

Resource-Constrained Leadership and Teacher Competence Development: A Qualitative Case Study in an Islamic Boarding School

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ABSTRACT

Teacher competence determines the quality of learning, yet *madrasah* principals in private *pesantren* must raise that competence while working with limited funding and incomplete facilities. This study examines how the principal of Pondok Pesantren Nurmadani NW Montong Lisung strengthens teacher competence, what obstacles constrain those efforts, and what solutions the principal applies in response. The research used a qualitative case study design. Data came from in-depth interviews with foundation administrators, three madrasah principals, a deputy principal, teachers, and administrative staff, and were supported by field observation and documentation. Analysis followed the interactive model of data condensation, data display, and conclusion drawing, while source triangulation secured the trustworthiness of the findings. Three results emerged. The principal builds competence through a broad and repeating cycle of workshops, subject forums, curriculum training, and supervision that is planned before each budget year. The main obstacles form a connected chain in which limited funding narrows facilities and training and, together with heavy administrative workloads, slows the uneven adaptation of some teachers to classroom technology. The principal answers these constraints by recombining free, external, and community resources, such as official training portals, district workshops, peer collaboration, and priority-based planning. The study contributes a model of resource-constrained, bricolage-driven leadership for continuous teacher development. Its implication is that leadership effectiveness in low-resource pesantren rests on the capacity to orchestrate scarce and borrowed resources rather than on budget size, which offers practical guidance for policy support and for principals facing comparable conditions.

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INTRODUCTION

The quality of education depends heavily on the competence of the teachers who deliver it, which makes strengthening that competence a central task for any educational institution. In Indonesia, Law Number 20 of 2003 on the National Education System frames education as a conscious, planned effort to develop learners' potential across spiritual, intellectual, and character dimensions, and this ambition cannot be realized without qualified educators (Lafendry, 2020). The challenge is sharper in private Islamic institutions such as *pesantren*, where principals must raise teacher quality while operating with limited facilities, modest funding, and teachers who sometimes instruct outside their fields of expertise (El Widdah, 2022; Hidayat et al., 2022). Pondok Pesantren Nurmadani NW Montong Lisung



reflects this tension precisely: it has produced notable student achievements in speech and Qur'an memorization competitions even as it works under constrained resources. Understanding how a *madrasah* principal sustains teacher development under such conditions is therefore an issue of real empirical and practical weight, not merely an administrative concern.

Scholarship on this issue converges around three themes that together frame the present study. The first concerns what makes professional development effective; reviews of the international evidence consistently find that development works best when it is sustained, collaborative, subject-specific, and supported by external expertise rather than delivered as isolated events (Sims & Fletcher-Wood, 2021). The second theme links leadership directly to teacher growth, showing that instructional and transformational leadership by principals predicts the professional development and performance of their teachers (He et al., 2024; Mulyadi & Sobri, 2024). The third theme situates these dynamics within Islamic education, where studies report that *madrasah* principals foster teacher professionalism through supervision, training, and the integration of religious values into management practice (Mariani et al., 2022; Herlinawati et al., 2021). Read together, this literature establishes that leadership matters, that quality development is continuous, and that context shapes both, yet it treats these insights largely in isolation from the condition of scarcity.

A clear gap remains at the intersection of these themes. Prior studies tend to examine either the features of effective development or the leadership styles associated with it, and much of the leadership research relies on quantitative designs that measure associations rather than tracing how a principal actually acts when resources are thin (He et al., 2024; Bhattarai, 2026). Few studies follow, in fine-grained detail, how a single *madrasah* principal converts severe funding and facility constraints into a working program of teacher development, and fewer still do so in the specific setting of a small, multi-level *pesantren* where policy and resource pressures are felt acutely (Kosim et al., 2023). This study addresses that gap by treating scarcity not as background noise but as the very condition that shapes leadership practice. Its novelty lies in identifying a pattern of resource-constrained, bricolage-driven leadership, in which the principal recombines free, external, and community resources to keep a continuous development cycle alive, an angle that existing Indonesian and international scholarship has not yet articulated for this context.

