices.

3.3 Sampling Procedure

The study targets a sample size of 500 teachers, determined based on statistical considerations for a robust analysis. A random sampling method will be employed to ensure representativeness and mitigate selection bias (Berndt, 2020). This approach ensures that every member of the target population has an equal chance of being included, supporting the generalization of the results (Stratton, 2021). The sampling process will involve compiling a comprehensive list of academic teaching staff from the selected institutions. From this list, 500 teachers will be randomly selected using statistical software, ensuring diversity in institution, discipline, and teaching experience.

3.4 Research Instrument

The research instrument is a structured questionnaire divided into sections corresponding to the study's key variables: intrinsic motivation, teacher self-efficacy, teacher engagement, and innovative teaching practices. It includes demographic questions and uses a Likert-9 scale to capture varying degrees of agreement or disagreement with each statement. The questionnaire items are adapted from established scales to ensure relevance and accuracy in measuring the study variables. This structured approach ensures comprehensive data collection and reliability.

3.5 Data Analysis

Descriptive Statistical Analysis: Descriptive statistics will be used to compute means, standard deviations, and frequencies for the key variables and summarize demographic information, providing a basic understanding of the data.

Confirmatory Factor Analysis (CFA): CFA will examine the measurement model for each latent variable, verifying the hypothesized factor structure and ensuring that each observed variable reliably measures its corresponding latent construct.

Structural Equation Modeling (SEM): SEM will test the hypothesized relationships between the latent variables, examining both direct and indirect effects (mediation) to understand the dynamics among intrinsic motivation, self-efficacy, engagement, and innovative teaching practices.

4. Research Findings and Discussion

The study investigated the influence of intrinsic motivation of teachers (IMT) on innovative teaching practices (ITP) with the mediating effect of teacher self-efficacy (TSE) and teacher engagement (TE) in Beijing colleges and

universities via SEM path analysis with the following analysis results shown in **Figure 1**.

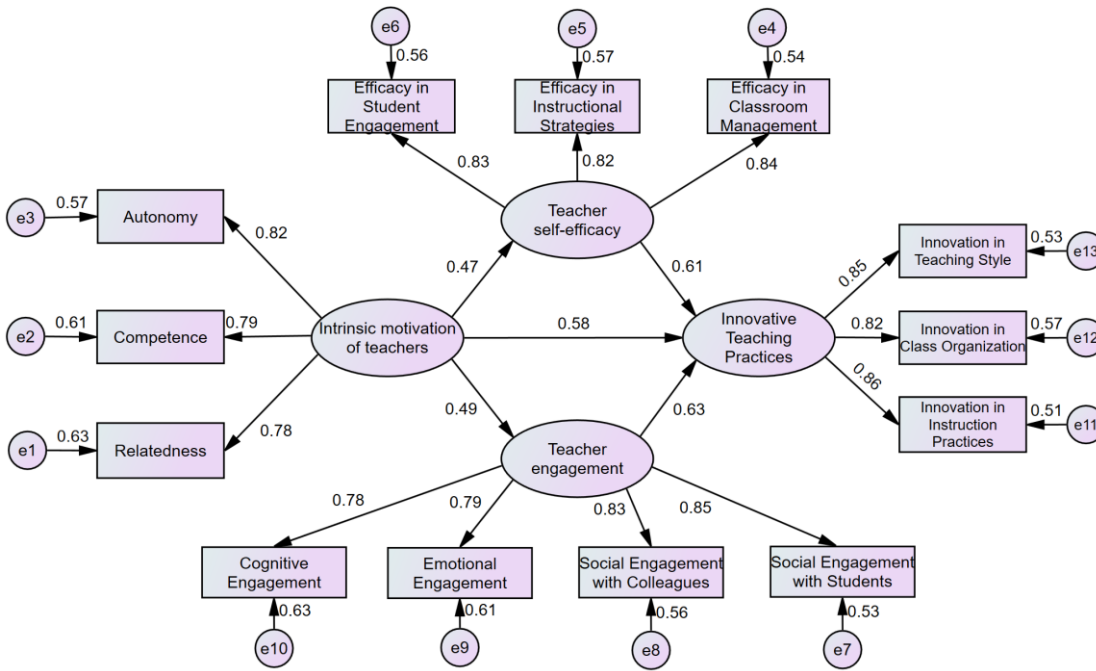


Figure 1: Path analysis results

The study used Bootstrap method to explore the mediating effect of teacher self-efficacy and teacher engagement with analysis results shown in **Table 1**.

Table 1: Mediating effect results of teacher self-efficacy and teacher engagement

Standard effect	Path	Effect coefficient	95% confidence interval		S.E.	P-value	Results
			Lower	Upper			
Total effect	IMT--->ITP	0.869	0.816	0.922	0.027	***	Mediating effect
Direct effect	IMT--->ITP	0.582	0.535	0.629	0.024	***	
Indirect effect	IMT-->TSE---> ITP	0.287	0.246	0.328	0.021	***	
Total effect	IMT--->ITP	0.887	0.836	0.938	0.026	***	Mediating effect
Direct effect	IMT--->ITP	0.582	0.535	0.629	0.024	***	
Indirect effect	IMT-->TE---> ITP	0.305	0.262	0.348	0.022	***	

Summarizing all data analysis results of path analysis and mediating effect analysis, the study concluded with the following findings:

4.1 Influence of Intrinsic Motivation on Innovative Teaching Practices

The results indicate a significant positive relationship between intrinsic motivation and the adoption of innovative teaching practices among teachers in Beijing's colleges and universities. Teachers who exhibit high levels of intrinsic motivation, characterized by a genuine interest in and passion for teaching, are more likely to incorporate innovative methods such as blended learning, flipped classrooms, and project-based learning into their pedagogical repertoire. This finding aligns with previous studies, such as those by Ginsberg & Wlodkowski (2019), which suggest that intrinsic motivation can significantly enhance a teacher's willingness to engage in and adopt new teaching methodologies. This relationship underscores the importance of intrinsic rewards and personal satisfaction in fostering educational innovation.

