HOW THE INTERNAL MOTIVATION AFFECTS THE FACULTY PROFESSIONAL DEVELOPMENT? - ANALYSIS BASED ON THE SEM

Li Liang[1], Lee Bih Ni[2*]

[1] Faculty of Education and Sports Studies, University Malaysia Sabah, Malaysia
    Email: 1178751494@qq.com
[2] Faculty of Education and Sports Studies, University Malaysia Sabah, Malaysia
    Email: leebihni@ums.edu.my
[*] Corresponding Author

Article Info:

Abstract:

Based on the perspective of self-determination theory, this study explores the influence mechanism of internal motivation on the faculty professional development, focusing on the three dimensions of identity motivation, social motivation and innovation motivation. Through the establishment of structural equation model (SEM), the empirical analysis of the questionnaire survey of 507 teachers in Guangxi Province, China, found that internal motivation plays an important role in promoting the professional development of teachers. By testing the structural equation model, the standardized path coefficient of identity motivation (IDM) was 0.426, social motivation (SOM) was 0.207, and the path coefficient of innovation motivation (INN) was 0.471, and each path reached high statistical significance (p <0.001). These data not only validate the hypotheses proposed in this study, but also provide strong empirical support for exploring the internal faculty motivation and their impact on professional growth.

Keywords:

Introduction

At present, the global higher education is facing multiple challenges such as internationalization, knowledge economy and technological revolution. As the key force of knowledge innovation and talent training, the faculty professional development has

increasingly garnered extensive attention from academic circles and university administrators. Faculty professional development not only covers teaching, scientific research and academic exchanges, but also is directly related to the overall quality of running schools and social service ability of universities (Wang, 2016). In this context, how to stimulate teachers' inner potential, mobilize their spontaneity, and ensure sustainability has become a crucial topic for enhancing faculty professional development.

For a long time, domestic and foreign studies have primarily focused on the role of external motivators in teacher development, such as salary and professional title promotion. However, these factors can lead to short-term behaviors and may lose their effectiveness over time in complex educational environments (Schaufeli & Bakker, 2004). For instance, external motivation are often prone to trigger short-term behaviors, and their effects may gradually weaken in long-term, complex educational environments. In contrast, internal motivation, as an important factor driving teachers' internal motivation, can encourage teachers to continuously invest in teaching and scientific research activities, and enhance the internal motivation of individual learning and innovation (Deci & Ryan, 2000; Ryan & Deci, 2000). Related studies have shown that internal motivation not only contribute to improving individual self-efficacy but also improve job satisfaction and long-term job performance (Gagne & Deci, 2005).

In recent years, scholars have gradually realized that internal motivations are not a single dimension, but should be subdivided into multiple constructs to more fully understand their impact on professional development. Previous studies have explored the internal motivation of teachers from different perspectives, such as recognition of teaching concepts and school culture, social interaction within teaching teams, the pursuit of innovation and change, and the desire for their own career achievement (Tschannen-Moran & Hoy, 2001; Klassen & Chiu, 2010). Studies have shown that a teacher's professional identity and commitment to their educational mission can greatly influence their teaching effectiveness. Moreover, social support acts as a significant regulator for teachers in managing occupational stress. For instance, Klassen and Chiu (2010) highlighted in their research that these factors play a crucial role in the teaching profession. In line with Skaalvik and Skaalvik's (2019) findings, research indicates that teachers' engagement in innovative teaching practices can significantly enhance students' creative potential., and further trantranslate it into actual teaching reform and scientific research results.

Based on the above theory and empirical research, this paper subdivides the internal motivation into three dimensions: identity motivation, social motivation, and innovation motivation. Identification motivation underscores teachers' intrinsic alignment with educational philosophy, school culture, and educational mission, fostering a stable professional belief and enduring development motivation (Deci & Ryan, 2000). This is supported by studies indicating that factors such as educational background, professional identity, and institutional policies significantly influence faculty professional development and motivation. Social motivation emphasizes the emotional support and information sharing teachers gain through teamwork, academic research, and cross-border communication, thereby mitigating work pressure and facilitating ongoing enhancements in teaching and research methodologies (Gagne & Deci, 2005). Innovation motivation encapsulates teachers' aspiration to explore subject frontiers, adopt new teaching modes, and achieve scientific research breakthroughs, with its internal driving force considered pivotalortant factor to promote the reform of university education (Klassen & Chiu, 2010).