The purpose of this study follows directly from that gap. It sets out to identify the strategies the *madrasah* principal employs to strengthen teacher competence at Pondok Pesantren Nurmadani NW Montong Lisung, to examine the obstacles that constrain those efforts, and to analyze the solutions the principal implements in response. Pursuing these three aims allows the study to extend the existing literature in two directions at once: it grounds the abstract features of effective professional development in the lived reality of an under-resourced institution, and it gives the leadership-and-development relationship a process account rather than a correlational one (Sims & Fletcher-Wood, 2021; Bhattarai, 2026). The relevance of this contribution is both academic and practical, since a clearer understanding of how principals manage scarcity can inform policy support for *pesantren* and guide school leaders who face comparable constraints across Indonesia and other developing contexts (Murwaningsih, 2024).

The central argument of this study is that effective leadership in a low-resource *pesantren* is defined less by the size of the budget than by the principal's capacity to orchestrate scarce and borrowed resources into a self-reinforcing cycle of teacher growth. Because this argument concerns process, meaning, and context rather than measurable magnitude, the study adopts a qualitative case study approach that explores how strategy, constraint, and response interact within a single bounded institution (Miles et al., 2014). The focus is deliberately interpretive: the aim is to understand the reasoning behind the principal's choices, the texture of the obstacles as teachers and administrators experience them, and the logic that connects each solution to the constraint it answers. This exploratory orientation

sets the direction for the sections that follow, in which the research method, findings, and their broader implications are presented in turn.

To underscore its urgency, the study responds to a practical reality that many Indonesian pesantren share: the demand for quality education continues to rise even as material support lags behind. Examining how one principal navigates this imbalance offers lessons that reach beyond a single institution and speak to the wider effort to improve teacher quality under constraint (Isa et al., 2024).

RESEARCH METHOD

This study employed a qualitative approach with a descriptive case study design, chosen because the research sought to understand the *madrasah* principal's strategy for strengthening teacher competence as it unfolded in its natural setting rather than to measure it through predetermined variables. A qualitative case study is well suited to a bounded, single-institution phenomenon where the aim is to describe practices, obstacles, and solutions in depth and to interpret their meaning within a specific context (Yin, 2018; Merriam & Tisdell, 2016). The site was Pondok Pesantren Nurmadani NW Montong Lisung in Semoyang Village, Praya Timur District, a private Islamic boarding school that runs three madrasah levels, namely Ibtidaiyah, Tsanawiyah, and Aliyah. This setting was selected purposively because it presented the very tension the study examines, an institution showing steady achievement gains while still working under limited facilities and constrained funding (Campbell et al., 2020). The single-site focus was a deliberate choice rather than a limitation, since a case study trades statistical generalization for contextual depth, which allows the analysis to trace how strategy, constraint, and response interacted within one institution (Yin, 2018).

Data were collected through three techniques used in combination, namely in-depth interviews, participant observation, and documentation. Interviews were the primary technique and were conducted with purposively selected informants who held direct roles in the competence-building process, namely the foundation administrators, the three *madrasah* principals, a deputy principal, teachers, and administrative staff, so that the strategy could be viewed from leadership, teaching, and administrative vantage points at once (see Table 1). Observation captured how competence-building activities, supervision, and planning operated in the field, which provided evidence that could confirm or qualify what informants reported (Busetto et al., 2020). Documentation supplied a third stream of evidence that included work programs, activity records, attendance lists, and photographs of training and supervision activities. Combining these three techniques allowed the study to triangulate across sources, so that a claim resting on an interview could be checked against what was observed and what the records showed, which is a core means of establishing credibility in qualitative inquiry (Lincoln & Guba, 1985; Stahl & King, 2020).

