

From Resource Sharing to Collaborative Development: Restructuring the Mechanism for Building Teaching and Research Communities Among Primary and Secondary School Teachers in Yunnan Province's Border Regions

ZHAO Ziyi, JIANG Yuantao*

Yunnan Normal University, Kunming, China

Against the backdrop of high-quality educational development, teacher research and practice communities have become an important organisational form for promoting teachers' professional development and the coordinated development of regional education. In the border regions of Yunnan Province, influenced by factors such as geographical location, school distribution, and resource allocation mechanisms, the development of teaching and research communities continues to face a mismatch between resource investment and collaborative effectiveness. To promote the high-quality development of these communities, it is necessary to shift from a logic of resource allocation to one of collaborative development. This can be achieved by refining regional coordination mechanisms, strengthening partnerships between schools, empowering teachers to play a central role, and deepening the application of digital technology, thereby realising the deep integration of educational resources with teachers' professional development.

Keywords: border regions, teacher research communities, collaborative development, development mechanisms

Introduction

“Modernisation of Education in China 2035” identifies “enhancing the high-quality development of education” as the primary priority for the modernisation of education (Ding & Meng, 2022). Teachers' professional development is a key factor in driving the high-quality development of basic education. In recent years, teacher research communities—as an important organisational form for promoting collaborative learning and professional growth among teachers—have gradually become a key practical pathway for regional educational reform. Unlike traditional models of teacher development, which rely primarily on the accumulation of individual experience, teacher research communities emphasise the sharing of knowledge and professional development through continuous exchange, collaborative research, and reflective practice. However, the formation of such communities does not occur naturally merely through the allocation of resources; their effectiveness depends on the effective

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ZHAO Ziyi, Postgraduate student, Faculty of Education, Yunnan Normal University, Kunming, China.

JIANG Yuantao* (corresponding author), Associate Professor, Faculty of Education, Yunnan Normal University, Kunming, China.

synergy between the institutional environment, organisational relationships, and the active participation of teachers themselves.

In the border regions of Yunnan Province, primary and secondary schools are influenced by factors such as geographical conditions, the distribution of schools and disparities in regional development; as a result, professional exchanges among teachers in these schools continue to face issues such as insufficient organisational links, inefficient resource flow, and unstable cooperation mechanisms. Against the backdrop of the continuous improvement of educational resources and the ongoing digital transformation, the conditions for primary and secondary schools in border regions to access educational resources have improved; however, the provision of resources has not necessarily translated into teachers' capacity for sustained collaboration. The key to building teaching and research communities in border regions lies not merely in addressing the question of whether resources are "available" or not, but rather in focusing on how resources can be transformed, through effective mechanisms, into collaborative capabilities that foster the joint professional development of teachers.

Theoretical Basis and Analytical Framework

The Theory of Professional Learning Communities

A professional learning community is a team comprising teachers and administrators who share common values; through dynamic and ongoing collaborative mechanisms, they unite the will and actions of its members, whilst adopting a learning-oriented approach to continuously improve teaching practice and pursue the professional development of the community (Hord & Sommers, 2011). This theory moves beyond the traditional framework of "individual growth" in teacher professional development, emphasising that teachers' professional competence does not stem solely from external knowledge input, but is continuously generated through shared practice, the exchange of experiences, and ongoing reflection.

This theory offers important insights into the development of teaching and research communities among primary and secondary school teachers in Yunnan Province's border regions. Educational development in these border regions tends to focus more on the supplementation and allocation of educational resources, such as the introduction of high-quality curriculum resources, increased opportunities for teacher training, and the development of digital platforms. However, access to resources does not necessarily mean that teachers' professional capabilities will improve in tandem; only when these resources enter the networks of interaction amongst teachers—and are transformed through collaborative discussion, practical refinement, and the application of experience—can they truly generate the internal momentum that drives teachers' professional development.

The Theory of Collaborative Governance

The establishment of teacher research communities in Yunnan Province's border regions is, in essence, a governance process involving the coordination of multiple stakeholders' interests and the integration of resources. Unlike the traditional management model, in which education authorities drive initiatives unilaterally and schools passively implement them, teaching and research communities emphasise the formation of sustained collaborative relationships among different stakeholders under shared objectives. Particularly in border regions, where schools are relatively scattered and access to educational resources varies considerably, individual schools often find it difficult to meet all the needs of teachers' professional development on their own. Regional educational development therefore requires transcending the organisational boundaries of individual schools and achieving effective resource integration through multi-stakeholder collaboration.

