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BRIDGE model and relational-restorative approach for deep learning competency in Sekolah Rakyat

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ABSTRACT

Sekolah Rakyat serves children from underprivileged households in vulnerable social environments, requiring teachers to strengthen their professional competencies in accordance with Indonesia's national immersive learning policy (Permendikdasmen Nomor 13 Tahun 2025). This program aims to strengthen teachers' competencies in designing immersive learning through the BRIDGE Model (Building Resilient and Integrated Development for Governance Excellence). This integrated framework addresses student social polarization and teacher pedagogical development simultaneously. This program was implemented because external factors led students to form cliques that disrupted class unity, and because a substantial gap existed between teachers' aspirations and their capacity to implement immersive learning. The program design uses a research-based community service with participatory action research methodology involving 12 teachers from 4 mentoring groups as subjects through three sequential phases: 1) Online conceptual preparation; 2) Face-to-face practical mentoring; and 3) Consolidation of coaching clinic governance. Self-assessment on five sub-competencies serves as the main instrument. The program resulted in an overall average increase. Group 4 recorded the highest increase, as well as a decrease in scores for three participants who initially had high scores, which was interpreted as a Dunning-Kruger recalculation indicating deeper pedagogical awareness of the authentic complexities of deep learning practices.

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ABSTRAK

Sekolah Rakyat melayani anak-anak dari rumah tangga pra-sejahtera di lingkungan sosial yang rentan, sehingga mengharuskan guru memperkuat kompetensi profesional sesuai dengan kebijakan pembelajaran mendalam nasional Indonesia (Permendikdasmen No. 13 Tahun 2025). Program ini bertujuan untuk memperkuat kompetensi guru dalam merancang pembelajaran mendalam melalui Model BRIDGE (Building Resilient and Integrated Development for Governance Excellence), sebuah kerangka kerja terintegrasi yang menangani polarisasi sosial murid serta pengembangan pedagogis guru secara bersamaan. Program ini dilaksanakan karena terdapat pembentukan kelompok di antara murid yang didorong oleh faktor eksternal sehingga memecah kesatuan kelas, serta kesenjangan substansial antara aspirasi guru dan kapasitas mereka untuk menerapkan pembelajaran mendalam. Desain program ini menggunakan layanan masyarakat berbasis penelitian dengan metodologi penelitian tindakan partisipatif yang melibatkan 12 guru dari 4 kelompok mentoring sebagai subjek melalui tiga fase berurutan: 1) Persiapan konseptual daring; 2) Mentoring praktik tatap muka; dan 3) Konsolidasi tata kelola coaching clinic. Penilaian diri pada lima sub-kompetensi berfungsi sebagai instrumen utama. Program ini menghasilkan peningkatan rata-rata secara keseluruhan. Grup 4 mencatatkan peningkatan tertinggi serta penurunan skor pada tiga peserta yang awalnya memiliki skor tinggi, yang diinterpretasikan sebagai rekalkibrasi Dunning-Kruger, yang menunjukkan kesadaran pedagogis yang lebih dalam tentang kompleksitas autentik praktik pembelajaran mendalam.

Kata Kunci: model BRIDGE; pembelajaran mendalam; pendekatan relational-restorative; pengembangan profesional guru; Sekolah Rakyat

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INTRODUCTION

Inclusive quality education for communities in socioeconomic vulnerability remains a persistent challenge in global education systems, a concern placed at the center of Sustainable Development Goal 4 (SDG 4), which mandates inclusive and equitable quality education and specifically targets equal access for children in vulnerable situations (see: <https://digitallibrary.un.org/record/3923923/files/>). Global monitoring data indicate that even where countries meet their national benchmarks by 2030, the world as a whole will still fall short of the ambition set out in SDG 4 (see: https://unesdoc.unesco.org/ark:/48223/pf0000380387_eng). Data from the Program for International Student Assessment (PISA) 2022 indicate that academic achievement gaps between students from low and high socioeconomic backgrounds remain substantial across OECD countries and many participating education systems, including those in Southeast Asia (see: <https://doi.org/10.1787/53f23881-en>). In Indonesia, this challenge intensifies because national curriculum policy has moved decisively toward deep learning, mandating that all educators implement meaningful, mindful, and joyful approaches.

