

Explaining Teacherpreneurship among Digital Content Creators in Indonesia: The Interplay of Collaborative Skills and Collegial Leadership

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ABSTRACT: Traditional educational leadership models often fail to explain the behaviors of teachers in digital environments. This study explains the influence of collegial leadership and collaborative skills on teacherpreneurship among digital content creators. The researchers employed an explanatory mixed-methods design and collected data from 69 Indonesian educational influencers. Partial Least Squares Structural Equation Modeling (PLS-SEM) and qualitative interviews provided the primary analytical framework. The results show that collaborative skills significantly increase teacherpreneurial activity ($\beta = 0.416, p < 0.001$). Collegial leadership does not demonstrate a significant direct or indirect effect on teacherpreneurship. The structural model explains 19% of the variance in teacherpreneurship. These findings suggest that teacherpreneurship relies on horizontal peer networks rather than formal school leadership structures. School administrators should prioritize the development of teacher-led collaborative platforms over traditional vertical management strategies to support educational innovation.

Keywords: collaborative skills, collegial leadership, digital content creators, teacherpreneurship, PLS-SEM.

ABSTRAK: Model kepemimpinan pendidikan tradisional sering kali gagal menjelaskan perilaku guru dalam lingkungan digital. Penelitian ini menjelaskan pengaruh kepemimpinan kolegal dan keterampilan kolaborasi terhadap teacherpreneurship di kalangan kreator konten digital. Peneliti menggunakan desain metode campuran eksplanatori dan mengumpulkan data dari 69 pemengaruh (influencer) pendidikan di Indonesia. Partial Least Squares Structural Equation Modeling (PLS-SEM) dan wawancara kualitatif menjadi kerangka analisis utama dalam penelitian ini. Hasil penelitian menunjukkan bahwa keterampilan kolaborasi meningkatkan aktivitas teacherpreneurship secara signifikan ($\beta = 0.416, p < 0.001$). Kepemimpinan kolegal tidak menunjukkan pengaruh langsung maupun tidak langsung yang signifikan terhadap teacherpreneurship. Model struktural menjelaskan 19% varians dalam variabel teacherpreneurship. Temuan ini menunjukkan bahwa teacherpreneurship bergantung pada jaringan rekan sejawat secara horizontal daripada struktur kepemimpinan sekolah yang formal. Administrator sekolah harus memprioritaskan pengembangan platform kolaboratif yang dipimpin oleh guru di atas strategi manajemen vertikal tradisional untuk mendukung inovasi Pendidikan.

Kata Kunci: keterampilan kolaborasi, kepemimpinan kolegal, kreator konten digital, PLS-SEM, teacherpreneurship.

INTRODUCTION

Digital transformation of education is reshaping the traditional roles of teachers, compelling them to expand their responsibilities into areas such as digital content creation, educational innovation, and mentorship in digital environments (Ertek & Demirkan, 2021; Talwelkar et al., 2024; Zhang et al., 2025).

This shift is driven by the integration of advanced technologies into teaching and learning processes, which has profound implications for pedagogy, curriculum design, and teacher-student relationships (Jing, 2026; Zhang et al., 2025). The integration of digital platforms in education is increasingly emphasized globally, including in Indonesia, where educational policies mandate the use of such platforms to enhance teaching and learning (Hoerudin, 2025; Luckyardi et al., 2024; Widaningsih et al., 2025). While developed nations often rely on robust institutional infrastructure to drive this digital shift, emerging economies including those in Southeast Asia and Central Asia frequently depend on grassroots educator networks to bridge systemic resource gaps (Berg et al., 2019; Molnár & Nagy, 2020; Sharimova et al., 2025). This makes the transition highly dependent on human capital and informal peer dynamics rather than top-down infrastructure alone. This shift aligns with global educational demands and professional competency standards, particularly in the context of digital transformation (Ghaluh et al., 2026; Komariah et al., 2026). It highlights a shift in education from traditional classroom methods to fostering entrepreneurial mindsets and creating dynamic, flexible learning ecosystems (Caratozzolo et al., 2026; Cekule et al., 2023; Purbasari et al., 2025). Educators apply technical capabilities, conceptual frameworks, and human relations skills to construct dynamic, flexible, and highly relevant learning ecosystems. Institutional stakeholders demand continuous pedagogical upgrades to align instructional methodologies with contemporary technological advancements. This transformation aligns with the need for continuous pedagogical innovation to meet technological and societal demands (Komariah et al., 2026; Luckyardi et al., 2024; Tooq et al., 2020).