4.2 Influence of Intrinsic Motivation on Teacher Self-efficacy

Intrinsic motivation was also found to have a positive impact on teacher self-efficacy. Teachers who are intrinsically motivated not only feel more competent in their teaching abilities but also display greater confidence in their ability to influence student learning and manage classrooms effectively. This increased self-efficacy further contributes to their readiness to experiment with and implement innovative teaching practices. The results support the theoretical framework proposed by Bandura (1997), which emphasizes the role of self-efficacy in achieving higher levels of teaching performance and adopting new pedagogies.

4.3 Relationship Between Teacher Self-Efficacy and Innovative Teaching Practices

Teacher self-efficacy was found to positively influence innovative teaching practices. Teachers with high self-efficacy are more likely to take risks and embrace pedagogical innovations, driven by a belief in their capacity to effectively implement these methods and positively impact student outcomes. This finding corroborates research by Choi et al. (2019), which highlighted the critical role of self-efficacy in promoting educational innovation. It suggests that enhancing teacher self-efficacy could be a key strategy in encouraging the adoption of innovative teaching practices.

4.4 Influence of Intrinsic Motivation on Teacher Engagement

Further analysis revealed that intrinsic motivation significantly contributes to teacher engagement. Engaged teachers, characterized by high levels of energy, enthusiasm, and commitment to their teaching roles, are more inclined to pursue innovative and interactive teaching methods. This engagement not only enhances the teaching and learning experience but also fosters a more vibrant and responsive educational environment. These findings align with the work of Jacobson & Cole (2020), which emphasized the importance of teacher engagement in fostering a culture of innovation and continuous improvement.

4.5 Relationship Between Teacher Engagement and Innovative Teaching Practices

The study also confirmed a positive relationship between teacher engagement and innovative teaching practices. Teachers who are actively engaged in their professional roles tend to embrace and champion new teaching techniques, thereby contributing to a dynamic and innovative educational setting. This supports the notion that teacher engagement is crucial in motivating teachers to go beyond traditional teaching methods and explore new pedagogical possibilities.

4.6 Mediating Role of Teacher Self-efficacy

The analysis provided evidence that teacher self-efficacy mediates the relationship between intrinsic motivation and innovative teaching practices. This mediation suggests that while intrinsic motivation directly influences the adoption of innovative practices, it also enhances teacher self-efficacy, which in turn encourages the application of these practices. Thus, strengthening teacher self-efficacy could amplify the impact of intrinsic motivation on educational innovation.

4.7 Mediating Role of Teacher Engagement

Similarly, teacher engagement was found to play a mediating role in the relationship between intrinsic motivation and innovative teaching practices. This mediation indicates that intrinsic motivation not only affects teaching practices directly but also through its impact on teacher engagement. Enhancing teacher engagement could therefore be a viable approach to foster a more innovative educational atmosphere.

5. Conclusion

This study delves into the intricate dynamics between intrinsic motivation, teacher self-efficacy, teacher engagement, and innovative teaching practices among educators in Beijing's higher education institutions. The findings highlight the significant positive relationship between intrinsic motivation and the adoption of innovative teaching methods, underscoring the crucial role of internal satisfaction and passion in driving educational innovation. Teachers who exhibit high levels of intrinsic motivation are more likely to engage in and implement novel teaching strategies such as blended learning, flipped classrooms, and project-based learning, thereby enhancing the learning experience and outcomes for students. The study also confirms the positive impact of intrinsic motivation on teacher self-efficacy, revealing that intrinsically motivated teachers feel more competent and confident in their teaching abilities. This increased self-efficacy, in turn, fosters a greater willingness to experiment with and embrace innovative teaching practices. Furthermore, the research highlights the mediating roles of teacher self-efficacy and teacher engagement in the relationship between intrinsic motivation and innovative teaching practices. Teacher self-efficacy not only enhances the direct influence of intrinsic motivation on the adoption of new pedagogical methods but also serves as a critical factor in empowering teachers to take risks and innovate in their teaching approaches. Similarly, teacher engagement, characterized by high levels of energy, enthusiasm, and commitment, mediates the effect of intrinsic motivation on innovative practices, suggesting that engaged teachers are more inclined to explore and implement interactive and dynamic teaching methods. These findings offer valuable insights for policymakers, educational leaders, and practitioners seeking to foster a culture of innovation within higher education. By emphasizing the importance of intrinsic motivation and creating supportive environments that enhance teacher self-efficacy and engagement, educational institutions can promote the widespread adoption of innovative teaching practices, ultimately leading to improved educational outcomes and better preparation of students for the challenges of the modern world.

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