

# ***Ethical Leadership as a Psychological Mechanism Linking Teacher Self-Efficacy and Classroom Management to Online Professional Development Engagement***

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**Abstract:** This study examines the psychological mechanisms underlying engagement in online professional development among university teachers by investigating the roles of classroom management, teacher self-efficacy, and ethical leadership. Although teacher competencies are known to influence professional learning, limited research has explored how leadership processes translate individual capabilities into effective engagement in digital development programs. Drawing on self-efficacy and social learning perspectives, this study proposes ethical leadership as a mediating mechanism linking teacher competencies to online professional development outcomes. Data were collected from 370 academic staff members in Chinese higher education institutions using stratified random sampling. Structural equation modeling revealed that classroom management and teacher self-efficacy significantly and positively predicted ethical leadership ( $\beta = 0.484$ ;  $\beta = 0.341$ ) and online development program effectiveness ( $\beta = 0.433$ ;  $\beta = 0.384$ ). Ethical leadership also showed a strong positive effect on online development outcomes ( $\beta = 0.376$ ) and significantly mediated the relationships between teacher competencies and program effectiveness. The model explained 53% of the variance in online development outcomes and 29% in ethical leadership, indicating substantial explanatory power. These findings highlight the critical psychological role of self-efficacy beliefs, instructional competence, and leadership context in promoting engagement in professional learning within digital environments. The study contributes to educational and organizational psychology by clarifying how individual capabilities and leadership dynamics jointly shape online professional development.

**Keywords:** Self-Efficacy, Higher Education, Classroom Management, Online Development Program, Ethical Leadership.

## **1. Introduction**

The rise of Online Development Programs (ODPs) has transformed educational practices, particularly in the aftermath of the COVID-19 pandemic. These programs offer flexible and accessible professional development opportunities for teachers, helping them adapt to new teaching environments and digital tools (Shapira & Amzalag, 2026). However, their success depends on several critical factors, including classroom management, teacher self-efficacy, and leadership quality. Effective classroom management is essential for maintaining structure, discipline, and student engagement, even in virtual environments (Nanyele, 2024). Without it, the potential of ODPs cannot be fully realized, as disruptions and a lack of organization negatively affect learning. At the

same time, teacher self-efficacy defined as the belief in one's ability to teach effectively directly influences motivation and willingness to adopt innovative teaching methods (Bandura, 1997). Teachers with high self-efficacy are more likely to experiment with technology, actively engage students, and improve learning and performance outcomes (Shahzad et al., 2020). Self-efficacy influences the capability to achieve performance in accordance with a dedicated project (Badlishaha, Alib & Fareedc, 2019).

Ethical leadership plays a crucial role in this dynamic. Ethical leaders foster a culture of trust, fairness, and accountability, which encourages faculty to participate in ODPs and overcome resistance to change (Amels et al., 2021). In Chinese higher education, ethical leadership is deeply influenced by Confucian values such as benevolence and integrity (Wang & Xiang, 2025). Leaders who embody these principles provide guidance, ensure fair treatment, and create inclusive environments that support professional growth.

This study therefore focuses on how ethical leadership mediates the relationship between classroom management, teacher self-efficacy, and the effectiveness of ODPs. Drawing on Behavioral Learning Theory (BLT) and the Technology Acceptance Model (TAM), the study examines how structured environments and teachers' beliefs about their capabilities influence engagement in online professional learning. The findings aim to guide universities in designing more effective ODPs that improve teaching quality, strengthen teacher confidence, and enhance student learning experiences.

The rapid growth of digital education has made ODPs an essential pillar of higher education worldwide. These programs offer flexibility, accessibility, and scalability, which are particularly important for reaching diverse learners and supporting teachers in evolving digital contexts (Samboteng & Kasmad, 2024). However, their implementation continues to face several challenges, including limited faculty preparedness, resistance to technology adoption, and insufficient instructional design support (Ramli, Rasul & Omar, 2024).

The success of ODPs also depends heavily on institutional leadership, teacher engagement, and robust digital infrastructure (Nguyen, 2024). Despite these advancements, many higher education institutions (HEIs) still struggle with quality assurance, maintaining student engagement, and aligning online curricula with sound pedagogical practices (Zheng, Phawitpiriyakliti & Terason, 2024). Faculty readiness plays a critical role in this transition. Many teachers experience technological anxiety and low self-efficacy, which negatively affects their ability to deliver effective online education (Liu et al., 2024). Low self-efficacy is associated with reduced student engagement, higher stress, and reluctance to adopt innovative teaching strategies (Zee & Koomen, 2016). Moreover, the lack of structured training programs further limits teachers' confidence and skill development (Ramli et al., 2024).

Despite growing interest in online professional development, existing research has largely examined teacher self-efficacy, classroom management, and leadership as independent predictors of instructional improvement rather than as interconnected psychological mechanisms that jointly shape engagement in professional learning. While prior studies have shown that self-efficacy influences teachers' willingness to adopt new practices and that classroom management supports effective instructional environments, limited empirical work has explored how these competencies translate into sustained participation in online development programs. More importantly, the psychological role of ethical leadership in linking individual teacher capabilities to professional learning engagement remains underexplored. Although leadership research highlights its influence on motivation, trust, and organizational behavior,

few studies have examined ethical leadership as a mediating mechanism through which teacher self-efficacy and classroom management influence engagement in technology-supported professional development.