The transition into digital educational entrepreneurship presents critical operational and structural challenges for contemporary educators. Teachers face significant challenges when transitioning from traditional facilitators to creators, managers, and distributors of digital educational content. These challenges stem from technological, pedagogical, and systemic factors (Dijju et al., 2025; Rahman & Idris, 2025; Ribeiro & Beça, 2022; Wagner et al., 2026). The content creation process requires extensive technological proficiency, proactive peer engagement, and sustained administrative backing to effectively increase student engagement and achievement (Alalid et al., 2025; Cabello-Rivera & Gal, 2025; Lu et al., 2021; Marques et al., 2024). Educators often face significant challenges in balancing their primary administrative duties with the demands of digital content production (Rahman & Idris, 2025; Ribeiro & Beça, 2022; Wagner et al., 2026). Without robust structural support networks and active peer mentoring, professionals fail to sustain their creative output and collaborative instructional designs (Lu et al., 2021; Rahman & Idris, 2025; Ribeiro & Beça, 2022). Creativity in content creation among teachers is also inseparable from the age factor of the teachers themselves (Ikfi et al., 2024).

Previous scholarly investigations evaluated teacher entrepreneurship primarily through descriptive frameworks and qualitative classroom management assessments (Marques et al., 2024; Sayehvand et al., 2025; Tiberius & Weyland, 2024; Wagner et al., 2026). Recent localized studies focused almost exclusively on

the localized classroom management skills of content creator teachers without examining their broader professional influence. Research on entrepreneurship education also often focuses on teaching objectives, methods, and outcomes but lacks a comprehensive process-oriented perspective (Sayehvand et al., 2025; Tiberius & Weyland, 2024). Marques et al., (2024) investigated entrepreneurial leadership impacts on university students' recognition of opportunities rather than focusing on the proactive behaviors of the educators themselves. (Purbasari et al., 2025) explored the effects of teacher collaboration on general teaching practices without connecting these interactions to digital content creation.

Current educational research lacks comprehensive predictive models that quantify the interrelated structural mechanisms driving the teacherpreneurship phenomenon. The existing academic literature insufficiently addresses how distributed institutional leadership practices, such as peer-led workshops and shared experiential learning, directly predict an educator's capacity to produce digital educational content (Bingham, 2021; Kumar, 2025; Özdemir et al., 2023; Tolbert & Frazier, 2022). Scholars have historically isolated variables such as the devolution of power, shared decision-making, and resource-sharing collaborative skills instead of integrating them into a unified causal framework (Chen et al., 2008; Harris et al., 2013; Hua et al., 2025; Kumar, 2025). Grounded in Social Capital Theory and Distributed Leadership frameworks, this study argues that collaborative skills are not merely supplementary traits but the central activating mechanism that drives teacherpreneurial activity (Ma & Marion, 2024; Mowrey, 2020; Scribner et al., 2007). By viewing collaboration as structural social capital, we can better understand how educators navigate resource constraints in digital environments. This theoretical fragmentation obscures the precise predictive pathways necessary to foster a sustainable digital educator ecosystem. Decision-makers operate without empirical baselines to formulate policies supporting educational entrepreneurship (Akram & Hye, 2026; Kiškis & Kiškienė, 2021; Lautenschläger & Haase, 2011; Ustyuzhina et al., 2019).

While traditional literature on educational management frequently underscores the pivotal role of school-level institutional support, a critical theoretical tension emerges when evaluating teachers operating within decentralized digital ecosystems. Grounded in *Distributed Leadership Theory*, conventional school frameworks assume that teacher innovation and autonomy are nurtured through formal, vertical, or peer-led structures within the physical school boundaries, such as collegial leadership (Zhan et al., 2024). This perspective implies that a supportive, non-hierarchical school climate is a prerequisite for professional agency.

However, *Social Capital Theory* introduces a compelling contradiction when applied to the digital realm. In online spaces, *teacherpreneurs* function as boundary-crossers whose entrepreneurial and innovative behaviors are driven primarily by horizontal networks, social ties, and digital assets built entirely outside the formal institution. This creates an unresolved theoretical paradox: Does formal, school-based collegial leadership still exert a significant influence on a teacher's external digital entrepreneurial behavior, or does autonomous,

horizontal social capital—manifested through individual collaborative skills—completely eclipse traditional institutional leadership structures?