Teachers in community-based and nonformal educational settings still lack the structured professional development needed to implement this mandate in practice (Sutomo & Siregar, 2022). Sekolah Rakyat (People's School) in Bandung Regency, established to serve children from pre-prosperous households, exemplifies this structural gap. Preliminary field studies conducted by the service team revealed layered complexity across three interconnected dimensions: student characteristics, socio-ecological environmental dynamics, and teacher preparedness. Students live in highly socially vulnerable environments where informal local groups and intercommunity conflict are prevalent. Classroom observations confirmed that external social dynamics are directly carried into the school ecosystem: students affiliated with outside informal groups form exclusive factions, producing polarization, exclusion of unaffiliated peers, and interactional anxiety.

Field interviews further revealed that limited affective support at home manifests at school through externalizing behaviors such as emotional outbursts, attention-seeking, and resistance to cooperative engagement, consistent with longitudinal evidence that lower parental support predicts increased externalizing behavior problems among adolescents (Goagoses et al., 2025). Regarding teacher capacity, most educators at Sekolah Rakyat have not yet received structured training tied to the shift toward deep learning. This is not due to a lack of willingness, since Indonesian teachers have been found to approach deep learning with genuine enthusiasm, even as their pedagogical confidence in implementing it remains only moderate (Subiyantoro et al., 2024). A training needs analysis conducted at a comparable Indonesian school points to the same underlying issue, showing teacher scores falling below established standards in lesson planning, teaching methodology, and student engagement (Fariha et al., 2025).

Looking more specifically at which parts of deep learning prove hardest, teachers struggle most with designing authentic assessments and facilitating structured reflection, precisely the sub-competencies the approach depends on most heavily (Baihaqi et al., 2025). Taken together, these gaps reflect a broader regulatory-practice divide already identified in Indonesian curriculum reform (Sudirman & Pandang, 2025). The scholarly literature documents prior programs addressing analogous challenges. Training grounded in socio-emotional competency development strengthens teachers' self-efficacy in managing student behavioral difficulties encountered in vulnerable community schools (Jennings et al., 2017). Professional learning communities that integrate action research cycles generate more durable capacity improvements than single, discrete training events, and collaborative reflective practice has been shown to improve instructional quality and student outcomes (Potvin et al., 2024).

In the domain of inclusive classroom climate, quasi-experimental evidence shows that cooperative constructive play improves children's cooperative behavior (Lin et al., 2024), and restorative practices consistently reduce exclusionary dynamics and strengthen group cohesion (Alonso-Rodriguez et al., 2025). A critical appraisal of these programs reveals a systemic gap: most interventions remain fragmented, addressing a single problem dimension in isolation, and programs that fail to connect professional learning to real classroom contexts consistently underperform in sustaining teacher change (SivaKumar, 2023). Once external funding or intervention support withdraws, many school-based health programs lose much of their effectiveness, not because the original design was flawed, but because schools struggle to retain trained, motivated staff and to keep resources flowing amid personnel turnover and competing academic priorities (Herlitz et al., 2020). No existing model simultaneously addresses student social polarization and teacher pedagogical deficits within nonformal community-based school ecosystems facing the vulnerabilities documented at Sekolah Rakyat.

The scientific novelty of this initiative lies in the design and implementation of the Building Resilient and Integrated Development for Governance Excellence (BRIDGE) model, an original framework developed by the research team that operationalizes the six global competencies of deep learning character, citizenship, collaboration, communication, creativity, and critical thinking across three simultaneously active pillars: building community resilience, integrating teacher and student development, and institutionalizing governance excellence, a competency framework first articulated in "*Deep Learning: Engage The World Change The World*" by Fullan et al. Unlike prior programs that treat student welfare and teacher professional development as separate undertakings, the BRIDGE Model deploys deep learning not merely as a pedagogical target but as the structural logic connecting classroom social healing with teacher capacity development.

Based on this situational analysis, the principal problems addressed are 1) Elevated classroom social polarization driven by external informal group dynamics; 2) insufficient affective support fueling externalizing behaviors; 3) teachers' pedagogical competency gaps in designing deep learning; and 4) the absence of institutionalized module and reflection systems. The research question guiding this study is: How effective is the BRIDGE Model in enhancing Sekolah Rakyat teachers' competency in designing deep learning, as measured by pre-post changes in self-assessment scores across five sub-competencies? Accordingly, this article analyzes the effectiveness of the BRIDGE Model and the Relational-Restorative Approach in improving teachers' pedagogical competencies, reducing classroom social exclusion, and building sustainable academic governance at Sekolah Rakyat Terintegrasi 16 Bandung.