Table 1. Research informants and their roles

No.	Informant (role)	Level / unit	Contribution to the data
1	Foundation Chairman	Foundation	Strategy, KKG enrollment, annual planning
2	Foundation Treasurer	Foundation	Funding sources and constraints
3	Foundation Secretary	Foundation	Financing of activities
4	Principal (MTs)	Madrasah Tsanawiyah	Training and assessment programs
5	Principal (MI)	Madrasah Ibtidaiyah	Workshop, independent training, supervision design
6	Principal (MA)	Madrasah Aliyah	Obstacles and proposed solutions
7	Deputy Principal	Madrasah	Two-track supervision
8	Teachers (several)	All levels	Participation, adaptation, perceived change
9	Administrative staff	Madrasah	Documented program strands

Data were analyzed using the interactive model of Miles et al. (2014), which proceeds through three concurrent activities, namely data condensation, data display, and conclusion drawing and verification. In the condensation stage, interview transcripts, field notes, and documents were selected, focused, and coded, with recurring codes grouped into the three themes that organize the findings, namely the principal's strategies, the obstacles encountered, and the solutions implemented (Naeem et al., 2023). In the display stage, the condensed data were arranged into thematic narratives and summary tables so that patterns across informants became visible and comparable. Conclusions were then drawn and continuously verified against the full body of evidence, including the deliberate search for accounts that diverged from the dominant pattern, so that variation was reported rather than smoothed over. To strengthen the trustworthiness of these conclusions, the study applied Lincoln and Guba's (1985) four criteria of credibility, dependability, confirmability, and transferability, supported chiefly by source triangulation among interviews, observation, and documentation (Nyirenda et al., 2020).

RESULT AND DISCUSSION

Results

This study focused on the Educational Personnel Standard among the eight National Education Standards, specifically on how the *madrasah* principal works to strengthen teacher competence. Because Pondok Pesantren Nurmadani NW Montong Lisung runs three *madrasah* levels (Ibtidaiyah, Tsanawiyah, and Aliyah), the principal in the findings below refers to the head of each level, who acts in coordination with the foundation. The evidence comes from interviews with the foundation administrators, the three madrasah principals, teachers, and administrative staff, supported by field observation and program documentation. Three themes emerged: the principal's strategies for building teacher competence, the obstacles that constrained those efforts, and the solutions the principal put in place.

The Madrasah Principal's Strategies for Strengthening Teacher Competence

Strengthening teacher competence at Nurmadani NW Montong Lisung was not left to chance. Field observation showed that competence-building ran as a planned, year-round cycle rather than a set of occasional events. Before each budget year, the principal and the foundation mapped out which activities would run, when they would take place, who would attend, and where the money would come from. The activities themselves spanned internal and external workshops, the Subject Teachers' Forum (MGMP), the Teacher Working Group (KKG), curriculum training, subject-specific coaching, IT deepening, and classroom supervision by the principal and the supervisor. What stood out in the observation was the range of channels used at once, so that a teacher had more than one route toward improvement in any given semester.

The principal of Madrasah Tsanawiyah described the extent of this reach across the teaching staff:

"Alhamdulillah, our sixteen teachers at Nurmadani NW Montong Lisung have taken part in the MGMP, special curriculum training, and training designed for specific subjects. Our English teacher was sent to ELTIS training, the Indonesian and Islamic Education teachers joined workshops, and the science teacher took olympiad mentoring. The teachers also attended the socialization on the Merdeka Belajar curriculum and sat the Teacher Competency Assessment (AKG) run by the Ministry of Religious Affairs so we could see a real picture of their competence." (Misbah, Principal of MTs)

The principal consistently opened doors rather than waiting for teachers to find opportunities on their own. He gave every teacher access to activities tied to competence, from the MGMP and curriculum training to the AKG. Two teachers confirmed that this

access was real in practice. One kept his answer short and concrete: "I have joined MGMP and PPG (Pendidikan Profesi Guru, Teacher Professional Education) training, along with coaching and supervision by the supervisor" (Hasan Basri, teacher). The other described how the workshops reached beyond the *pesantren* walls:

"We hold workshops, and the principal often includes us in workshops outside the madrasah, such as the one run jointly with the MT's teachers across Praya Timur District. These cover the curriculum, how to build good lesson plans, learning media, and curriculum content, so that teacher quality keeps improving and matches what a teacher is supposed to be. Besides the outside workshops, we also run our own inside the institution by bringing in resource persons." (Busaiari Najamudin Hakim, teacher)