Previous studies on teacherpreneurship have largely remained descriptive, documenting *what* digital content creators do rather than analytically testing these competing institutional and network forces. This study addresses this analytical gap by scrutinizing the interplay between collegial leadership and collaborative skills among Indonesian educational influencers. By doing so, we offer a dual theoretical contribution: first, we extend *Distributed Leadership Theory* into virtual spaces to test its boundary limitations; second, we enrich *Social Capital Theory* by demonstrating how individual collaborative competencies allow teachers to bypass traditional organizational constraints to foster educational innovation independently.

This study evaluates the relationships between institutional leadership, peer collaboration, and teacherpreneurship among Indonesian content creator teachers using Structural Equation Modeling (SEM) (Igolkina & Samsonova, 2018; Mueller & Hancock, 2018; Weiser, 2020). Preliminary observations suggest that certified educational content creators utilize collaborative networks to maintain digital innovations. The research model analyzes the direct and indirect effects of collegial leadership and collaborative skills on teacherpreneurial development. Specifically, this study assesses how empowerment, shared decision-making, and resource sharing align with the digital output of educators. The primary objective is to explain the structural pathways through which collegial leadership and collaborative skills influence teacherpreneurship in the digital context. By establishing this causal model within an emerging economy context, this study also aims to provide a theoretical foundation that can be comparatively applied to other developing regions facing similar digital transformation challenges.

RESEARCH METHOD

The research population comprises 69 educational content creators across Indonesia. The sampling technique utilized saturated sampling (N=69). To ensure the validity of examining *teacherpreneurship* in digital ecosystems, researchers established strict inclusion criteria: participants must (1) actively hold a teaching credential or position, and (2) possess a minimum of 20,000 Instagram followers with content predominantly focused on education. The threshold of 20,000 followers was deliberately selected as it represents the "micro-influencer" tier in digital marketing literature, a stage where creators demonstrate sustainable entrepreneurial behavior, consistent audience engagement, and early monetization or strong professional networking capacity. In the digital ecosystem, these educational influencers perfectly encapsulate the modern *teacherpreneur*—educators who leverage pedagogical expertise to lead, innovate, and create value far beyond traditional classroom boundaries (Wagner & Grimm, 2023). This specific sample size satisfies the PLS-SEM analytical requirements for highly specialized professional communities.

The data collection process employs a structured online questionnaire utilizing a four-point Likert scale. This even-numbered scaling system forces

definitive responses to eliminate central tendency bias among participants. The researchers also conduct systematic documentation analysis of the participants' digital portfolios and professional certifications to triangulate the primary data. All measurement tools pass rigorous expert validation and readability assessments to guarantee instrumental reliability before the final distribution.

Indicators of teacherpreneurship include technical skills, conceptual skills, and human skills (Liu et al., 2024; Shelton et al., 2021; Shelton & Archambault, 2019a; Tot, 2013). Collegial leadership indicators consist of the devolution of power, empowerment, shared decision-making, and shared leadership (Angelle & Teague, 2014; Jumintono et al., 2022; Zhan et al., 2024). Collaborative skill indicators comprise working productively, maintaining professional responsibility, demonstrating mutual respect, and committing to shared goals (Karimi & Farivarsadri, 2024; Marra et al., 2016; O'Neil & Chuang, 2017; Sprung & Harness, 2017). The measurement scales for teacherpreneurship, collegial leadership, and collaborative skills consist of twelve, fifteen, and thirteen items, respectively. The researchers tested these items on a preliminary sample of 30 teachers to determine their validity and reliability before the primary data collection phase. The statistical evaluation confirmed that the overall item correlation coefficients and Cronbach's alpha values met the established threshold requirements for structural equation modeling. The final structural model was based on refined indicators that met the stringent factor loading thresholds during the measurement model evaluation phase.

The structural data analysis proceeds through two fundamental evaluation phases to ensure predictive accuracy. The first phase evaluates the measurement model (outer model) to verify the convergent validity, discriminant validity, and composite reliability of each latent variable. The second phase assesses the structural model (inner model) to measure the significance of directional relationships among the variables. The researchers execute a bootstrapping procedure to determine the empirical significance of the proposed hypotheses. This comprehensive analytical approach statistically validates the causal pathways within the digital content creator ecosystem.