This gap is particularly evident in higher education contexts, where digital transformation requires both individual competence and supportive leadership environments. Addressing this limitation, the present study investigates ethical leadership as a key psychological mechanism that connects teacher self-efficacy and classroom management to online professional development engagement, thereby providing a more integrated explanation of how personal and contextual factors jointly shape professional learning behavior.

## **2. Literature Review**

The emergence of Education 5.0 has transformed higher education by emphasizing innovation, digital integration, human-centered learning, and continuous professional development for educators. In the context of China's higher education, faculty members who lack training in e-learning technologies are often resistant to its adoption, as they perceive it as more difficult and time-consuming compared to traditional face-to-face teaching methods. Consequently, insufficient knowledge among teachers not only affects the implementation but also the quality of e-learning programs (Ma et al., 2025). In this evolving context, teachers are expected to adapt to technological advancements, adopt new pedagogical approaches, and engage in ongoing learning to remain effective in dynamic academic environments. Online Development Programs (ODPs) have therefore become essential platforms for supporting faculty growth and enhancing instructional competence. However, engagement in such programs is shaped not only by institutional opportunities but also by psychological and professional factors. Teacher self-efficacy influences confidence, motivation, and openness to learning, while classroom management reflects practical competence and professional identity that support instructional adaptability. At the same time, ethical leadership plays a critical role in creating supportive, trust-based environments that encourage participation in professional learning. Despite increasing attention to these variables, existing research has largely examined them in isolation. Limited studies have explored how ethical leadership functions as a psychological mechanism linking teacher self-efficacy and classroom management to engagement in online professional development.

Classroom management reflects teachers' ability to maintain structure, promote discipline, and create supportive learning environments through fairness, consistency, and respect. Beyond its instructional role, effective classroom management also represents a form of professional conduct that aligns with ethical values. Teachers who demonstrate strong classroom management often exhibit transparency, accountability, and inclusivity in their interactions, which are key characteristics associated with ethical leadership. These behaviours contribute to the development of trust-based relationships and foster a positive institutional climate. Prior research suggests that value-driven classroom management encourages fairness and respect, which are foundational elements of ethical leadership. Similarly, Olayinka and Ridwan (2025) emphasize that effective classroom management enhances student motivation and engagement, reflecting responsible and supportive teaching practices. Okeke (2024) further highlights that culturally responsive classroom management promotes inclusivity and moral responsibility, while Daugela and Zydziunaite (2024) notes that such practices

help cultivate mutual trust and ethical awareness in educational environments. From a psychological perspective, teachers who consistently manage classrooms in a fair and structured manner are more likely to internalize professional values and demonstrate leadership behaviors grounded in integrity and responsibility.

Therefore, classroom management can be viewed as a behavioural foundation that supports the development of ethical leadership within academic settings. Teachers who effectively regulate classroom environments are more likely to develop interpersonal skills, moral awareness, and professional responsibility associated with ethical leadership roles. This suggests that classroom management not only strengthens instructional effectiveness but also contributes to the emergence of leadership behaviours shaped by ethical principles.

Strong classroom management is closely linked to teachers' willingness to participate in professional development activities. During the COVID-19 pandemic, effective management practices helped maintain instructional quality and continuity in rapidly changing teaching environments (Zhang et al., 2020). When integrated into online development programs, classroom management skills promote collaboration, adaptability, and confidence-building among teachers (Mulenga & Shilongo, 2025). Conversely, poor classroom management experiences may reduce teachers' confidence and diminish the perceived value of professional learning opportunities (Elsayary et al., 2024). From a psychological perspective, teachers who feel competent in managing instructional environments are more likely to engage in continuous learning, as their sense of control and professional readiness supports active participation in development initiatives.

Teachers with high self-efficacy are more confident in making ethical decisions and modeling fairness, responsibility, and inclusion in their professional roles (Su-Keene, DeMatthews & Keene, 2024). Self-efficacy strengthens democratic teaching practices, moral awareness, and student-centered engagement (Ashlan & Fajri, 2025). Schools that actively build teacher efficacy are more likely to cultivate environments characterized by strong ethical leadership, as confident educators tend to demonstrate accountability, initiative, and value-driven behavior (Liu, Qian & Ding, 2025). In this sense, self-efficacy supports the development of leadership qualities grounded in integrity and professional responsibility.

Teacher self-efficacy plays a vital role in shaping engagement in online development programs. The expansion of online learning has significantly influenced teachers' confidence in their ability to use digital tools, with practical experience further strengthening instructional competence. Teachers with high self-efficacy are more likely to participate in online learning opportunities because they believe in their capacity to adapt to new technologies and teaching methods (Ashlan & Fajri, 2025). Self-efficacy also encourages experimentation with innovative instructional strategies. Liu et al. (2025), note that teachers with strong self-belief are more open to implementing new approaches, which enhances student engagement and learning outcomes. Importantly, this relationship can be reciprocal: high self-efficacy promotes participation in development programs, while successful participation further strengthens confidence and competence. Alfiras (2024) found that teachers who actively engaged in online professional development reported increased instructional confidence. Supporting teacher self-efficacy within ODPs is therefore essential for developing a skilled and adaptable teaching workforce.