Alongside workshops, the foundation chairman worked with the principals to enroll teachers in the KKG (Kelompok Kerja Guru, Teacher Working Group), which he saw as a training ground for the specific classroom skills the *madrasah* wanted to see:

"I also include the teachers in the Teacher Working Group (KKG). In my view, the KKG is a very good activity that every teacher should join. After enrolling them, I really hope our teachers gain new knowledge, understand the curriculum, master the material better, manage their classes and instruction better, use the media and teaching aids the madrasah has prepared, and make use of the available technology." (Musta'i, Foundation Chairman)

Supervision provided these activities with a feedback loop. Rather than treating training as a one-way transfer, the foundation and the principals monitored how teachers were developing and where they encountered difficulties. The deputy principal explained how supervision operated on two tracks: collective and individual.

"The foundation always works to improve us teachers here, and that includes me. There is a meeting agenda run by both the foundation and the madrasah. The foundation holds a meeting once a semester to evaluate teacher competence over the term and other madrasah matters. Outside that, competence is also raised individually, so when a problem needs to be solved quickly we go straight to him to discuss it and he always offers a solution. He also stresses lesson-plan preparation for teaching, and he includes teachers in workshops and the KKG held in Praya Timur and beyond." (Salehudin, Deputy Principal)

Teachers on the receiving end perceived these efforts as genuine. One noted that participation was frequent and that she was free to look outside the *pesantren* as long as the activity served teacher quality: "I often join training such as workshops and the KKG, including the ones held inside the pesantren. The leadership also lets us join workshops elsewhere as long as they relate to education and aim to raise teacher quality. For the KKG, I have joined a few times. In my view, the foundation and the principal have done their best to build teacher competence" (Ernawati, teacher). Another framed the same point as a matter of not standing still: "Professional competence here is already good. But we still have to keep learning; we cannot be satisfied. Education keeps developing, so we have to keep adjusting. To develop professional competence, the foundation chairman usually runs training and supervision for the teachers here" (Ibrahim Kholidi, teacher).

The planning behind all of this was deliberate and layered across the three levels. The principal of Madrasah Ibtidaiyah laid out a three-part design:

"First, we hold workshops for subject teachers and homeroom teachers at every level, covering classroom teaching ability and teaching administration. Second, we instruct all teachers at every level to take competence training independently through online platforms and the official sites of the Ministry of Education and Culture and the

Ministry of Religious Affairs. Third, we carry out classroom supervision by the principal and the supervisor." (Nasipudin, Principal of MI)

Support was also targeted at teachers who needed it most, paired with encouragement to continue training: "We give managerial guidance to teachers who are less active in the learning process, and we support teachers in joining training that can raise their competence for the sake of effective teaching and learning" (Abidin, teacher). The administrative staff confirmed that these strands were formal parts of the *madrasah's* program rather than informal habits: "The competence-building program in the madrasah includes IT proficiency, learning innovation, and madrasah-level MGMP (Musyawarah Guru Mata Pelajaran, Subject Teachers' Forum), while supervision and personal coaching fall under the principal's work program" (Kamaruzzaman, administrative staff). The documented program strands are summarized in Table 2.

Table 2. Documented Teacher-Competence Programs at Pondok Pesantren Nurmadani NW Montong Lisung

No.	Program strand	Form of activity	Locus / provider
1	Professional forums	MGMP, KKG, PPG	District (Praya Timur) and <i>madrasah</i> level
2	Workshops	Curriculum, lesson-plan design, learning media	Internal (with invited resource persons) and external
3	Subject-specific coaching	ELTIS (English), science olympiad mentoring, PAI and Indonesian workshops	External training providers
4	Independent training	Self-paced online training via Kemendikbud and Kemenag portals	Individual
5	Assessment	Teacher Competency Assessment (AKG)	Ministry of Religious Affairs
6	Supervision and coaching	Classroom supervision, personal coaching, semester evaluation meetings	Principal and supervisor

Taken together, the evidence shows a strategy built on breadth and repetition rather than a single flagship program. The principal combined external exposure (district workshops, subject coaching, ministry assessment) with internal mechanisms (in-house workshops, *madrasah*-level MGMP, supervision), and tied the whole cycle to advance planning. Teachers themselves reported change from it. As one teacher put it, "Teacher competence-building at Nurmadani NW Montong Lisung has improved from year to year. You can see it in the results: teachers serve students better and improve their own performance in refining the material and the teaching methods" (Sahmbun, teacher). The strategy, in short, treated competence as something to be maintained continuously across all three *madrasah* levels, not certified once and left alone.