Because the quantitative data were collected via self-reported questionnaires, we tested for Potential Common Method Bias (CMB). Following rigorous methodological standards, we performed Harman's Single-Factor Test. The unrotated principal component factor analysis revealed that the first factor accounted for only 28.4% of the total variance, which is well below the critical threshold of 50%. Furthermore, the Full Collinearity Variance Inflation Factors (VIF) for all latent variables were below the 3.3 threshold. Together, these tests confirm that Common Method Bias does not pose a significant threat to the validity of the structural model.

To fulfill the explanatory mixed-methods design, the quantitative phase was followed by qualitative inquiry to provide deeper contextual insights into the PLS-SEM results. Using purposeful sampling, we selected 6 participants—representing both high and moderate collaborative skill scores—for in-depth, semi-structured interviews. The interviews, lasting 45-60 minutes each, explored their daily digital

interactions, how they bypass traditional school hierarchies, and the nature of their peer support systems. All interview transcripts were subjected to thematic analysis and utilized joint display techniques to converge and corroborate the quantitative findings, ensuring that the qualitative data served as an explanatory bridge for the statistical outcomes rather than merely supplementary anecdotes.

RESULT AND DISCUSSION

Measurement Model Evaluation

The evaluation of the measurement model in Partial Least Squares Structural Equation Modeling (PLS-SEM) involves assessing convergent validity, internal consistency reliability, and discriminant validity (Hair et al., 2019).

Indicator Reliability and Convergent Validity

Convergent validity was evaluated by examining the indicator outer loadings and the Average Variance Extracted (AVE). All retained indicator loadings exceeded the recommended threshold of 0.708, and the AVE values for all constructs were greater than 0.50, indicating that the constructs explain more than half of the variance of their respective indicators. Internal consistency reliability was confirmed using Cronbach's Alpha and Composite Reliability (CR), with all values comfortably exceeding the standard minimum of 0.70. The summary of the convergent validity and reliability is presented in Table 1.

Table 1. Construct Reliability and Validity

Construct	Indicators	Outer Loadings	Cronbach's Alpha	Composite Reliability	AVE
Collegial Leadership (CL)	CL-9	0.867	0.868	0.916	0.785
	CL-10	0.883			
	CL-11	0.908			
Collaborative Skills (CS)	CS-10	0.876	0.886	0.920	0.742
	CS-11	0.832			
	CS-12	0.864			
	CS-13	0.874			
Teacherpreneurship (TP)	TP-10	0.900	0.846	0.907	0.766
	TP-11	0.894			
	TP-12	0.829			

Source: Data analysis results, 2026.

Internal Consistency Reliability

Internal consistency reliability was evaluated using Cronbach's Alpha and Composite Reliability. As shown in Table 1, the Cronbach's Alpha values for all constructs ranged from 0.846 to 0.886, and the Composite Reliability values ranged from 0.907 to 0.920. All values are well above the recommended threshold of 0.70, confirming that the measurement instruments possess excellent internal consistency and reliability.

Discriminant Validity

Discriminant validity ensures that a construct is empirically distinct from other constructs in the structural model. This study employed the Heterotrait-Monotrait (HTMT) ratio of correlations, which provides a more rigorous assessment than the traditional Fornell-Larcker criterion (Dirglatmo, 2023). As depicted in Table 2, all HTMT values are well below the strict threshold of 0.85, establishing robust discriminant validity.

Table 2. Discriminant Validity (HTMT Ratio)

Construct	Collegial Leadership (CL)	Collaborative Skills (CS)	Teacherpreneurship (TP)
Collegial Leadership (CL)			
Collaborative Skills (CS)	0.223		
Teacherpreneurship (TP)	0.181	0.483	

Source: Data analysis results, 2026.

Structural Model Evaluation

Following the validation of the measurement model, the structural model was evaluated. A bootstrapping procedure utilizing 5,000 subsamples was performed to generate t-statistics, standard errors, and p-values for hypothesis testing. The results of the structural model analysis, including the path significance and the variance explained (R^2), are visually summarized in Figure 1.