Literature Review

Deep Learning as a Pedagogical Framework for Vulnerable Communities

The deep learning framework defines genuine learning as the holistic development of six global competencies, often called the 6Cs: character, citizenship, collaboration, communication, creativity, and critical thinking. These competencies mark a fundamental shift from surface-level content transmission to cultivating capacities for engaged participation in complex environments. Deep learning is particularly relevant for Sekolah Rakyat serving vulnerable populations because it frames competency development as socially embedded practice rather than abstract academic achievement. Within the BRIDGE model, deep learning was operationalized across three classroom dimensions: mindful learning through emotional regulation and present-moment engagement, meaningful learning by anchoring instruction to students' real-world social contexts, and joyful learning through cooperative play-based strategies that dissolve factional boundaries (Li & Li, 2024; Lin et al., 2024; Santos Alves Peixoto et al., 2021).

Permendikdasmen Nomor 13 Tahun 2025 tentang Perubahan Atas Permendikbudristek Nomor 12 Tahun 2024 mengenai Kurikulum pada Pendidikan Anak Usia Dini, Jenjang Pendidikan Dasar, dan Jenjang Pendidikan Menengah, mandates these three dimensions as required characteristics of all Indonesian classroom learning experiences (see: <https://www.kemendikdasmen.go.id/pengumuman/13206-permendikdasmen-no13-tahun-2025-tentang-perubahan-permendikbudristek-no12-tahun-2024>). The character dimension of the 6Cs is especially salient in nonformal school settings, where training needs analyses have documented persistent gaps between teachers' competency and the standards required to cultivate character values through instructional practice (Maulia et al., 2024). Research on deep learning implementation in Indonesian contexts shows that teachers in community-based schools face unique obstacles: diverse subject-area backgrounds complicate module standardization, and the affective demands of working with socially vulnerable students require competencies that conventional training programs rarely address (Baihaqi et al., 2025; Subiyantoro et al., 2024). Quinn et al.'s 6Cs framework in the book *"Dive into Deep Learning: Tools for Engagement"* addresses these obstacles by framing each competency as both a learning outcome for students and a professional development target for teachers, aligning what teachers develop with what they are expected to cultivate in learners.

The BRIDGE Model: Operationalizing Deep Learning as Integrated Intervention

The BRIDGE model is an integrated intervention framework the research team developed to address Sekolah Rakyat's layered vulnerabilities. Its three pillars each operationalize specific 6Cs competencies across the full scope of school functioning. The Building Resilience by Ungar in *"Multisystemic Resilience: Adaptation and Transformation in Contexts of Change"* pillar strengthens the school ecosystem's mental and emotional adaptive capacity, operationalizing the character and citizenship dimensions of deep learning by developing the affective foundations for sustained engagement under socio-ecological pressure. The integrated development pillar links teachers' pedagogical competency growth directly to meeting students' psychosocial needs, operationalizing Fullan et al.'s book title, *"Deep Learning: Engage the world change the world"* and the principle that academic development and character formation are inseparable in genuine deep learning ecosystems. The governance excellence pillar embeds program gains into the institution's ongoing operations through a bank of teaching modules, a repository of assessment materials, and standardized reflection protocols. This design responds to evidence that school-based programs typically lose much of their effect once external funding ends, largely because staff turnover and the loss of trained personnel erode what was built during the intervention period (Herlitz et al., 2020).

Social Polarization, Externalizing Behavior, and the Teacher's Affective Role

Social exclusion within school settings is consistently associated with adverse cognitive and socio-emotional developmental outcomes, particularly in socioeconomically vulnerable environments (Beißert et al., 2022). Students marginalized from peer networks experience interactional anxiety, declining motivation, and elevated behavioral risk. The infiltration of external informal group dynamics into classrooms intensifies social fragmentation in ways incompatible with the collaborative demands of deep learning (Alan et al., 2023). The Relational-Restorative Approach addresses this by rebuilding interpersonal bonds through inclusive mechanisms rather than exclusion or punishment (Alonso-Rodriguez et al., 2025). Cooperative constructive play embedded within this approach significantly improves children's cooperative scores, with effects that strengthen over follow-up measurement periods (Lin et al., 2024).