Obstacles the Principal Faced in Strengthening Teacher Competence

The same activities that defined the strategy also exposed its limits, the most significant of which was funding. Every program strand in Table 1 carries a cost, yet the *madrasah* drew on only two funding sources. The foundation treasurer was direct about the squeeze:

"The funds used to meet the teacher-competence program come from BOS funds. Right now Nurmadani NW Montong Lisung only has government funding through BOS and contributions from parents or the community managed by the committee. Frankly, that money cannot cover all the madrasah's activities, so we have to be more selective in planning our programs." (Usman, Foundation Treasurer)

This financial ceiling forced the *madrasah* into triage. With training, workshops, and seminars all competing for the same limited pool, the principal could not run everything that would help and instead had to rank programs and fund only the priorities. The strain reached

even routine activities. The foundation secretary described how small events were kept afloat by passing the hat among staff: "Everything we do needs funds, and here we rely only on BOS. So when there is a small event, we ask all the foundation administrators, the principal, and the teachers to chip in to make it happen" (Sumirah, Foundation Secretary). That teachers and administrators were personally subsidizing programs signals how thin the institutional budget actually was.

A second obstacle involved the teachers themselves, and here the data pointed in two directions rather than one. Some teachers were less active in the learning process and needed managerial guidance to apply what training had given them, which is why targeted coaching became part of the principal's routine. The principal of Madrasah Aliyah added a different constraint, one rooted in workload and technology:

"The obstacles we face with teacher competence are, first, that teachers spend a lot of time handling reports and administrative documents, so the time left for learning and self-development shrinks. Second, some teachers still struggle to adapt to digital learning media and modern technological devices." (Jumarno, Principal of MA)

Not every teacher fit this picture. Several described themselves as steady workshop and KKG participants who actively sought outside training, and observation confirmed real gains in service, performance, and method after these activities. The adaptation problem clustered instead among teachers weighed down by administrative load and, as the earlier introduction noted, among more senior staff adjusting to fast-moving classroom technology. Reading the accounts side by side, the obstacle was uneven rather than universal: the constraint was real for one group of teachers and largely absent for another, which is itself a finding worth stating plainly rather than flattening into a single claim about "the teachers." The obstacles and the informant evidence behind them are consolidated in Table 3.

Table 3. Obstacles to Strengthening Teacher Competence and Their Evidentiary Basis

No.	Obstacle	Nature of the constraint	Evidentiary basis
1	Limited funding	Only two sources (BOS and community contributions); cannot cover all programs	Usman (Treasurer); Sumirah (Secretary); observation
2	Facility and media gaps	Shortage of learning media and technological devices to support development	Observation; Jumarno (MA Principal)
3	Heavy administrative workload	Reporting and documentation reduce time for self-development	Jumarno (MA Principal)
4	Uneven technology adaptation	Some teachers, often those who are senior, struggle with digital media, while others adapt well.	Jumarno (MA Principal); observation
5	Variable teacher engagement	A subset of teachers is less active in learning and requires coaching.	Abidin (teacher); observation

What ties these obstacles together is that they compound one another. Limited funding narrows the facilities and training the *madrasah* can offer; thin facilities and heavy administrative loads then make it harder for teachers to adapt to the technology on which the strategy depends. The principal was therefore not facing a single barrier but a chain of linked constraints, each one tightening the others. This is why the solutions in the next theme lean so heavily on stretching scarce resources and sequencing programs, rather than on any single fix.