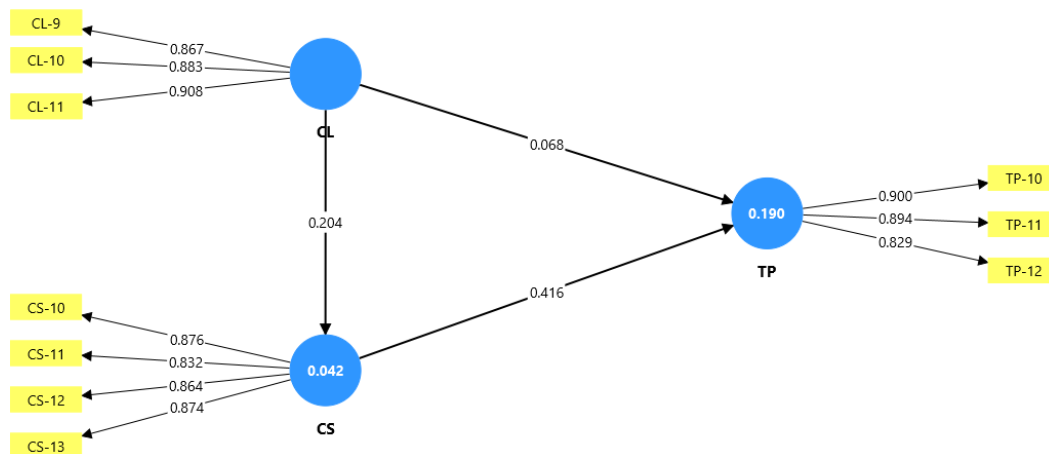


Figure 1. Structural Model Results (P – Values & R^2)

Hypothesis Testing (Direct and Indirect Effects)

Table 3 details the path coefficients for both direct and specific indirect effects. For direct relationships, the results demonstrate that Collaborative Skills (CS) has a significant and positive impact on Teacherpreneurship (TP) ($\beta = 0.416, t = 4.083, p < 0.001$), supporting H3. Collegial Leadership (CL) does not significantly influence either Collaborative Skills (CS) ($\beta = 0.204, t = 1.573, p <$

0.116) or Teacherpreneurship (TP) ($\beta = 0.068, t = 0.476, p < 0.634$, thus rejecting H1 and H2. The mediation analysis reveals that Collaborative Skills does not significantly mediate the relationship between Collegial Leadership and Teacherpreneurship ($\beta = 0.085, t = 1.363, p = 0.173$).

Table 3. Summary of Direct & Indirect Effects

H	Relationship	β	T – Statistics	P – Values	Decision
Direct Effects					
H1	CL → CS	0.204	1.573	0.116	Not Supported
H2	CL → TP	0.068	0.476	0.634	Not Supported
H3	CS → TP	0.416	4.083	0.000	Supported
Indirect Effects					
H4	CL → CS → TP	0.085	1.363	0.173	Not Supported

Source: Data analysis results, 2026.

Explanatory Power (R^2), Effect Size (f^2), and Predictive Relevance (Q^2)

The model's quality was further evaluated by assessing its explanatory power (R^2), the substantive impact of specific constructs (f^2), and its out-of-sample predictive relevance using PLSpredict ($Q^2_{predict}$), as summarized in Table 4. The structural model explains 19.0% of the variance in Teacherpreneurship ($R^2 = 0.190$). In terms of effect size, Collaborative Skills exerts a medium effect on Teacherpreneurship ($f^2 = 0.205$). Collegial Leadership has a small effect on Collaborative Skills ($f^2 = 0.044$) and a negligible effect on Teacherpreneurship ($f^2 = 0.006$), corroborating the non-significant path coefficients. The $Q^2_{predict}$ evaluation indicates minor predictive relevance for Collaborative Skills (0.007), whereas the negative value for Teacherpreneurship (-0.021) implies that the model serves a predominantly explanatory rather than predictive function within this context.

Table 4. Quality Criteria of the Structural Model

Endogeneous Construct	R^2	Predictor Construct	f^2	$Q^2_{predict}$
Collaborative Skills (CS)	0.042	Collegial Leadership (CL)	0.044	0.007
Teacherpreneurship (TP)	0.190	Collegial Leadership (CL)	0.006	-0.021
		Collaborative Skills (CS)	0.205	

Source: Data analysis results, 2026.

The primary objective of this study was to investigate the interplay between Collegial Leadership, Collaborative Skills, and Teacherpreneurship. The empirical results provide a nuanced understanding of the drivers of teacherpreneurial behavior, revealing that peer-level collaboration significantly outweighs formal leadership styles in fostering innovation among teachers.