The theory of collaborative governance emphasises that the resolution of complex public affairs does not rely on the unilateral control of any single actor, but rather requires the establishment of interdependent cooperative networks amongst governments, organisations, and individuals. It seeks to promote collaboration between subsystems, thereby maximising the system's effectiveness. Secondly, there is the dynamism of social systems; this dynamism is manifested not only in the competition and collaboration between subsystems, but also in the system's overall transition from disorder to order, or from one structure to another (Li, 2014). In the process of building teacher research and teaching communities, educational administrative departments primarily undertake the functions of institutional provision and resource coordination; schools undertake the functions of organisational liaison and activity implementation; whilst teachers realise the transformation of resource value through professional engagement. If there is a lack of effective coordination between these different actors, even with policy support and resource investment, problems such as the fragmentation of resources, short-term cooperation, and instability in the operation of the community may arise.

Development of an Analytical Framework

Judging from field surveys and existing research, whether in the context of educational resource allocation or regional teaching and research reform, research perspectives have largely remained at the level of resource provision or institutional design, whilst relatively little attention has been paid to how resources are transformed into teachers' capacity for sustained collaboration. Although resource investment can improve the external conditions for community building, it is difficult for it to directly foster stable professional interaction amongst teachers. The development of teaching and research communities relies not only on institutional provision and the restructuring of organisational relationships, but even more so on the sustained participation of teachers as active agents in shared practice. Consequently, there is no simple linear relationship between resource sharing and collaborative development; rather, a transformative process is required, progressing from resource integration and organisational connections to professional interaction.

Drawing on the theories of professional learning communities and collaborative governance, and taking into account the practical context of primary and secondary education development in Yunnan Province's border regions, we have constructed an analytical framework comprising "institutional support—organisational collaboration—teacher agency—technological empowerment". Within this framework, institutional support is primarily manifested through policy guidance, institutional safeguards, and resource allocation, providing the fundamental institutional environment for the development of teaching and research communities; organisational synergy emphasises the formation of stable cooperative relationships between education authorities, schools and regional teaching and research organisations, promoting the cross-regional flow of educational resources through organisational linkages; teacher agency is the core variable for the sustained development of the community, as teachers' ability to engage in continuous interaction around authentic teaching challenges determines whether the community can transition from formalised cooperation to professional symbiosis; technological empowerment, meanwhile, reduces the costs of collaboration arising from geographical distance through digital platforms, online teaching and research, and intelligent technologies, thereby supporting cross-regional professional exchange. Together, these four elements form the connecting links through which resources are transformed into collaborative capacity, driving teaching and research communities for primary and secondary school teachers from resource sharing towards collaborative development. Based on this, this study analyses the practical obstacles encountered in the development of teaching and research communities for primary and

secondary school teachers in the border regions of Yunnan Province, and further explores practical pathways to promote the sustainable development of these communities.

Obstacles to the Transition From Resource Sharing to Collaborative Development

The Provision of Resources Has Not Been Integrated Into Teachers' Professional Practice

Most research on teacher research and teaching communities regards the provision of resources as a key prerequisite for community building. However, this fails to explain a widespread phenomenon in education: In some regions, despite a continuous increase in the provision of teacher training, digital platforms, and high-quality curriculum resources, stable professional collaborative relationships have not been established amongst teachers; conversely, there are also schools with relatively limited resources that have fostered a sustainable culture of research and teaching through long-term professional interaction. This suggests that the logic underpinning the construction of such communities cannot be reduced simply to the accumulation of resources; rather, we must further examine how resources can be transformed into professional collaboration. The primary challenge facing the development of teaching and research communities among primary and secondary school teachers in the border regions of Yunnan Province is no longer confined to a shortage of resources, but is increasingly manifesting as an insufficient transformation from resource sharing to professional collaboration. The mere fact that resources reach a school does not imply that a community has been formed; the true hallmark of a community's emergence is the sustained co-construction of knowledge and professional collaboration among teachers centred on teaching practice. From the perspective of Professional Learning Communities (PLC) theory, teachers' professional knowledge is distinctly practice-generated. Knowledge is not a direct result of external resource input, but is continuously constructed through collaborative lesson planning, classroom observation, teaching reflection, and teaching competitions. The reason resources can promote teachers' professional development is not because the resources themselves possess developmental value, but because they serve as a medium for teachers to engage in professional dialogue. When resources primarily take the form of training programmes, course materials, or digital platforms, their value lies chiefly in resource sharing; it is only when teachers engage in sustained collaboration around these resources and continually generate new professional experiences that the resources truly transform into an endogenous driving force.