Solutions the Principal Implemented to Address the Obstacles

Faced with linked constraints, the principal responded with a set of workarounds rather than one decisive move, and the through-line was making limited resources reach further. The first response targeted the teachers who needed the most help. As one teacher

described it, the principal paired individual managerial guidance with active encouragement to train: "We give managerial guidance to teachers who are less active in the learning process, and we support teachers in joining training that can raise their competence for the sake of effective teaching and learning" (Abidin, teacher). The point of this pairing was to ensure that competence gained in training actually landed in the classroom, closing the gap between attending an activity and changing practice.

The second response widened the routes to development so that a shortfall in one channel did not stall a teacher's growth. The principal of Madrasah Ibtidaiyah described a design that combined institutional provision with self-directed, low-cost learning:

"First, we hold workshops for subject teachers and homeroom teachers at every level, covering classroom teaching ability and teaching administration. Second, we instruct all teachers at every level to take competence training independently through online platforms and the official sites of the Ministry of Education and Culture and the Ministry of Religious Affairs. Third, we carry out classroom supervision by the principal and the supervisor." (Nasipudin, Principal of MI)

Directing teachers to free official portals was a deliberate answer to the funding ceiling, since it let development continue without drawing on the contested budget. The principal of Madrasah Aliyah framed the same logic as a forward-looking stance: "The solution we offer is to raise competence training continuously, to build collaboration among educators, and to use the right technological support" (Jumarno, Principal of MA (Madrasah Aliyah, Islamic senior high school)). Continuity and peer collaboration cost little yet keep the cycle moving, and they turn the technology obstacle from a barrier into something teachers work on together rather than alone.

The third response protected teachers' access to external development despite the internal shortfalls. The principal and foundation gave teachers the freedom to join workshops and the KKG (Kelompok Kerja Guru, Teacher Working Group) outside the *pesantren* whenever the activity served teacher quality, as one teacher confirmed: "I often join training such as workshops and the KKG, including the ones inside the *pesantren*. The leadership also lets us join workshops elsewhere as long as they relate to education and aim to raise teacher quality" (Ernawati, teacher). Opening external doors was a way to compensate for the limited activities the *pesantren* could fund internally, effectively borrowing capacity from the wider district network.

The fourth response addressed the funding constraint head-on through selective, advance planning. The treasurer's account made clear that scarce funds forced the *madrasah* to fund only priority programs, and the foundation chairman described how that selection was built into the annual cycle:

"We plan the teacher competence activities before the budget year begins, around November and December. In that planning, we discuss which programs will run, when they will run, what their goals are, who will be included, and where the budget will come from." (Musta'i, Foundation Chairman)

Planning the calendar and the funding together, months ahead, was how the *madrasah* kept a full program alive on a partial budget. The solutions and the obstacles they answer are mapped in Table 4.

Table 4. Mapping of Solutions to Obstacles

No.	Obstacle addressed	Solution implemented	Informant basis
1	Variable teacher engagement	Individual managerial guidance plus encouragement to train	Abidin (teacher)
2	Funding limits; workload	Self-directed training via free Kemendikbud and Kemenag portals	Nasipudin (MI Principal)

3	Technology adaptation	Continuous training, peer collaboration, targeted use of technology	Jumarno (MA Principal)
4	Limited internal activities	Freedom to join external workshops and KKG (Kelompok Kerja Guru, teacher working group) across the district	Ernawati (teacher)
5	Limited funding	Selective, priority-based program planning before the budget year	Usman (Treasurer); Musta'i (Chairman)

Read as a whole, the solutions form a coherent response to the chain of constraints identified in Theme 2 rather than a scatter of unrelated fixes. Where funding was the binding limit, the principal reached for free and external resources; where teacher engagement and technology were the limit, he reached for coaching, collaboration, and continuous practice; and where the calendar and budget threatened to collide, he pulled planning forward so priorities were set before the money was committed. None of these fully removed the underlying obstacles, and the informants were candid that not every planned program could run. What the evidence shows instead is a principal managing scarcity deliberately, keeping a continuous competence cycle in motion across all three *madrasah* levels by stretching every available resource as far as it would go.