Teachers who respond to students' psychosocial needs function as secondary caregivers, providing the haven that students from unstable home environments need to engage authentically in deep learning (Li & Li, 2024). Research confirms that teacher-facilitated social-emotional learning interventions reduce social anxiety and withdrawal behaviors in adolescent students (Sousa et al., 2023). Social exclusion within school settings is consistently associated with adverse cognitive and socio-emotional developmental outcomes, particularly in socioeconomically vulnerable environments (Beißert et al., 2022). Students marginalized from peer networks experience interactional anxiety, declining motivation, and elevated behavioral risk. The infiltration of external informal group dynamics into classrooms intensifies social fragmentation in ways incompatible with the collaborative demands of deep learning (Alan et al., 2023).

The Relational-Restorative Approach addresses this by rebuilding interpersonal bonds through inclusive mechanisms rather than exclusion or punishment (Alonso-Rodriguez et al., 2025). Restorative circle practices foster peer-based relationships and positive development across diverse school contexts, with documented effects on group cohesion and student belonging (Mas-Exposito et al., 2022). Cooperative constructive play embedded within this approach significantly improves children's cooperative scores, with effects that strengthen over follow-up measurement periods (Lin et al., 2024). Classroom-based peer relationship interventions show that structured, teacher-guided interactive activities effectively promote social inclusion and social competence among students (Hassani, 2025).

Teachers who respond to students' psychosocial needs function as secondary caregivers, providing the haven students from unstable home environments need to engage authentically in deep learning (Li & Li, 2024). Research confirms that teacher-facilitated social-emotional learning interventions reduce social anxiety and withdrawal behaviors in adolescent students (Sousa et al., 2023). Programs that integrate content focus, active learning, coherence, adequate duration, and collective participation consistently predict gains in teacher self-efficacy and instructional effectiveness (Lipka et al., 2025). Within this broader pattern, intensive workshop formats appear to benefit participants with weaker baseline skills disproportionately more; experimental evidence shows that the specific instructional skills novice teachers initially struggle with can be substantially strengthened through targeted, structured coaching, rather than being left to develop slowly through years of on-the-job trial and error (Cohen et al., 2020).

Measuring these shifts reliably, however, depends on the instrument used. Likert-scale self-assessment tools have demonstrated validity for capturing changes in teachers' self-perceived competency across pre-post program designs, so long as the instrument is calibrated to detect subtle gradations of change rather than only broad categorical shifts (Taherdoost, 2022). This calibration issue also helps explain a counterintuitive pattern documented in professional development research: participants who scored highest before an intervention sometimes show lower scores afterward, not because their competency declined, but because direct encounter with task complexity corrects an overconfident prior self-evaluation, a form of metacognitive recalibration that produces more accurate self-assessment (Tan et al., 2025). This recalibration effect should be read as distinct from actual competency regression; if anything, it signals deepened pedagogical awareness rather than a loss of skill.

METHODS

This program used a Research-based Community Services design integrated with Participatory Action Research (PAR) methodology by Kemmis et al. in *"The Action Research Planner: Doing Critical Participatory Action Research (Vol. 200)."* PAR was selected because it positions school stakeholders as active agents of change and inquiry rather than passive recipients of external expertise, directly operationalizing the 6Cs collaboration and communication dimensions at the program design level (Smit et al., 2024). The program was conducted at Sekolah Rakyat Terintegrasi 16 Bandung, Kabupaten

Bandung, from June 30 through July 2026, involving 12 teachers across four mentoring groups by subject-area cluster. Group formation followed an initial needs assessment considering participants' pedagogical background and readiness level, consistent with evidence that group differentiation based on entry-level capacity optimizes professional development intervention effectiveness (Cleary et al., 2022). The following section describes the specific phases through which this PAR cycle was operationalized and how they align with the three pillars of the BRIDGE model.

Participants and Setting

To ensure methodological transparency, this section first outlines the operational stages through which the PAR cycle unfolded, then details its alignment with the BRIDGE model's three pillars in the subsequent subsection.

BRIDGE Model Implementation Phases

The BRIDGE model operationalizes deep learning across three PAR-aligned implementation phases, each targeting specific 6Cs competencies in teachers and students simultaneously. These phases followed the three-stage PAR cycle of planning, action, and observation-reflection, applied iteratively so that findings from each phase informed refinements in the next: the planning stage centered on conceptual preparation and mentoring-group formation, the action stage centered on classroom practice and structured observation, and the reflection stage centered on coaching and governance consolidation. Figure 1 presents the detailed flow of each phase.