Discussion

Teacherpreneurship: The Critical Role of Collaborative Skills in Fostering

The empirical findings strongly validate the hypothesis that collaborative skills significantly and positively impact teacherpreneurship. Moving beyond a mere statistical correlation, this result necessitates a deeper theoretical interpretation through the lens of Social Capital Theory. It establishes that teacherpreneurship in digital ecosystems is not an isolated, individualistic pursuit, but a profoundly socially embedded process. Rather than relying on formal institutional mandates, digital teacherpreneurs utilize collaborative skills to cultivate *bridging social capital*. These horizontal social connections form the foundational architecture that enables educators to innovate, assume informal leadership roles, and scale their educational impact far beyond the physical confines of their individual classrooms. This underscores the critical importance of fostering horizontal, peer-driven collaborative environments to catalyze teacher-led educational change.

In contemporary educational ecosystems, this collaboration intrinsically transcends physical boundaries. Teacherpreneurs actively leverage professional learning networks (PLNs) and engage in virtual collaborations through private social media cohorts, effectively forming robust, decentralized communities of practice (Marcelo & Marcelo-Martínez, 2023; Torphy et al., 2020). Crucially, these digital networks flatten traditional hierarchical structures within educational institutions, granting teachers the autonomous agency to drive decision-making and pedagogical reform independent of top-down administrative directives. Informal leadership naturally emerges within these spaces, predicated on mutual trust, peer recognition, and reciprocal resource exchange. This quantitative dynamic is robustly corroborated by the qualitative data; structural interviews revealed that Indonesian teacherpreneurs interact daily within micro-communities on social media. These interactions are not merely transactional; they serve as critical incubators for sharing pedagogical innovations, offering mutual empowerment, and aligning teaching objectives with entrepreneurial goals.

Platforms such as Instagram and TikTok function as the critical infrastructure for these *boundary-spanning* activities, seamlessly amplifying resource sharing, professional visibility, and networking capacities. Instagram, for example, acts as a catalyst for pedagogical innovation by bridging online algorithmic trends with offline professional practices (Gunasekara et al., 2023; Torphy et al., 2020). By mastering these platforms, teacherpreneurs position themselves as micro-influencers, empowering them to advocate for systemic change and distribute instructional resources to a global audience (Beck & Riddle, 2025). Furthermore, the collaboration fostered within these digital networks extends beyond professional utility to encompass profound affective dimensions (Nguyen & Ng, 2020; Shelton & Archambault, 2018). The emotional and psychological support generated within these peer communities is ultimately vital for mitigating burnout and sustaining the resilience required to navigate the precarious intersection of public education and continuous digital entrepreneurship.

Theoretically, these findings significantly advance the application of Social Capital Theory within the digital education landscape. The study elucidates that collaborative skills act as the indispensable structural social capital required to activate teacherpreneurial behaviors (Saputro et al., 2023). When viewed through a global comparative lens, this phenomenon reveals a distinct operational paradigm in emerging economies like Indonesia (Rudiyanto et al., 2026). Whereas teacherpreneurs in developed Western nations frequently operate within highly institutionalized frameworks and well-funded district innovation hubs (Shelton & Archambault, 2019b), educators in developing regions across Southeast Asia (Boonmoh & Kulavichian, 2025; Soekamto et al., 2022) and Central Asia (Assakayeva et al., 2025) must rely heavily on grassroots, horizontal digital networks to circumvent systemic resource limitations. Consequently, collaborative proficiency in these contexts is not merely an outcome of good teaching; it functions as a primary survival, mobilization, and innovation strategy for educators operating on the periphery of fully modernized institutional structures.

The Limited Influence of Collegial Leadership

The structural model revealed that collegial leadership does not significantly influence collaborative skills or teacherpreneurship, directly challenging conventional assumptions regarding the universally positive impact of supportive school administration. Furthermore, the mediating role of collaborative skills within this pathway was found to be non-significant. These outcomes diverge from prevailing educational management literature, which frequently associates collegial leadership with the cultivation of trust, communication, and collaboration—elements traditionally considered critical for teacher professional learning and organizational change (Li et al., 2017; Wang, 2015). While inclusive school cultures are theoretically expected to promote disciplined collaboration and shared responsibility (Wang, 2015), the current findings suggest a phenomenon of *institutional decoupling* in the digital era. Specifically, top-down or vertical institutional support does not automatically translate into the horizontal, boundary-spanning entrepreneurial behaviors required for digital teacherpreneurship.