While existing studies have demonstrated the positive impact of internal motivation on individual behavior and work performance, there remain gaps in analyzing its specific influence mechanism on faculty professional development, particularly from a multidimensional perspective tailored to university teachers. Some scholars believe that the internal motivation level of teachers is closely related to their work engagement, teaching satisfaction, and career development (Bakker & Demerouti, 2007), while others suggest that the interaction between internal motivation, external pressure, and resource allocation may complicate this relationship (Wang, 2016). Therefore, it is necessary to construct a theoretical model covering multi-dimensional internal motivation and use the structural equation model (SEM) to conduct a systematic empirical analysis of how multi-dimensional internal motivation works together in faculty professional development.

It is precisely within the context of this theoretical and practical need. In this paper, the data of in-service teachers in many universities in a certain province are collected, and the confirmatory factor analysis and structural equation model methods are used to test the effects of identification motivation, social motivation and innovation motivation on faculty professional development respectively. The results can not only enrich the application of self-determination theory in the field of higher education, but also provide empirical basis and strategic suggestions for universities to establish a differentiated and personalized teacher motivation mechanism.

Literature Review

Overview of the Internal Motivation Theory
Internal motivation is the intrinsic force that drives individuals to actively engage and persistently participate in activities due to their inherent interest, sense of autonomy, and recognition of the activity's inherent value. The Self-Determination Theory (SDT), as proposed by Deci and Ryan (2000), posits that intrinsic motivation is fueled by the fulfillment of three basic psychological needs: autonomy, competence, and relatedness. At the same time, the follow-up study between Ryan and Deci (2000) further emphasized the lasting positive effects of internal motivation on learning, innovation and work performance. Gagne and Deci (2005) have expanded Self-Determination Theory (SDT) to work scenarios, emphasizing that within a supportive organizational environment, individuals are more likely to experience autonomy and satisfaction, which in turn fosters sustained internal motivation. At the same time, some scholars began to try to subdivide the internal motivation into multiple dimensions, such as teachers' identification of the educational mission and school culture (identity motivation), the cooperation and interaction between teachers (social motivation), and the pursuit of new knowledge exploration and teaching reform (innovation motivation). These subdivided dimensions not only enrich the connotation of internal motivation, but also provide a theoretical basis for the subsequent discussion of its specific role in faculty professional development.

Research Status of the Faculty Professional Development
Faculty professional development is a complex process involving multiple levels and dimensions. Its content encompasses not only tangible indicators like teaching skills, scientific research capabilities, and subject construction, but also intangible aspects such as the clarification of educational concepts, the reevaluation of professional beliefs, and the enhancement of lifelong learning abilities. Avalos (2011), in a comprehensive review of faculty professional development research over the past decade, Avalos (2011) highlighted the significance of effective teacher learning and professional growth strategies. Training and

development programs should concentrate on updating knowledge, refining teaching practices, and transforming teachers' inherent beliefs. At the same time, Darling-Hammond, Hyler and Gardner (2017) emphasized in 《Effective Teacher Professional Development》 that faculty professional development should not be limited to skills teaching, but needs to promote the role shift from "knowledge imitator" to "learning promoter" through practical feedback, peer assistance and continuous career support.

Internationally, globalization of education and information technology is rapidly advancing, profoundly transforming the modes and paths of faculty professional development. In recent years, Pasi Sahlberg, OECD and other organizations have pointed out through reports on the status of global teachers that the fruitful faculty professional development model should focus on stimulating their internal motivation and build a support system featuring cooperation, feedback and continuous learning. At the same time, the study of Skaalvik and Skaalvik (2019) focused on the relationship between work environment and teachers' work motivation, and found that when teachers work in a supportive school environment, internal motivation levels tended to be higher, and were significantly positively associated with teaching efficiency and career satisfaction.

In China, with the continuous improvement of the "Double First Class" construction and the quality requirements of higher education, an increasing amount of research is now directing its focus towards fostering teachers' professional growth via internal motivation. Although some domestic literature still draws on mature international achievements in theoretical frameworks and empirical methods, it is generally recognized that teachers' internal motivation has a significant positive impact on their work performance. professional development. This positive correlation not only manifests in enhanced teaching quality and research productivity, but also significantly contributes to mitigating teacher burnout and bolstering self-efficacy. However, due to significant differences in research evaluation, performance assessment, and resource allocation among different universities, how to scientifically construct a teacher motivation mechanism that is suitable for local realities remains an urgent problem to be solved.