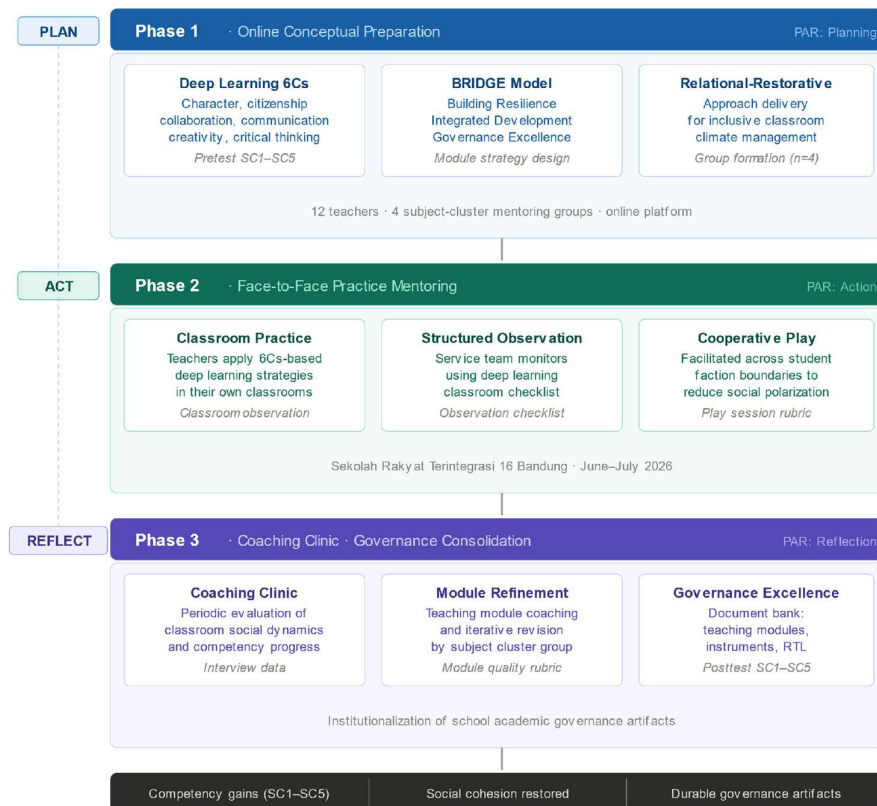


Figure 1. Implementation Flow of the BRIDGE Model Deep Learning Community Service Program (Three-Phase PAR Cycle)

Source: Developed by the Authors, 2026

Data Collection Instruments and Analysis

Competency measurement used four complementary instruments: 1) 9-item multiple-choice test assessing conceptual understanding of deep learning; 2) Likert-scale self-assessment (1 to 5) on five sub-competencies: (SC1) deep learning concepts, (SC2) teaching module development, (SC3) assessment instruments, (SC4) written reflective practice, and (SC5) follow-up action plan (RTL); 3) Structured classroom observation monitoring interaction dynamics and faction dissolution; and 4) Teaching module quality rubric as a tangible program output. The minimum improvement threshold of +0.20 on the 1-to-5 scale was set based on the conventional benchmark for a small but meaningful effect size in behavioral and educational research, in line with Cohen in the book titled “*Statistical Power Analysis for the Behavioral Sciences*”. Survey-based instruments used with Indonesian teachers have proven useful for identifying competency gaps and generating actionable program recommendations. The study used quantitative descriptive analysis for self-assessment and multiple-choice data, and inductive thematic analysis for observation notes and interview data.

RESULTS AND DISCUSSION

All 12 participants completed both the pretest and posttest instruments, yielding a 100% response rate. At the closing ceremony, additional teachers from Sekolah Rakyat Terintegrasi 16 Bandung attended the program's formal closing proceedings.

Table 1. Participants

No.	Name	Subject Area	Group	Grp
1	AMF	Pancasila Education Teacher	Group 2	2
2	RN	ICT / Informatics Teacher	Group 4	4
3	RA	ICT Teacher	Group 2	2
4	WL	Physics Teacher	Group 3	3
5	FRF	Sociology Teacher	Group 4	4
6	YW	Physics Teacher	Group 1	1
7	HS	Sundanese Language Teacher	Group 4	4
8	AN	Physical Education Teacher	Group 4	4
9	NK	Indonesian Language Teacher	Group 1	1
10	DAS	English Teacher	Group 2	2
11	TP	Guidance and Counseling	Group 3	3
12	NYM	Natural Science Teacher	Group 2	2

Source: *PkM Pretest Data, 2026*

Table 1 presents the complete participant list and mentoring group assignments.