### *2.1. Ethical Leadership and Online Development Engagement*

Ethical leadership is essential for creating supportive online learning environments

where teachers feel valued, respected, and motivated to engage in professional development (Ossiannilsson, 2025). In digital contexts, ethical leaders help reduce professional isolation, promote collaboration, and encourage active participation in learning communities (Modise, 2025). Leaders who demonstrate fairness, transparency, and integrity positively influence educators' attitudes toward professional growth (Anis, 2024; Kong, Yang & Hou, 2024). They also advocate for equitable resource distribution and digital inclusion, ensuring the sustainability and scalability of online programs (Eyeyien et al., 2024). By promoting mentorship, open communication, and shared decision-making, ethical leadership strengthens engagement and contributes to a culture of continuous professional improvement (Wang et al., 2024).

Ethical leadership can therefore be understood as a psychological bridge connecting individual teacher capacities such as classroom management and self-efficacy with collective outcomes in online professional development. By modeling fairness, transparency, and concern for teacher well-being, ethical leaders foster psychological safety, trust, and motivation (Brown & Treviño, 2006). This supportive environment enhances teacher confidence and encourages engagement with digital learning initiatives, ultimately contributing to more sustainable and effective professional development outcomes (Sulaimon & Adebayo, 2024).

Effective classroom management forms the foundation of a productive learning environment, particularly in online settings where direct interaction is limited. Ethical leadership strengthens classroom management practices by promoting transparency, respect, and fairness, enabling teachers to implement strategies that engage learners and foster collaboration (Shiundu, 2024). During periods of educational disruption, ethical leaders ensured that teachers received the resources, training, and institutional support necessary to manage virtual classrooms effectively (Ahmed, 2025). They also cultivate collaborative cultures in which educators share best practices, thereby improving classroom management and strengthening engagement in online development programs (Lalani, Crawford & Butler-Henderson, 2025).

Similarly, teacher self-efficacy strongly influences engagement in online development programs, as confident teachers are more likely to adopt innovative practices and explore new teaching approaches. Ethical leadership reinforces self-efficacy by providing support, recognition, and professional guidance, empowering teachers to take initiative and participate fully in online learning environments (Biniaminov & Moshel, 2025). During the transition to digital education, ethical leaders played a key role in mitigating challenges by ensuring access to training and institutional resources, which strengthened teachers' confidence and readiness. This supportive leadership environment enhances the connection between self-efficacy and professional development engagement, creating a positive cycle in which increased confidence leads to greater participation and improved teaching outcomes.

### **3. Methodology**

This study adopted a positivist research philosophy to analyze data collected from primary sources. A deductive approach was employed to test established theories and hypothesized relationships among CM, Teachers' SE, EL, and ODP, moving from general theoretical frameworks to specific observations. This approach ensures logical rigor, supports replication, and allows for generalizable findings within an academic context. A quantitative research strategy was chosen to objectively examine the

relationships among the study variables using measurable data to test hypotheses, identify patterns, and apply statistical techniques, including Structural Equation Modelling (SEM). The unit of analysis comprised academic staff members only, and primary data were collected through a questionnaire. This design is appropriate for formulating hypotheses and conducting descriptive analyses to explore relationships, although it does not establish causality over time (Sekaran & Bougie, 2016).

### *3.1. Research Design*

The study employed a cross-sectional survey design to collect data from academic staff at a single point in time. This design is suitable for examining relationships among variables and testing theoretical models using quantitative methods. The cross-sectional nature of the study allows for the efficient collection of data from a relatively large number of respondents, making it appropriate for Structural Equation Modelling analysis.

### *3.2. Data Collection Procedure*

Primary data were collected using a structured online questionnaire. The questionnaire link was distributed to academic staff through institutional communication channels such as email and internal academic networks within three months. Participation was voluntary, and respondents were informed about the purpose of the study, confidentiality of their responses, and their right to withdraw at any time.

### *3.3. Measurement Scale*

All constructs in this study were measured using previously validated instruments adapted from established research. A 7-point Likert scale was used for all items, ranging from 1 (strongly disagree) to 7 (strongly agree). The use of a consistent scale across all constructs ensured comparability and reliability of responses. The Likert-scale responses were treated as interval data to facilitate advanced statistical analyses, including descriptive statistics, correlation analysis, and Structural Equation Modelling (SEM). The independent variable, Classroom Management (CM), was measured using a 63-item questionnaire adopted from Díaz et al. (2018) due to its comprehensive and multidimensional nature, which aligns with the objectives of this study. The construct encompasses a broad range of teacher competencies and strategies aimed at creating a positive learning environment, managing student behavior, organizing classroom procedures, and promoting student engagement. The instrument captures various dimensions of classroom management, including instructional strategies, behavior management, classroom organization, and the psychological and social classroom environment, thereby providing a holistic assessment of teachers' classroom practices. The reliability and validity of the Inventory of Classroom Management Techniques have been well established in prior research, making it a credible and widely accepted tool for educational studies, with detailed item descriptions provided in the appendix. The second independent variable, Self-Efficacy (SE), was measured using the Teacher Efficacy Scale (TES) validated by Nie, Lau, and Liao (2012), a widely recognized instrument grounded in Bandura's Social Cognitive Theory. This scale measures teachers' confidence in their ability to influence student learning through instructional strategies, classroom management, and student engagement, reflecting beliefs developed through mastery experiences, observational learning, verbal