The Relationship between Internal Motivation and the Faculty Professional Development

A large number of empirical studies show that internal motivation has significant positive effects on faculty professional development. The study by Klassen and Chiu (2010) found a positive correlation between a high level of internal motivation and teachers' teaching self-efficacy, job satisfaction, and classroom management abilities. Such studies show that if teachers can get emotional satisfaction and a sense of achievement from their own work, they will be more actively involved in teaching and scientific research, so as to promote the continuous progress and improvement of their own majors. Further research (Skaalvik & Skaalvik, 2019) points out that when teachers face teaching challenges and research pressure, if they can get support from the school and peers, it is easier to experience work achievement and emotional satisfaction, so as to maintain a high internal motivation, help to improve work performance and reduce job burnout.

In addition, the organizational environment plays a moderating role between internal motivation and professional development. Gagné and Deci (2005) clearly assert that by establishing a highly autonomous and emotionally supportive work environment, school organizations can significantly enhance teachers' internal motivation. Darling Hammond et al.'s report (2017) further underscores the impact of factors including school leadership style,

resource allocation, and evaluation systems on teachers' internal motivation levels, indirectly promoting their professional growth. In other words, a good school culture and support system can not only directly improve teachers' job satisfaction, but also drive their progress in teaching, research, and other aspects through internal motivation.

However, despite the widespread recognition of the important role of internal motivation in faculty professional development in existing literature, there are still some research gaps: on the one hand, there is a lack of systematic empirical evidence on how the various dimensions of teachers' internal motivation synergistically affect their professional growth process; On the other hand, most studies mainly focus on the overall internal motivation, and the differentiation and mechanism of specific constructs (such as identity motivation, socialization motivation, and innovation motivation) are not discussed in depth enough. Therefore, combining structural equation modeling to quantitatively analyze the relationship between various dimensions of internal motivation and faculty professional development can not only supplement the shortcomings of existing literature at the micro level, furthermore, it furnishes empirical evidence that enables universities to devise more tailored teacher motivation strategies.

Theoretical Model and Hypothesis Construction

Theoretical Model Construction
Based on the self-determination theory and the aforementioned literature review, we constructed the following structural model(see Figure 1）：
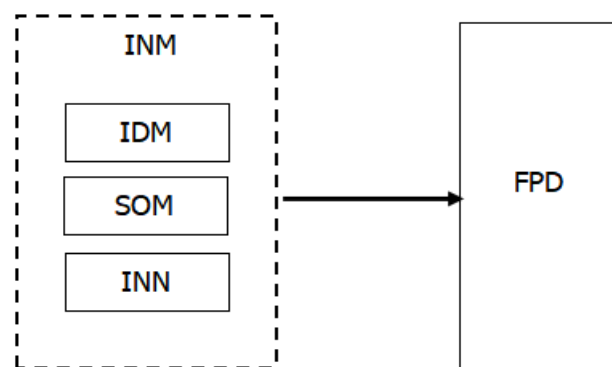
Note: IDM=Identity Motivation, SOM=Social Motivation,
INN=Innovation Motivation, INM=Internal Motivation,
FPD=Faculty Professional Development

Figure 1: Theoretical Model Of Internal Motivation For Faculty Professional Development

In the model, "Internal Motivation" as exogenous latent variable, is composed of three dimensions, while "Faculty Professional Development" as endogenous latent variable, is measured by teaching ability, scientific research ability and social service ability.

Research Hypothesis

The internal motivational factors for faculty professional development encompass professional identity, a sense of responsibility, ability enhancement, and interpersonal relationships, as evidenced by studies across various educational sectors. Drawing upon pertinent research findings, the article subsequently categorizes the internal motivational facets of faculty professional development into identity motivation, social motivation, and innovation motivation.