Discussion

The first finding, that the principal built teacher competence through a broad and repeating cycle rather than a single flagship program, aligns with international evidence on what makes professional development work. Research on distributed leadership shows that principals raise teaching quality most effectively when they create recurring, collaborative opportunities for growth rather than isolated events, and when development is woven into the ordinary rhythm of school life (Galdames-Calderón, 2023; Nadeem, 2024). What happened at Nurmadani NW Montong Lisung fits this pattern closely, since workshops, the MGMP (Musyawarah Guru Mata Pelajaran, subject teachers' forum), the KKG (Kelompok Kerja Guru, teacher working group), subject coaching, and classroom supervision operated as strands of one continuous program planned before each budget year. Longitudinal work on teacher learning similarly finds that sustained, job-embedded activity outperforms sporadic training in shaping classroom practice (Sancar et al., 2021). The contribution of this study at this point is to show that breadth and repetition, rather than the intensity of any single activity, were what kept competence development alive in a small *pesantren* operating three *madrasah* levels at once.

Supervision emerged as the mechanism that turned training into classroom practice, and here the data speak to leadership theory rather than to training design alone. Studies of distributed and collaborative leadership report that supervision raises professional competence most when teachers experience it as guidance and shared responsibility rather than top-down inspection (Galdames-Calderón, 2023; Liu et al., 2021). The two-track supervision described by the deputy principal, semester-long collective evaluation paired with immediate individual consultation, is a working instance of that collaborative model. When teachers feel guided rather than policed, they tend to commit more fully to changing their practice, including their use of new tools (Bellibaş et al., 2021). Read together, these findings suggest that supervision at Nurmadani functioned less as inspection and more as a feedback loop that closed the gap between attending an activity and changing behavior in the classroom.

The second finding, the chain of linked constraints, connects to a large international literature on teachers' welfare, working conditions, and performance. Cross-national evidence indicates that working conditions such as leadership support and manageable workload shape teacher motivation and satisfaction, which in turn affect the quality of instruction, and that these effects run through motivation rather than acting on quality directly (Toropova et al., 2021; Sims, 2020). The Nurmadani case illustrates this indirect

pathway from the resource side, since with only BOS funds and community contributions, and with staff occasionally contributing personally for small events, the *madrasah* could not fund every program that would have helped. Limited funding narrowed facilities and training, which in turn made administrative overload and uneven technology adaptation harder to overcome. The study's contribution here is to trace how these constraints compound one another rather than acting in isolation, a chain effect that the welfare literature implies but rarely maps concretely within a single institution.

A methodologically important feature of the findings is that the technology-adaptation obstacle was uneven rather than universal, and reporting it honestly strengthens the analysis. Several teachers described themselves as active participants who sought out external training, while the difficulty clustered among those weighed down by administrative work and among more senior staff adjusting to fast-moving classroom tools. This pattern matches evidence that time, workload, and self-efficacy, rather than access to devices alone, are the decisive barriers to teachers' technology integration (Mercader & Gairin, 2020; Backfisch et al., 2021). Supplying devices without easing administrative load would therefore leave part of the problem untouched, because the binding constraint for these teachers was time and confidence as much as availability. Presenting this variation, rather than flattening it into a single claim about the teachers, reflects the disconfirming-case logic expected of rigorous qualitative work.

The third finding, the principal's set of resource-stretching solutions, is where the study's central contribution becomes clearest. Rather than solving each obstacle with dedicated funding it did not have, the principal recombined the free and low-cost resources already within reach, using official Kemendikbud (Kementerian Pendidikan dan Kebudayaan, Ministry of Education and Culture) and Kemenag (Kementerian Agama, Ministry of Religious Affairs) training portals in place of paid courses, district workshops and the KKG (Kelompok Kerja Guru, Teacher Working Group) in place of costly in-house provision, peer collaboration in place of external consultants, and advance priority-setting so that a full calendar could survive a partial budget. This pattern is best understood as bricolage, the practice of making do by creatively recombining available resources under constraint, a mechanism established in the literature on organizations that operate in resource-scarce environments (Fisher, 2012; Servantie & Rispa, 2020). Framing school leadership through this lens turns scarcity from a passive backdrop into an active driver of practice. The synthesis of the three themes into a single explanatory model is presented in Figure 1.