encouragement, and emotional regulation. Self-efficacy was operationalized through Likert-scale items assessing teachers' confidence in performing professional tasks such as developing effective instructional methods, maintaining discipline, and encouraging active student participation, with higher TES scores indicating stronger teaching confidence, innovation, and resilience. Ethical Leadership (EL), the mediating variable, was measured using the Ethical Leadership Questionnaire (ELQ) developed by Langlois et al. (2014), a validated instrument designed to assess leadership behaviors based on principles of integrity, fairness, accountability, and inspirational motivation. The ELQ evaluates how leaders demonstrate ethical conduct, make fair decisions, uphold responsibility, and foster ethical practices within institutions, with empirical studies confirming its strong construct validity, reliability, and internal consistency. In this study, the ELQ was used to examine the mediating role of ethical leadership in the relationships between classroom management, teacher self-efficacy, and the effectiveness of Online Development Programs (ODP). The dependent variable, Online Development Program (ODP), was examined to understand professional growth in contemporary educational settings and was measured based on the framework proposed by Meyer, Kleinknecht and Richter (2023), which emphasizes technology–pedagogy integration, active learning, collaboration, and continuous evaluation. ODPs were analysed as an outcome influenced by classroom management practices, teacher self-efficacy, and ethical leadership, with ethical leadership expected to foster trust, equity, and institutional support, while self-efficacy influences engagement and classroom management supports adaptability in virtual environments.

### *3.4. Ethical Considerations*

Ethical standards were strictly observed throughout the research process. Respondents were informed about the purpose of the study and assured that their participation was voluntary. Confidentiality and anonymity were maintained by not collecting personally identifiable information. The collected data was used solely for academic purposes and were stored securely to prevent unauthorized access.

**Population and Sampling:** The population consists of 9751 academic staff from four top government HEIs in Guizhou, China. Stratified random sampling is used to ensure representation across universities, reflecting population proportions. Based on Krejcie and Morgan (1970), a sample of 370 faculty members was selected (details are summarized in table1). Table 1 presents the response rate of the study across four participating institutions: Guizhou University, Guizhou Normal College, Guizhou University of Finance & Economics, and Zunyi Normal University. The total population comprised 9,751 academic staff members. Based on a sampling proportion of 3.8%, a sample size of 370 respondents was determined. To ensure an adequate number of responses, 40% of additional questionnaires were distributed, resulting in a total of 518 questionnaires being sent out across the four universities.

## **4. Results and Findings**

Out of the distributed questionnaires, 404 were returned, indicating a strong overall participation level. Guizhou University recorded the highest number of returns (187), followed by Guizhou Normal College (92), Guizhou University of Finance & Economics (84), and Zunyi Normal University (41). The response rates for the respective institutions were 85%, 68%, 83%, and 67%.

After screening for completeness and accuracy, 21 questionnaires were disqualified due to missing or inconsistent responses. The remaining 383 questionnaires were deemed valid and suitable for analysis. Institution-wise, the number of qualified responses was 178 from Guizhou University, 87 from Guizhou Normal College, 81 from Guizhou University of Finance & Economics, and 37 from Zunyi Normal University. The valid response rates were 81%, 64%, 80%, and 61%, respectively, resulting in an overall valid response rate of 74%. This final sample size was considered adequate for conducting further statistical analysis, including Structural Equation Modelling (SEM).

Table 1: Response Rate of the Study.

	Guizhou University	Guizhou Normal College	GuiZhou University of Finance & Economics	ZunYi Normal University	TOTAL
Population	4143	2572	1895	1141	9751
Sample size (3.8) %	157	97	72	44	370
Distributed 40% extra)	220	136	101	61	518
Returned	187	92	84	41	404
Response rate (%)	85	68	83	67	
Disqualified	9	5	3	4	21
Qualified	178	87	81	37	383
Valid response rate (%)	81	64	80	61	74%

Normality is a key assumption in multivariate analysis, ensuring accurate interpretation of relationships between variables. With the help of SPSS, in this study, normality was assessed using visual inspection (histograms and normal Q-Q plots) and statistical measures (skewness and kurtosis). which confirmed confirm symmetry, appropriateness and results validate the normality assumption for subsequent multivariate analyses. The unit of analysis for this study comprised academic staff from four selected Higher Education Institutes (HEIs) in China. An online survey link was distributed to 518 faculty members in March 2025. Follow-up reminders were made via phone in mid and late April, resulting in 384 valid responses, of which 370 were used for analysis. The demographic profile (Table 2) indicated 227 males (61%) and 143 females (39%), with 71% married. The age distribution showed 39% of respondents aged 36–45 years, 29% aged 26–35 years, and 20% aged 46–55 years. Regarding qualifications, 27% were Ph.D. holders, 39% had a master's degree, 10% held postdoctoral qualifications, and 22% had a bachelor's degree. Work experience varied, with the largest group (34%) having 11–20 years, followed by 22% with 21–30 years. Proportionate stratified random sampling ensured representativeness across institutions and faculty subgroups (Hair et al., 2010).