Identity motivation encompasses the self-drive stemming from faculty members' acknowledgment of their individual profession, discipline, and institutional affiliation. Faculty identity is essential for educators to navigate the complexities of social change and to foster a sustained momentum in their professional development. This identity not only equips teachers to effectively manage the evolving educational landscape but also offers a valuable framework for researchers to explore strategies that support faculty in building robust career advancement plans. Research by Mone & London (2018) indicates a positive correlation between employee performance and engagement, aligning with findings from various studies that suggest engaged employees contribute to higher organizational performance. Positive attitudes toward work can promote organizational growth and success (AlMehrzi et al., 2016). The higher the level of professional identity of faculty, the more energy they will devote to teaching and research. Faculty professional identity demonstrates a notable positive link with their professional growth and advancement (Gao, 2018). Identity motivation is a psychological process, and its essence is the process of effectively mobilizing faculty work enthusiasm.

Social motivation constitutes a pivotal impetus for faculty professional advancement, manifesting in their proactive engagement in external communications aimed at fostering their professional growth. Mallah F. (2019) posited that social motivation has the potential to enhance individuals' communication proficiency and overall well-being. Ryan (2018) discovered that amicable behavior amongst faculty serves as a key trait of effective classroom dynamics, with those who exhibit friendliness, rigor, and considerateness performing more effectively. Interactive support is a key factor that affects the engagement and satisfaction of faculty in professional development. The interpersonal and communication abilities of faculty significantly affect the improvement of students' abilities and levels (Bragg et al., 2021). Harmonious interpersonal relationships motivate faculty to seek development, thereby bringing lasting impetus to faculty professional development.

Innovation motivation pertains to the pursuit of novelty and the application of fresh methodologies in addressing problems. Employees adept at adapting to changes can contribute significantly to an organization's survival and growth (Shin et al., 2012). Research has found that innovation motivation have a significant impact on education and teaching. Innovation fosters continuous learning and development among faculty in a stable environment, holding immense value for their lifelong growth (Morichika, 2015). More faculty members are more willing to innovate in teaching methods and research methods to improve work performance. Therefore, more university leaders are trying to improve their faculty development level through innovation motivation (Nellitawati, 2018).

Therefore, the following research hypotheses are proposed:
H1: Identity motivation is positively correlated with faculty professional development.
H2: Social motivation is positively correlated with faculty professional development.
H3: Innovation motivation is positively correlated with faculty professional development.

Research Method

Variable Measurement and the Questionnaire Design

This study aimed to explore the effects of the influence of internal motivation dimensions on faculty professional development, to collect data on various aspects of identity, social and innovation motivation through questionnaires, and to examine how these variables influence faculty professional development. After determining the objectives of the study, the author identified by referring to the mature scale of Deci and Ryan (2000), Gagne and Deci (2005) and Klassen and Chiu (2010), and identified the connotation of relevant variables. Based on this, the first draft design of the questionnaire is divided into three main parts: basic information, internal motivation measurement and faculty professional development measurement. The basic information mainly collects gender, age, title, teaching age and educational background to provide basis for subsequent control analysis from three aspects of internal motivation and the faculty professional development measures the teaching ability, scientific research ability and social service ability. Each question used a five-level Likert scale (1= very disagree to 5= very agree).

After the first draft of the questionnaire was completed, we invited several experts in the field of higher education and psychology to review the questionnaire. The experts suggested revisions to the topic content, logical structure, and wording to ensure the questionnaire's theoretical coherence and practical relevance. Subsequently, the research team selected 100 in-service teachers in the target sample for trial adjustment, and collected feedback on the completion, understanding difficulty and response time through the pre-survey. Following the preliminary statistical analysis of the pre-adjusted data, which encompassed Cronbach's α reliability testing and exploratory factor analysis, items featuring unclear statements or overlapping explanations underwent revision and deletion, ultimately culminating in the formation of a formal questionnaire.

Data Sources and Samples

In this study, in-service teachers from various universities in Guangxi of china were randomly selected for the questionnaire survey. To ensure the objectivity and scientific validity of the survey results, we combined random sampling with stratified sampling, ensuring a diverse range of university teachers were represented, thereby enhancing the study's external validity. The questionnaire was generated and distributed through the online survey platform "Questionnaire Star" (www.wjx.cn). The researchers distributed links to questionnaires generated by "questionnaire Star" to respondents through communication tools such as wechat, QQ or email. The respondents filled out the questionnaire online and submitted it. All data can be accessed online through the 'Questionnaire Star' backend at www.wjx.cn. The survey process strictly followed the research ethics requirements, with all respondents participating voluntarily, and promising to use the data only for academic research, to ensure the authenticity and confidentiality of the data. In order to ensure the representativeness of the sample, we distributed 550 questionnaires, and 507 valid samples were obtained after eliminating invalid questionnaires, with an effective recovery rate of 92.2%.