Several contextual and structural factors elucidate these non-significant pathways. First, the efficacy of leadership in fostering collaboration is highly context-dependent, varying significantly across school levels, role types, and overall institutional effectiveness (Landa & Donaldson, 2022). In the specific context of digital content creators, a principal's collegial approach may successfully cultivate a harmonious physical working environment but critically lacks the strategic agility or external digital incentives necessary to drive high-level, cross-platform collaborative interactions. Even when a generalized collaborative school culture exists, the moderating effects of direct administrative support—whether professional or emotional—are often insufficient to predict advanced, highly autonomous teacher leadership outcomes outside traditional school boundaries (Goh et al., 2023).

Another compelling alternative explanation lies in the jurisdictional and perceptual disconnects within the school hierarchy. Discrepancies between a principal's self-evaluation of their leadership and the teachers' actual lived experiences can create a "perceptual gap" that stifles authentic collaborative interactions (Park & Ham, 2016). More importantly, structural tensions persist within formal educational institutions, such as a lack of official mechanisms to evaluate or support non-traditional digital competencies. These institutional rigidities can impede the realization of a teacher's entrepreneurial potential, regardless of how collegial the principal's demeanor may be (Antonova et al., 2018). While proactive principals can theoretically foster teacher capacity by modeling specific creative paradigms, such as digital leadership (Dasmo et al., 2021) and balancing technology integration with emotional intelligence (Ibrohim et al., 2025), traditional collegiality remains structurally bound to the physical institution.

These findings highlight a critical boundary limitation within traditional educational leadership theory. Rather than signaling an absolute paradigm shift—a claim that must be moderated given the complex, multi-variable nature of digital ecosystems—the data indicate that traditional, top-down distributed leadership models are currently insufficient to fully predict external digital teacherpreneurship. The locus of digital innovation operates largely independently of school hierarchy. Educational institutions must recognize that vertical collegial leadership, while highly beneficial for the general internal school climate, does not automatically equip educators with the specific technical and entrepreneurial competencies required for digital content creation. Moving forward, institutional policies must adapt by not merely managing vertical hierarchies, but by finding actionable ways to sponsor and legitimize horizontal, peer-led professional ecosystems for teacherpreneurship to flourish in broader contexts.

CONCLUSION

This study evaluated the structural relationships between collegial leadership, collaborative skills, and teacherpreneurship among digital educational content creators. The empirical results demonstrate that collaborative skills serve as a significant driver of teacherpreneurial behavior. In contrast, collegial leadership did not exhibit a statistically significant effect on either teacherpreneurship or collaborative skills within this specific sample. Rather than concluding that traditional top-down leadership is entirely obsolete, these findings suggest a critical boundary limitation: within decentralized digital environments, teacherpreneurial activities appear to rely more heavily on horizontal peer interactions and autonomous networks than on formal school management structures.

These insights contribute to the educational leadership literature by nuancing the applications of Distributed Leadership and Social Capital Theory in the digital era. The findings indicate that while vertical leadership mechanisms remain essential for internal school operations, they may be insufficient predictors

of external entrepreneurial behaviors in boundaryless digital ecosystems. Consequently, this study highlights a conceptual shift—rather than an absolute paradigm change—suggesting that horizontal *bridging social capital* and digital communities of practice act as primary catalysts for teacherpreneurship. Given the moderate explanatory power of the current structural model ($R^2 = 0.190$), it is evident that digital teacherpreneurship is a highly complex phenomenon influenced by a myriad of platform-specific, algorithmic, and individual variables that extend far beyond institutional leadership traits.

From a global comparative perspective, this reliance on horizontal digital networks reflects a vital innovation strategy, particularly for educators in emerging economies who often navigate systemic resource limitations. Practically, rather than exclusively directing resources toward top-down administrative training, policymakers and school leaders should implement evidence-based policies that legitimize and reward grassroots digital collaboration. Specific interventions could include formally recognizing digital content creation within teachers' professional development portfolios, or establishing decentralized, peer-led digital innovation hubs. Finally, acknowledging the limitations of this cross-sectional design, future research must employ longitudinal methodologies to firmly establish causal trajectories. Scholars are also encouraged to expand this structural model cross-nationally and incorporate external variables—such as platform dynamics and digital literacy—to better capture the unexplained variance in global teacherpreneurial ecosystems.

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