Organisational Collaboration Has Not Yet Evolved Into a Community of Practice for Teaching and Research

Existing research has generally emphasised the significance of organisational mechanisms for teacher collaboration; institutional arrangements such as cross-regional teaching and research, school clusters, and lesson evaluations have indeed created the conditions for cross-school exchange. However, such institutional arrangements provide more of an opportunity for collaboration than a collaborative relationship in itself. Sarason (1971) argues that a genuine culture of collaboration is deep-seated, personal, and enduring, and forms a central part of teachers' day-to-day work. Whether teachers are willing to engage in ongoing exchange, whether they are able to conduct collaborative research centred on real classroom practice, and whether they can gradually build professional trust—none of these can be left to emerge automatically through the subtle influence of organisational structures.

The vitality of a teaching and research community does not lie in the completeness of its organisational structure, but rather in whether teachers have formed collaborative relationships capable of continuously

generating professional knowledge. For a teaching and research community to evolve from mere cooperation into a symbiotic relationship, it must be gradually established through the process of jointly addressing educational and teaching issues, sharing classroom experiences, and engaging in “discussions” about education.

Interaction Between Teachers Remains Limited to the Exchange of Experiences

From the perspective of the intrinsic laws governing teachers’ professional development, interaction in itself does not carry community significance; what is truly valuable is whether such interaction can promote the ongoing construction of professional knowledge. Experience is distinctly contextual; it stems from the understanding and judgements formed by individual teachers through long-term teaching practice, and is characterised by a strong degree of individuality. When experience is disseminated merely through “sharing”, its function is largely limited to the transmission of information; only when different teachers compare, question, revise, and reconstruct their experiences around teaching issues of common concern can that experience transcend the boundaries of individual practice and gradually develop into professional knowledge shared by the community. In other words, what teacher interaction truly needs to achieve is not the flow of experience, but the generation of knowledge. Once the professional development activities have concluded, teachers return to their respective schools, and the original lines of communication are often severed; consequently, it becomes difficult for these experiences to continue to be tested in practice and collectively refined. As a result, these experiences remain confined to the individual level and fail to evolve into professional knowledge that the community can continuously build upon.

Digital Empowerment Has Not Yet Given Rise to a Collaborative Learning Ecosystem

The development of digital education has opened up new possibilities for addressing the uneven distribution of educational resources in border regions, whilst also transforming the ways in which teachers access professional resources and engage in teaching and research activities. Leveraging digital platforms, communication between teachers has gradually transcended the constraints of time and space, with activities such as cross-regional resource sharing, online collective lesson planning and virtual teaching and research sessions becoming increasingly widespread. However, the widespread application of digital technology has not simultaneously driven the development of teachers’ teaching and research communities; the expansion of technological connectivity coexists with a lack of professional collaboration, indicating that digital empowerment does not necessarily lead to the formation of such communities. In the process of digital transformation, the development of teachers’ teaching and research communities in Yunnan’s border regions is currently characterised by this phenomenon of “technology leading the way ahead of collaboration”. Various digital teaching and research platforms are gradually reaching grassroots schools, and teachers’ opportunities to access high-quality curriculum resources and participate in online training have increased significantly. Nevertheless, platform usage remains predominantly limited to browsing resources, course study, and online meetings, whilst sustained collaborative practice centred on specific classroom issues remains relatively scarce. The value of digital empowerment for the development of teaching and research communities in border regions should not be measured solely by platform coverage or resource provision capacity, but rather by whether it fosters the ongoing development of professional relationships among teachers. The focus of digital development should also gradually shift from platform construction to ecosystem building, driving the genuine integration of digital technology into the entire process of teachers’ collaborative learning, research, and creation. Only when technological connections are further transformed into professional collaboration can digital empowerment

transcend its status as a mere tool and become an endogenous force driving the sustainable development of teachers' teaching and research communities.