Data Analysis

Sample Characteristics

In this survey, 507 people were included, with 30.8% being male and 69.2% female. The age distribution is mainly concentrated in the 41-50 age group at 40.2%, followed by the 31-40 age

group at 37.7%. Monthly income ranges from 5,000 to 8,000 yuan and 8,000 to 10,000 yuan, accounting for 36.7% and 36.3%, respectively. Educational background is predominantly postgraduate with 78.5%, followed by bachelor's degree at 21.1%. The highest degree is master's with 55.8%, followed by doctoral degree at 29.2%, and bachelor's degree at 13.2%. The most common teaching experience is 11-20 years, at 39.1%, followed by 6-10 years, at 28%. Among them, 44% hold the title of lecturer, and 31.8% are associate professors. 36.5% serve as master's thesis advisors, and 6.1% as doctoral thesis advisors.

Reliability Analysis and Confirmatory Factor Analysis

In this study, Cronbach's alpha was utilized as a measure of reliability analysis, with values between 0.7 and 0.98 indicating high reliability. Analysis by running SPSS24.0, the clone Bach alpha (Cronbach's Alpha) coefficient was above 0.8, indicating that the questionnaire has high internal consistency reliability (see Table 1).

Table 1: Reliability Analysis Of Formal Survey Samples (n = 507)

Scale	Dimension	Clone Bach Alpha	Number of items
INM	IDM	0.907	5
	SOM	0.875	5
	INN	0.850	5
FDP	FTC	0.873	5
	FRC	0.893	5
	FSC	0.899	5

Measurement Model Test

Following the execution of a confirmatory factor analysis using AMOS24.0, the results indicated robust convergent and discriminant validity of the measurement model. Specifically, all items exhibited standardized factor loadings above 0.60, composite reliability surpassed 0.80, and the average variance extraction (AVE) exceeded the recommended threshold of 0.50, as detailed in Table 2 and Table 3.

Table 2: Validity Test of the Internal Motivation (n = 507)

Dimension	Question items	Factor load capacity	Reliability coefficient	measurement error	（C.R）	（AVE）
IDM	IDM1	0.79	0.62	0.38		
	IDM2	0.81	0.66	0.34		
	IDM3	0.75	0.56	0.44	0.89	0.61
	IDM4	0.79	0.62	0.38		
	IDM5	0.76	0.57	0.43		
SOM	SOM1	0.76	0.58	0.42		
	SOM2	0.75	0.56	0.44		
	SOM3	0.83	0.69	0.31	0.88	0.60
	SOM4	0.79	0.62	0.38		
	SOM5	0.73	0.53	0.47		
INN	INN1	0.78	0.60	0.40		
	INN2	0.75	0.56	0.44	0.86	0.55
	INN3	0.56	0.31	0.69		

INN4	0.83	0.69	0.31
INN5	0.77	0.59	0.41

Table 3: Validity Test of the Faculty Professional Development (n = 507)

Dimension	Question items	Factor load capacity	Reliability coefficient	measurement error	（C.R）	（AVE）
FTC	FTC1	0.77	0.59	0.41		
	FTC2	0.71	0.50	0.50		
	FTC3	0.73	0.53	0.47	0.87	0.57
	FTC4	0.75	0.57	0.43		
	FTC5	0.80	0.64	0.36		
FRC	FRC1	0.77	0.59	0.41		
	FRC2	0.74	0.55	0.45		
	FRC3	0.81	0.66	0.34	0.89	0.63
	FRC4	0.84	0.70	0.30		
	FRC5	0.80	0.64	0.36		
FSC	FSC1	0.83	0.69	0.31		
	FSC2	0.79	0.62	0.38		
	FSC3	0.80	0.64	0.36	0.89	0.63
	FSC4	0.77	0.60	0.40		
	FSC5	0.77	0.59	0.41		

Structural Model Test

By constructing a standardized path model of each dimension of internal motivation, the correlation of identification motivation, social motivation and innovation motivation on the faculty professional development is analyzed, and the influence path of each dimension of internal motivation on the faculty professional development is analyzed.