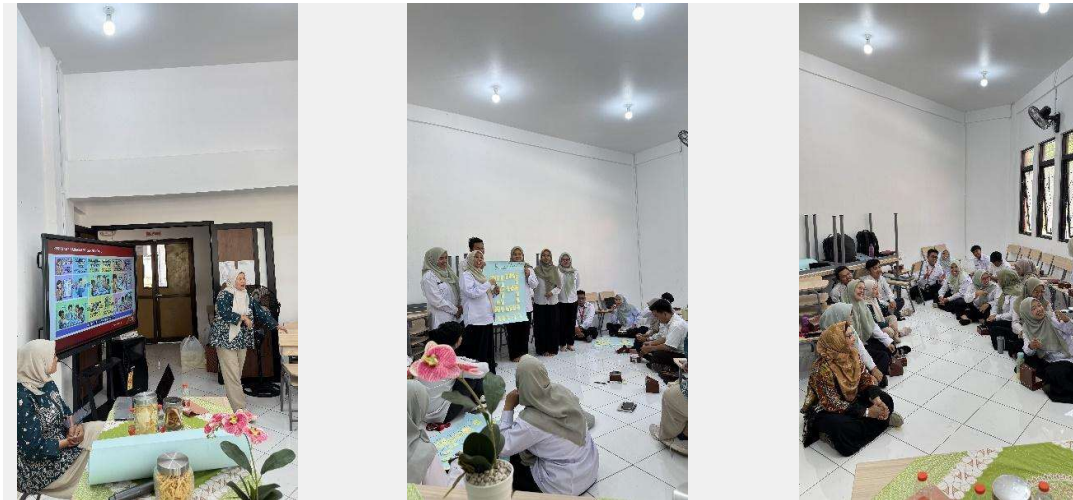


Figure 2. BRIDGE Model Workshop: Plenary Session and Small Group Mentoring Activity
Source: Community Service Team Documentation, 2026

Figure 2 shows the plenary session and small-group mentoring activities, followed by participant focus.

Table 2. Self-Assessment Pre-Post Comparison (n=12)

Sub-Competency	Pretest	Posttest	Delta	Trend
SC1 - Deep Learning Concepts	4.42	4.58	+0.17	up
SC2 - Teaching Module Development	4.33	4.33	0.00	stable
SC3 - Assessment Instruments	4.08	4.17	+0.08	up
SC4 - Written Reflective Practice	4.17	4.25	+0.08	up
SC5 - Follow-up Action Plan (RTL)	4.08	4.25	+0.17	up
Overall Mean	4.22	4.32	+0.10	up

Note: Scale 1 to 5.

Source: PkM Self-Assessment Data, 2026

Multiple-choice test data showed that all participants scored 100% on both pretest and posttest, indicating a ceiling effect from uniform response patterns. The instrument could not discriminate between competency levels; competency change analysis therefore relies entirely on self-assessment data. **Table 2** presents mean score comparisons across all five sub-competencies.

Table 3. Individual Score Comparison (SC3, SC5, Overall)

Name	Grp	Pre SC3	Pre SC5	Post SC3	Post SC5	Pre Avg	Post Avg	Delta
H.S.	4	4	3	5	4	3.80	4.80	+1.00
N.K.	1	3	4	5	4	3.60	4.60	+1.00
R.N.	4	3	3	4	4	3.40	4.20	+0.80
A.M.F.	2	3	4	4	4	3.40	4.00	+0.60
F.R.F.	4	3	3	3	3	3.40	3.60	+0.20
T.P.	3	3	3	3	4	3.40	3.60	+0.20
W.L.	3	5	4	4	5	4.60	4.60	0.00

Name	Grp	Pre SC3	Pre SC5	Post SC3	Post SC5	Pre Avg	Post Avg	Delta
A.N.	4	5	5	5	5	5.00	5.00	0.00
D.A.S.	2	5	5	5	5	5.00	5.00	0.00
N.Y.M.	2	5	5	4	5	5.00	4.60	-0.40
Y.W.	1	5	5	4	4	5.00	4.00	-1.00
R.A.	2	5	5	4	4	5.00	3.80	-1.20

Source: *PkM Self-Assessment Data, 2026*

Table 3 presents individual score comparisons on the two sub-competencies with the lowest pretest baselines, SC3 and SC5, alongside overall means, ordered by magnitude of improvement.