Reconstructing the Mechanisms for the Collaborative Development of Teaching and Research Communities

Promoting the Translation of Resource Provision Into Professional Practice

The provision of resources has always been a vital foundation for the development of teacher research and practice communities in border regions. The transformation of resources into professional practice is, in essence, a process of knowledge generation rather than a process of resource allocation. Teacher research and practice in Yunnan's border regions relies heavily on project-based training, expert lectures, and the provision of high-quality curricula; whilst these approaches have improved teachers' access to resources, they struggle to directly facilitate the continuous improvement of classroom practice. Teachers' professional skills are distinctly context-dependent; they must be continually tested in real classroom settings and refined through peer exchange. The value of resources does not depend on the scale of provision, but rather on whether they can be integrated into the classroom, into teaching and research, and into the process of collective reflection amongst teachers. When resources are continually reinterpreted and reapplied in response to real teaching challenges, the development of the community gradually evolves from resource sharing towards professional collaboration.

Promoting the Evolution of Organisational Collaboration Into Teaching and Research Communities

In the border regions of Yunnan Province, teaching and research activities among primary and secondary school teachers are primarily carried out through coordination by education authorities, the establishment of regional alliances, and local support initiatives; a relatively stable framework for cooperation has already begun to take shape between different schools. From an organisational and operational perspective, this cooperation helps to integrate regional educational resources and broaden the scope of teacher exchanges, whilst also providing institutional safeguards for cross-school teaching and research. The formation of teaching and research communities is, in essence, a process of organisational culture development. Compared with general cooperative relationships, such communities place greater emphasis on fostering a shared spirit of openness, sharing, equal dialogue, and collective reflection amongst teachers; their stability depends on the sustained professional identity shared by the teachers themselves, rather than on external institutional mechanisms to maintain the cooperative relationship. The development of teaching and research communities requires not only institutional safeguards but, more importantly, the formation of sustained professional practices amongst teachers centred on shared educational challenges.

Promoting the Deepening of Teacher Interaction Towards the Co-creation of Knowledge

Teacher interaction is merely an outward manifestation of a community's functioning; the co-creation of knowledge is the internal mechanism that sustains the community's vitality. The significance of a teaching and research community lies precisely in providing a stable practical space for this co-creation of knowledge, enabling teachers to engage in ongoing collective inquiry centred on real-world educational issues. Co-creation of knowledge transforms the professional relationships between teachers. In traditional models of teaching and research, teachers were primarily sharers of experience or recipients of knowledge, forming relatively loose relationships of exchange with one another. In the process of co-creation, however, each teacher not only contributes their own experience but also continually absorbs and refines the professional judgements of others;

differing viewpoints collide through ongoing discussion, ultimately giving rise to new understandings of teaching. This implies that teachers' professional development no longer relies on the accumulation of individual experience, but is gradually built upon the foundation of collective wisdom.

Promoting the Transformation of Digital Empowerment Into Collaborative Teaching and Research

Digital technology is increasingly being integrated into teachers' professional development, driving profound changes in the way teachers engage in professional learning. Digital platforms have become vital vehicles for cross-regional resource sharing and inter-school exchange, thereby alleviating, to some extent, the barriers to collaboration posed by geographical distance. The educational value of digital technology depends on how it is embedded in teachers' professional practice. Digital platforms should gradually evolve from mere resource-providing platforms into platforms for professional collaboration, guiding teachers to engage in ongoing online discussions, shared reflection, and collaborative improvement around authentic educational issues such as classroom observations, teaching case studies, curriculum implementation, and student learning, thereby enabling professional knowledge to be generated and refined through continuous interaction. The transformation from digital empowerment to collaborative teaching and research can provide sustained support for teachers to co-create knowledge, reconstruct experiences, and improve their practice. For border regions in Yunnan Province, the true objective of digital development should not be the construction of more platforms, but rather the use of digital technology to continually expand the professional space for teachers to learn, research, and grow together, thereby transforming digital empowerment into an intrinsic driving force for the sustainable development of the teaching community.

Conclusion

The development of teaching and research communities for primary and secondary school teachers in Yunnan Province's border regions exhibits distinct regional characteristics. The genuine emergence of such communities has always depended on teachers continuously engaging in professional dialogue, knowledge construction, and collective reflection centred on educational and teaching practices, thereby forming a stable professional identity and collaborative action through ongoing interaction. Only when the sharing of resources is continually transformed into shared practice, organisational cooperation is deepened into professional collaboration, and digital connectivity serves the co-creation of knowledge, can teaching and research communities truly become an endogenous force driving the high-quality development of regional education.

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