By running AMOS24.0 software, the results of structural equation model analysis show that all dimensions of internal motivation have a positive influence on the faculty professional development. The specific path coefficient and significance level are shown in the table below (see Table 4).

Table 4: Estimation and Statistical Testing of Standardized Path Coefficients in Theoretical Models

			Estimate	C.R.	P	Inspection results
FDP	<---	IDM	0.426	8.666	***	accept
FDP	<---	SOM	0.207	4.614	***	accept
FDP	<---	INN	0.471	8.475	***	accept

The impact of IDM on FDP is significant, with a P<0.001 and an impact coefficient of 0.426, indicating a significant positive impact. The higher the IDM, the significantly higher the FDP. It implies a proportional rise of 0.426 in FDP for every unit increase in IDM. Research indicates that the extent to which teachers embrace the school's educational philosophy and culture significantly enhances their professional development. Enhancing teachers' internal sense of identity can furtherote them to invest more energy in teaching and scientific research and seek long-term development.

SOM has a significant impact on FDP, with a P<0.001 and an impact coefficient of 0.207, indicating a significant positive impact. The higher the SOM is, the significantly higher the FDP. This implies that with every unit increase in SOM, FDP increases significantly by 0.207 units. This shows that the emotional support and feedback obtained by teachers in teamwork and communication have a significant promotion effect on their professional growth. Good social networks provide teachers with valuable resources for improvement.nformation sharing and stress relief, thus improving the overall level of development.

The impact of INN on FDP is significant, with P<0.001 and an impact coefficient of 0.471, indicating a significant positive impact. The higher the INN is, the significantly higher the FDP. Studies have shown that for every unit increase in INN, there is a significant positive correlation with an increase in FDP, with a reported increase of 0.471. This reflects teachers' desire to explore new knowledge and new methods, which is closely related to the actual teaching reform and scientific research breakthrough, and is an important driving force to promote the improvement of professional ability.

The above results support the hypothesis of H1~H3, indicating that each internal motivation dimension significantly promotes the faculty professional development, in which the influence effect of innovation motivation is more significant, followed by identity motivation, while the influence of social motivation is slightly lower.

Conclusion

The results of the empirical analysis of this study indicate that internal motivation plays a significant role in promoting faculty professional development. In the structural equation model analysis, the standardized path coefficients for identity motivation (IDM), social motivation (SOM), and innovation motivation (INN) were found to be 0.426, 0.207, and 0.471, respectively. Each path demonstrated high statistical significance (p <0.001), indicating that despite potentially low correlation coefficients between variables, the direct effects of these motivational factors on the model were robust. These data not only validate the hypotheses proposed in this study, but also provide strong empirical support for exploring the internal faculty motivation and their impact on professional growth.

First, from a theoretical perspective, this study is based on self-determination theory (SDT) to explore the impact of teacher internal motivation on professional development. According to the Self-Determination Theory (SDT), fostering an individual's intrinsic motivation is closely linked to the fulfillment of three fundamental psychological needs: autonomy, competence, and relatedness. Autonomy refers to the desire for self-directed choices and decisions; competence signifies the need to feel capable in one's activities; and relatedness pertains to the need for a sense of belonging and connection with others. When these needs are met, individuals are more likely to exhibit intrinsic motivation, which drives them to engage in activities with greater persistence and quality. The research findings indicate that teachers' alignment with the

school's educational philosophy and culture (identification motivation) plays a positive role in advancing their professional development, which is consistent with the theory of Deci and Ryan (2000). After identifying with the educational mission of the school, teachers can often enhance self-efficacy, enhance teaching investment and scientific research enthusiasm, so as to realize the dual personal and professional growth.

Secondly, social motivation, as the emotional support and information circulation obtained by teachers in establishing effective interaction with peers and students, also has a significant effect in promoting professional development. Although the standardized coefficient of social motivation (0.207) is slightly lower than other dimensions, its statistical significance still shows that their confusion and isolation can be effectively alleviated when teachers receive positive feedback in collaboration and communication. This result is consistent with the conclusion of Gagne and Deci (2005) on the role of supportive environment, emphasizing the importance of good social relationships in improving job satisfaction and promoting professional development.