Internal consistency reliability was assessed using composite reliability (CR), which overcomes the limitations of Cronbach's alpha ( $\alpha$ ) by accounting for the outer loadings of each indicator (Hair et al., 2014). While Cronbach's alpha is widely used to estimate reliability based on inter-item correlations (Sekaran & Bougie, 2009), it assumes equal indicator loadings and is sensitive to the number of items, often underestimating reliability. In this study, Cronbach's alpha and composite reliability values ranged from 0.777 to 0.886, exceeding the 0.70 threshold (Hair, Ringle & Sarstedt, 2011; Nunnally, 1978), indicating good to excellent internal consistency of all constructs. Table 3 presents the reliability results, confirming the adequacy of the measures used. Figure 1 and 2 also showed the structural & measurement models of the study, respectively.

Table 2: Demographical Results of the Study.

Demographics	Description	No.	%
Gender	Male	227	61.35
	Female	143	38.65
Total		370	100.00
Marital Status	Married	271	73.24
	Single	99	26.76
Total		370	100.00
Age	Less than 25	41	11.08
	26-35	108	29.19
	36-45	142	38.38
	46-55	74	20.00
	56 and above	5	1.35
Total		370	100
Education	Bachelor	81	21.89
	Master	146	39.46
	PhD	101	27.30
	Post Doc	38	10.27
	Others	4	1.08
Total		370	100
Experience	Less than 10	79	21.35
	11-20	129	34.86
	21-30	83	22.43
	31-40	46	12.43
	More than 50	33	8.92
Total		370	100

Table 3: Loading Values the Items.

S/N	Constructs	Items	Loadings	Average Variance Extracted	Composite Reliability	Alpha Value
1	Classroom Management (CM)	CMD1	0.785	0.732	0.777	0.791
2		CMD2	0.753			
3		CMD3	0.898			
4		CMD4	0.941			
5	Self-Efficacy (SE)	SE1	0.833	0.742	0.859	0.722
6		SE2	0.763			
7		SE3	0.721			
8		SE4	0.873			
9		SE5	0.877			
10		SE6	0.723			
11		SE7	0.803			
12		SE8	0.723			
13	Ethical Leadership (EL)	EL1	0.757	0.767	0.846	0.694
14		EL2	0.939			
15		EL3	0.842			
16		EL4	0.773			
17		EL5	0.813			
18		EL6	0.771			
19		EL7	0.904			
20		EL8	0.668			
21		EL9	0.636			
22		EL10	0.883			

S/N	Constructs	Items	Loadings	Average Variance Extracted	Composite Reliability	Alpha Value
23	Online Development Program (ODP)	ODP1	0.779	0.86	0.886	0.909
24		ODP2	0.833			
25		ODP3	0.763			
26		ODP4	0.721			
27		ODP5	0.873			
28		ODP6	0.877			
29		ODP7	0.889			
30		ODP8	0.959			
31		ODP9	0.89			
32		ODP10	0.867			
33		ODP11	0.844			
34		ODP12	0.748			

#### 4.1. Discriminant Validity

The discriminant validity of the measures was confirmed by employing the method of Fornell and Larcker (1981). As illustrated in Table 4 the square root of average variance extracted (AVE) for all the constructs were placed at the diagonal elements of the correlation matrix. As the diagonal elements were higher than the other elements of the row and column in which they were located, this confirms the discriminant validity of the outer model (Hair et al., 2010). In sum, having established the construct validity of the outer model, it is assumed that the obtained results pertaining to the hypotheses testing should be valid and reliable.

Table 4: Discriminant Validity (Fornell & Larcker, 1981)'s Method.

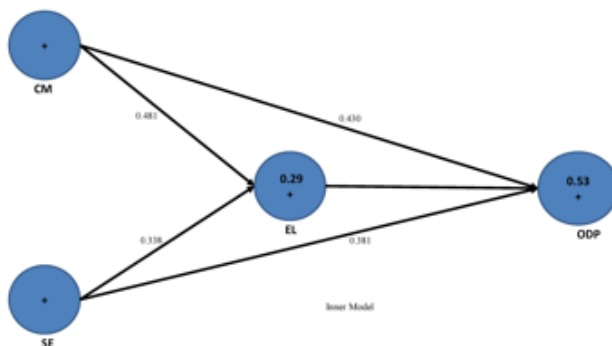
Constructs	Classroom Management (CM)	Self-Efficacy (SE)	Ethical Leadership (EL)	Online Development Program (ODP)
Classroom Management (CM)	0.86			
Self-Efficacy (SE)	0.357	0.866		
Ethical Leadership (EL)	0.294	0.349	0.88	
Online Development Program (ODP)	0.415	0.373	0.339	0.931