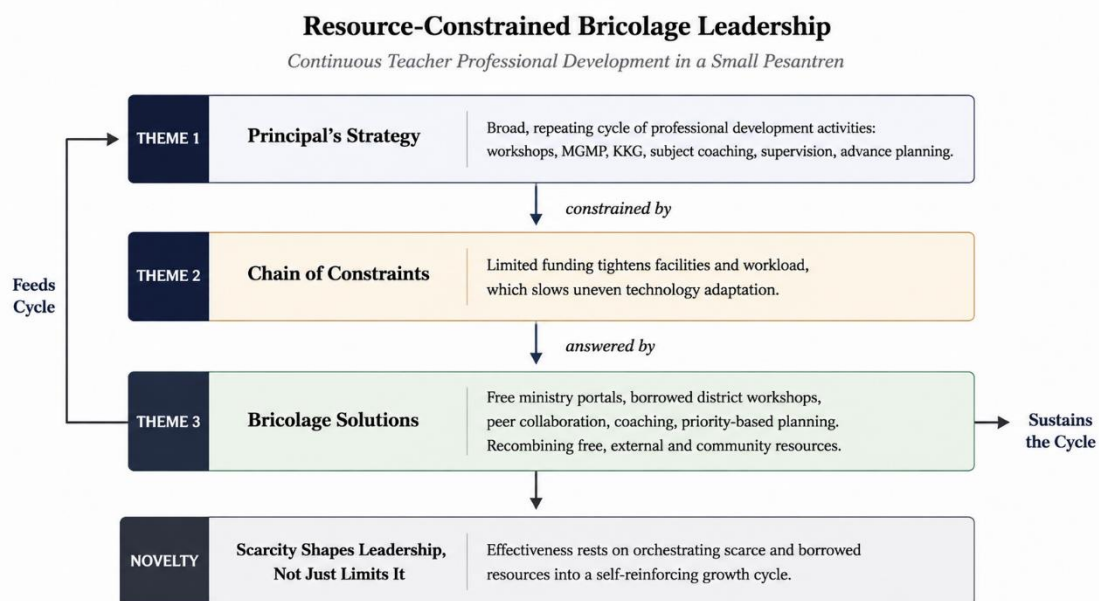


Figure 1. Synthesis model of resource-constrained, bricolage-driven leadership for continuous teacher professional development

The novelty of this study lies in that synthesis. Much of the existing literature treats teacher-competence strategies, welfare constraints, and leadership style as separate topics, whereas the Nurmadani case shows them as one connected system in which resource scarcity is not merely a barrier to be lamented but a condition that actively shapes a distinctive leadership response. The specific contribution is a model of resource-constrained, bricolage-driven leadership for continuous teacher professional development in a small Islamic boarding school, in which the principal sustains a full development cycle by recombining free, external, and community resources under deliberate advance planning. This reframes the familiar observation that funding is limited into an actionable insight, namely that what distinguishes an effective principal in a low-resource *pesantren* is not the size of the budget but the capacity to orchestrate scarce and borrowed resources into a continuous, self-reinforcing cycle of teacher growth. For policy, it suggests that support for *pesantren* should strengthen this orchestrating capacity through planning support, access to free training infrastructure, and relief from administrative overload, rather than assuming that competence development stalls simply for want of direct funding.

CONCLUSION

This study set out to understand how a *madrasah* principal strengthens teacher competence under conditions of limited funding and incomplete facilities, and it found that the principal did so by planning a continuous cycle of training and supervision while recombining free, external, and community resources to keep that cycle running. Several limitations qualify these findings. The research examined a single *pesantren*, so its conclusions describe one institution rather than a pattern that can be generalized to *pesantren* elsewhere. The evidence rested mainly on interviews, observation, and documentation gathered within a bounded period, which captured practices as they stood rather than how they change across several academic years. The analysis also relied on participant accounts that the researcher could not fully verify against independent measures of teacher performance. Future studies could address these gaps by comparing several *pesantren* with differing resource levels, by following one institution longitudinally, or by pairing qualitative accounts with measurable indicators of teaching quality to test how far resource-constrained leadership actually shifts classroom practice.

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