More prominently, innovation motivation have the greatest impact on faculty professional development, with a standardized path coefficient of 0.471. The results indicate that teachers' exploration and application of new knowledge, new teaching methodologies, and scientific and technological tools have emerged as the primary impetus for enhancing their professional competence. At present, higher education is in constant change, and the application of information and digital technology in the classroom requires teachers to constantly update and iterate the teaching means. Innovation motivation serves as a pivotal factor in encouraging teachers to actively embrace educational reform. Their intense drive to explore not only enhances teaching quality but also yields notable achievements in scientific research, curriculum development, and other areas. This finding provides a direction for colleges and universities to formulate teacher motivation policies, that is, teachers should be encouraged to actively participate in teaching innovation and interdisciplinary research in the system design, in order to form a virtuous circle.

Furthermore, the study revealed that the path coefficient remained stable after accounting for variables such as teacher gender, age, title, and teaching experience, suggesting that internal motivation plays a robust role in driving faculty professional development. This provides an empirical basis for colleges and universities to formulate teacher development plans and motivation measures in the future. Based on this result, universities can further optimize the teacher development environment from three aspects: first, by enhancing teachers' recognition of school culture and educational concepts, we can stimulate their inherent sense of responsibility; secondly, establish a diversified communication and cooperation platform for teachers, thereby enhancing their social motivation; finally, construct platforms and mechanisms to foster innovation, urging teachers to dedicate themselves to researching and practicing new technologies and methodologies.

However, this study still has some limitations. Firstly, due to the cross-sectional questionnaire data, the dynamic causal relationship between internal motivation and teacher development cannot be revealed. Secondly, despite covering numerous universities, the sample has limitations in terms of region and institution type. For future studies, consider using longitudinal data or including cross-provincial cities and diverse universities for deeper verification. Furthermore, future studies could also explore external environmental factors such as school leadership style and performance appraisal mechanism in the model to explore the

interaction between them and internal motivation, so as to comprehensively construct an internal and external motivation mechanism that affects faculty professional development.

In conclusion, the empirical results of this study fully affirm the applicability of self-determination theory in higher education, demonstrating that all facets of internal motivation exert a notable positive influence on faculty professional development. Teachers' positive recognition, emotional support, and pursuit of innovation constitute a crucial impetus for their sustained growth and advancement in both teaching and research endeavors. Based on this, it is suggested that universities should not only pay attention to the external motivation system in the design of teacher motivation mechanism, but also pay attention to stimulating the internal potential of teachers, and provide a good platform to support innovation and collaboration, so as to promote the overall quality upgrading of higher education.

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References

Avalos, B. (2011). Teacher professional development in Teaching and Teacher Education over ten years. *Teaching and Teacher Education*, 27(1), 10-20.

Bragg, L. A., Walsh, C., & Heyeres, M. (2021). Successful design and delivery of online professional development for teachers: A systematic review of the literature. *Computers & Education*, 166, 104158.

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). Effective Teacher Professional Development. *Learning Policy Institute*.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268.

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, 26(4), 331-362.

Gao Zhenfa. (2018). Correlation Analysis between Professional Identity and Professional Development of Vocational Faculties. *Education and Career*, (19), 87-93.

Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology*, 102(3), 741-756.

Mallah, Farah. (2019). A Theoretical Framework for Teacher motivation: Monetary, Social and Vision-Based. *Journal of Education and Learning*, 8(1), 29-42.

Morichika M.& Shibayama S. (2015). "Impact of inbreeding on scientific productivity: a case study of a Japanese university department". *Research Evaluation*, 24(2), 146-157.

Nellitawati, N. (2018). Motivation and innovation role of school's principal in improving teacher professionalism. COUNS-EDU: *The International Journal of Counseling and Education*, 3(2), 48‑56.

Ryan, Richard M. and Edward L. Deci. (2000). "Self-determination theory and the facilitation of internal motivation, social development, and wellbeing." *American Psychologist*, 55(1), 68-83.

Ryan, R. M., & Deci, E. L. (2000). internal and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25(1), 54-67.

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25(3), 293-315.

Skaalvik, E. M., & Skaalvik, S. (2019). Teacher burnout: Relations between dimensions of burnout, perceived school context, job satisfaction, and motivation for teaching. *AERA Open*, 5(1), 1-17.

Shin, J., Taylor, M. S., & Seo, M.-G. (2012). Resources for change: The relationships of organizational inducements and psychological resilience to employees' attitudes and behaviors toward organizational change. *Academy of Management Journal*, 55(3), 727‑748.

Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17(7), 783-805.