#### 4.2. Structural Model Assessment

The structural model was assessed to examine the hypothesized relationships among Classroom Management (CM), Self-Efficacy (SE), Ethical Leadership (EL), and Online Development Programs (ODP). The results indicate that both CM and SE have meaningful direct effects on EL, with path coefficients of 0.481 and 0.338 respectively, suggesting that improvements in classroom management practices and teachers' self-efficacy contribute positively to perceptions of ethical leadership. The model further shows that EL has a substantial direct effect on ODP ( $\beta = 0.381$ ), confirming its mediating role in strengthening the effectiveness of online development initiatives. In addition to the indirect pathway through EL, CM and SE also demonstrate direct effects on ODP, with CM showing a strong influence ( $\beta = 0.610$ ) and SE a moderate effect. The coefficient of determination ( $R^2$ ) values indicate that CM and SE together explain 29% of the variance in EL, while CM, SE, and EL jointly explain 53% of the variance in ODP. These findings suggest that

the model has moderate to strong explanatory power and supports the proposed relationships, highlighting that effective classroom management and strong self-efficacy not only directly enhance engagement in online development programs but also do so indirectly through the mediating role of ethical leadership. See Figure 1.

Figure 1: Structural Model.



### 4.3. Hypotheses Testing

Table 5 presents the summary of the hypothesis testing results for both direct and indirect effects in the structural model. The findings indicate that all proposed hypotheses were supported. For the direct effects, Classroom Management (CM) was found to have a significant positive influence on Ethical Leadership (EL) ( $\beta = 0.484$ ,  $t = 5.203$ ), supporting H1. CM also showed a significant positive impact on Online Development Programs (ODP) ( $\beta = 0.433$ ,  $t = 2.36$ ), supporting H2. Similarly, Self-Efficacy (SE) demonstrated a significant positive effect on EL ( $\beta = 0.341$ ,  $t = 3.928$ ), supporting H3, and a significant direct impact on ODP ( $\beta = 0.384$ ,  $t = 3.37$ ), supporting H4. Furthermore, EL was found to significantly influence ODP ( $\beta = 0.376$ ,  $t = 11.885$ ), confirming H5 and highlighting the important role of ethical leadership in enhancing participation and effectiveness in online development programs among teachers in Chinese Higher Educational Institutes (HEIs). In terms of specific indirect effects, Ethical Leadership (EL) was found to play a significant mediating role in the relationship between CM and ODP ( $\beta = 0.552$ ,  $t = 3.442$ ), supporting H6. Additionally, EL significantly mediated the relationship between SE and ODP ( $\beta = 0.465$ ,  $t = 4.351$ ), supporting H7. These results indicate that both classroom management and teacher self-efficacy influence online development programs not only directly but also indirectly through ethical leadership.

The measurement model was assessed to evaluate the reliability and validity of the constructs used in the study, namely Classroom Management (CM), Self-Efficacy (SE), Ethical Leadership (EL), and Online Development Programs (ODP). The model includes multiple observed indicators representing each latent construct, and the factor loadings for most items were found to be strong and above the recommended threshold, indicating that the indicators adequately represent their respective constructs.

Table 5: Summary of the Study Results.

	Statement	Proposition	Coefficient	t values	Result
<b>Direct effect Results</b>					
H1	Classroom Management (CM) has significant positive influence on Ethical Leadership (EL) among teachers working in Chinese Higher Educational Institutes (HEIs).	CM-->EL	0.484	5.203	Supported
H2	Classroom Management (CM) has significant impact on Online Development Program (ODP) among teachers working in Chinese Higher Educational Institutes (HEIs).	CM-->ODP	0.433	2.36	Supported
H3	Self-Efficacy (SE) has significant influence on Ethical Leadership (EL) among teachers working in Chinese Higher Educational Institutes (HEIs).	SE-->EL	0.341	3.928	Supported
H4	Self-Efficacy (SE) has significant impact on Online Development Program (ODP) among teachers working in Chinese Higher Educational Institutes (HEIs).	SE-->ODP	0.384	3.37	Supported
H5	Ethical Leadership (EL) significantly affects Online Development Program (ODP) among teachers working in Chinese Higher Educational Institutes (HEIs).	EL-->ODP	0.376	11.885	Supported
<b>Specific Indirect Effect Results</b>					
H6	Ethical Leadership (EL) mediates the relationship between Classroom Management (CM) and Online Development Program (ODP) among teachers working in Chinese Higher Educational Institutes (HEIs).	CM-->EL-->ODP	0.552	3.442	Supported
H7	Ethical Leadership (EL) mediates relationship between teacher self-Efficacy (SE) and Online Development Program (ODP) among teachers working in Chinese Higher Educational Institutes (HEIs).	SE-->EL-->ODP	0.465	4.351	Supported

For Classroom Management (CM), the construct was measured through several dimensions, including discipline, teaching and learning, instructional practices, personal dimension, and psychological and social classroom environment. The majority of the item loadings ranged from moderate to high values, demonstrating good internal consistency and confirming that the indicators reliably measure the CM construct. Similarly, Self-Efficacy (SE) was measured using 12 indicators, and the loadings generally showed acceptable strength, indicating that the items effectively captured teachers' confidence in instructional strategies, classroom management, and student engagement.

Ethical Leadership (EL) was measured using a large number of indicators, and the loadings were consistently strong across most items, suggesting high convergent validity. The  $R^2$  value for EL was 0.29, indicating that CM and SE together explain 29% of the variance in ethical leadership. This reflects a moderate level of explanatory power and confirms the relevance of CM and SE as predictors of EL.

Online Development Program (ODP) was measured through several subdimensions, including cognitive activation, clarity and structure of online professional development, collaboration, and changes in academicians' professional practices. The indicator loadings for ODP were generally high, supporting the reliability of the measurement model. The  $R^2$  value for ODP was 0.53, indicating that CM, SE, and EL together explain 53% of the variance in ODP, which suggests a substantial level of explanatory strength. See Figure 2.

Figure 2: Measurement Model.

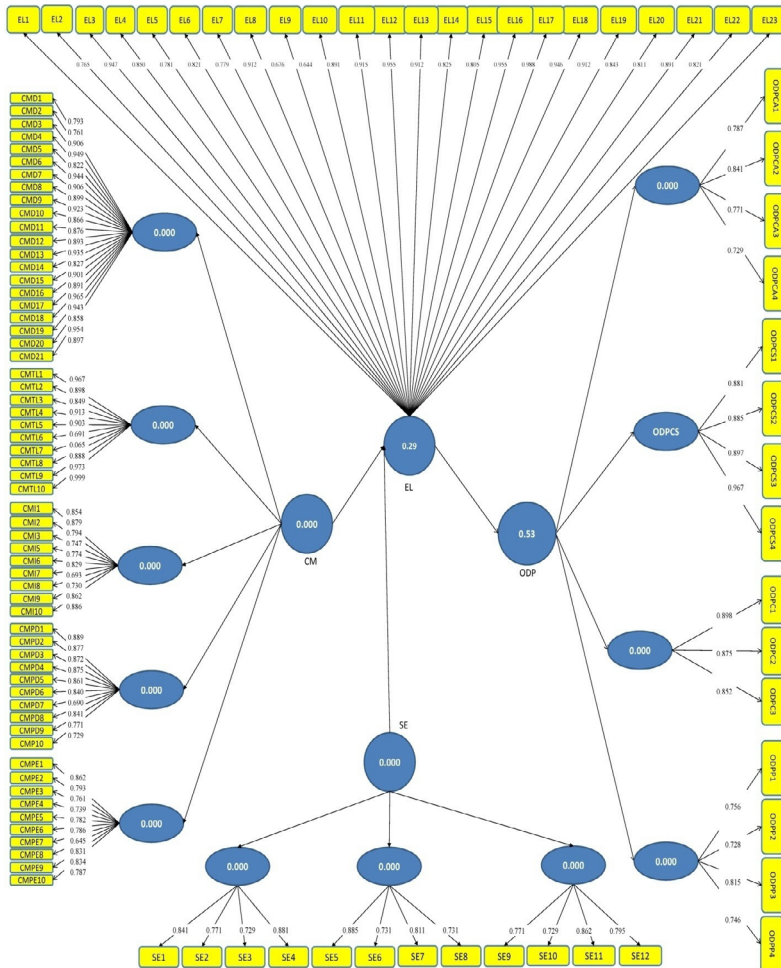


Table 6 presents the coefficient of determination ( $R^2$ ) values, which indicate the amount of variance explained in the endogenous latent variables by the predictors in the model. The results show that Self-Efficacy (SE) has an  $R^2$  value of 0.23, meaning that 23% of the variance in self-efficacy is explained by its associated predictors in the structural model. This suggests a moderate level of explanatory power, indicating that the model accounts for a meaningful proportion of factors influencing teachers' self-belief in their professional capabilities. Similarly, the Online Development Program (ODP) construct has an  $R^2$  value of 0.41, indicating that 41% of the variance in ODP is explained by the combined effects of Classroom Management (CM), Self-Efficacy (SE), and Ethical Leadership (EL). This reflects a substantial level of explanatory strength, suggesting that these variables play an important role in shaping teachers' engagement and effectiveness in online professional development initiatives. Overall, the  $R^2$  values demonstrate that the proposed model has acceptable predictive relevance and provides a reasonable explanation of the key outcome variables in the study.

Table 6: Coefficient of Determination.

Latent Variables	R Square (Variance Explained)
Self-Efficacy (SE)	23
Online Development Program (ODP)	41

## 5. Discussion

The present study examined the psychological mechanisms underlying teachers' engagement in Online Development Programs (ODPs) by investigating the roles of classroom management, teacher self-efficacy, and ethical leadership in Chinese higher education institutions. The findings provide strong empirical support for the proposed model, confirming that classroom management and self-efficacy significantly influence both ethical leadership and engagement in online professional development. Furthermore, ethical leadership emerged as a key mediating factor linking teacher competencies with professional learning outcomes. These results support the argument that teacher capabilities and leadership context jointly shape participation in digital professional development environments and strengthen the psychological foundation of professional learning engagement (Bandura, 1977; Shapira & Amzalag, 2026).

First, the results demonstrate that classroom management has a significant positive effect on ethical leadership. This finding aligns with earlier literature suggesting that effective classroom management reflects fairness, accountability, and respect in teacher–student interactions, which are core characteristics of ethical leadership. Teachers who demonstrate structured and inclusive classroom practices tend to internalize professional values that support integrity and responsibility in leadership roles (Daugela & Zydziunaite, 2024; Okeke, 2024). Moreover, effective classroom management has been associated with increased student engagement and motivation, reflecting responsible and ethical teaching behavior (Olayinka & Ridwan, 2025). These findings support the view that classroom management functions not only as an instructional skill but also as a behavioral foundation for ethical leadership development within academic environments.

The study also found that classroom management significantly influences engagement in online development programs. This is consistent with prior research highlighting that effective management practices support instructional continuity and adaptability, particularly during periods of rapid educational change (Zhang et al., 2020). Teachers who are confident in managing learning environments are more likely to perceive professional development as meaningful and to participate actively in online learning initiatives. When classroom management skills are integrated into digital learning contexts, they enhance collaboration, adaptability, and professional growth, reinforcing teachers' readiness to engage in continuous learning (Mulenga & Shilongo, 2025).

Similarly, teacher self-efficacy was found to have a significant positive effect on ethical leadership. This finding supports theoretical perspectives emphasizing that self-efficacy strengthens teachers' confidence in decision-making, initiative-taking, and professional responsibility (Bandura, 1977). Teachers with strong self-efficacy are more likely to demonstrate ethical awareness, accountability, and student-centered practices, which contribute to the development of ethical leadership qualities (Ashlan & Fajri, 2025; Su-Keene et al., 2024). In institutional environments where teacher efficacy is supported, educators tend to display higher levels of initiative and value-driven behavior, further reinforcing leadership capacity (Liu et al., 2025).

The findings also show that self-efficacy significantly influences engagement in online development programs. This result is consistent with previous studies indicating that teachers with strong self-belief are more willing to adopt new technologies, explore innovative teaching strategies, and participate in professional learning activities. High self-efficacy has been linked to increased motivation and readiness to adapt to digital teaching environments, while active participation in online development programs further strengthens instructional confidence and competence (Alfiras, 2024). This reciprocal relationship highlights the importance of fostering self-efficacy as a key driver of sustained engagement in professional development. Another important finding of this study is the significant influence of ethical leadership on online development program engagement. Ethical leaders play a crucial role in creating supportive and trust-based environments that encourage teachers to participate in professional learning (Amels et al., 2021; Ossiannilsson, 2025). In digital education settings, leadership characterized by fairness, transparency, and integrity reduces professional isolation and promotes collaboration among faculty members (Modise, 2025). Ethical leadership also supports equitable access to resources and encourages shared decision-making, which enhances participation and commitment to continuous professional development. These findings confirm that leadership behavior is a critical contextual factor influencing the success of online development initiatives.

Most importantly, the results confirm the mediating role of ethical leadership in linking classroom management and self-efficacy to online development engagement. This finding supports the conceptual argument that ethical leadership functions as a psychological bridge connecting individual teacher competencies with collective professional learning outcomes (Brown & Treviño, 2006). Ethical leaders provide support, recognition, and institutional guidance, which strengthen teachers' confidence and motivation to engage in online learning environments (Biniaminov & Moshel, 2025). During the transition to digital education, such leadership was particularly important in ensuring access to training, promoting collaboration, and supporting effective classroom management in virtual settings (Ahmed, 2025). By fostering trust and psychological safety, ethical leadership enhances the positive effects of teacher competencies on professional development participation. Overall, the findings demonstrate that teacher competencies and leadership dynamics jointly contribute to engagement in online professional development. The integration of classroom management, self-efficacy, and ethical leadership provides a more comprehensive explanation of how personal and contextual factors shape professional learning behavior in higher education. As higher education institutions continue to adapt to digital transformation, strengthening these interconnected factors is essential for improving teaching quality, supporting innovation, and sustaining engagement in professional development programs.

## **6. Conclusion**

To conclude, this study demonstrates that university teachers' engagement in online professional development is not solely a function of individual competencies but is significantly shaped by the interplay between classroom management skills, teacher self-efficacy, and ethical leadership. The findings confirm that ethical leadership serves as a critical mediating mechanism through which teacher competencies translate into effective participation and outcomes in digital learning environments. By explaining substantial

variance in online development effectiveness, the model underscores the psychological and organizational pathways that foster meaningful professional learning. These results extend educational and organizational psychology literature by integrating self-efficacy and social learning perspectives to show how leadership context amplifies individual capabilities. Practically, the study suggests that higher education institutions should cultivate ethical leadership practices alongside strengthening instructional competence and self-efficacy to enhance the impact of online professional development initiatives.

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