Table 4. Group-Level Self-Assessment Comparison

Group	Pre Mean	Post Mean	Delta	n	Target Met
Group 1	4.30	4.30	0.00	2	No
Group 2	4.60	4.35	-0.25	4	No
Group 3	4.00	4.10	+0.10	2	No
Group 4	3.90	4.40	+0.50	4	Yes

Source: *PkM Self-Assessment Data, 2026*

Table 4 summarizes group-level results against the minimum improvement threshold. The results indicate that only Group 4 met the minimum improvement threshold, with an increase of 0.50 points, whereas Groups 1-3 did not meet the required threshold.

Discussion

Effectiveness of the BRIDGE Model: Analysis and Interpretation

The overall mean self-assessment score improved from pretest to posttest, with SC1 and SC5 recording the highest sub-competency gains. While SC3 and SC4 showed comparatively modest improvement, a pattern consistent with prior evidence that authentic assessment design and structured reflection represent the sub-competencies Indonesian teachers find hardest to master within deep learning implementation (Baihaqi et al., 2025), suggesting these two sub-competencies may require dedicated follow-up support beyond what a single mentoring cycle can deliver. Group 4, which entered the program with the lowest baseline, achieved the greatest improvement and exceeded the minimum success threshold.

Groups 1 and 2 did not meet the threshold, attributable to pretest ceiling effects rather than intervention failure. These results indicate that the BRIDGE model, applied through differentiated subject-cluster mentoring, effectively shifts teachers' perceived competency in deep learning design, particularly among participants with greater initial development needs. This is consistent with experimental evidence that structured, targeted coaching can substantially strengthen the specific skills novice teachers initially struggle with, rather than leaving that growth to years of unassisted trial and error (Cohen et al., 2020). Teacher professional development structured around reflective collaboration and real classroom needs has been consistently linked to meaningful gains in instructional practice, particularly when implementation includes sustained mentoring rather than one-time training events (Tobin et al., 2025).

Interview Findings and Qualitative Corroboration

Qualitative interview data provided substantive corroborative depth. Teachers who achieved the largest improvements, H.S. and N.K. (both delta +1.00), described the program as their first structured opportunity to engage with deep learning as an actionable framework rather than a policy abstraction. This echoes earlier evidence that Indonesian teachers approach deep learning with genuine enthusiasm even as their pedagogical confidence in implementation remains only moderate (Subiyantoro et al., 2024). Group 4 participants specifically noted that subject-cluster grouping allowed them to develop teaching modules grounded in their disciplines' real classroom contexts, modules they could realistically implement. This experience of contextual relevance is a well-documented primary driver of knowledge transfer from professional development programs to classroom practice (Lipka et al., 2025).

Participants who recorded score declines at posttest, R.A., Y.W., and N.Y.M., consistently described the program as revealing the authentic complexity of assessment design and deep reflection in ways they had not previously encountered. This downward recalibration among initially high-scoring participants, where direct engagement with task complexity corrects overconfident prior self-evaluation, has been documented as a metacognitive accuracy marker in professional development research (Tan et al., 2025). Participants who remained below the threshold at posttest, F.R.F. and T.P., expressed in interviews that the density of module development tasks within the program timeline exceeded their current capacity, identifying a structural need for extended follow-up support.

Comparison with Prior Research and Community Service Studies

The pattern of greater relative benefit among participants with lower baseline competency aligns with evidence that novice teachers gain more in self-efficacy from intentional instructional coaching than veteran teachers, for whom the same coaching format needs to be differentiated to retain comparable value (Walsh et al., 2020). This same logic helps explain the competency gains observed in SC1 and SC5, the sub-competencies most directly activated by the PAR cycle's planning and reflection stages, which are consistent with findings that action research-structured professional learning produces more durable outcomes than isolated training sessions (Potvin et al., 2024). The stagnation in SC2, however, runs counter to this trend, since pre-service teachers following comparable training have been reported to show measurable quality improvements in teaching module outputs (Noor et al., 2025); this divergence is attributable to the heterogeneity of subject-area backgrounds among current program participants, which complicated module standardization.

At the classroom level, systematic evidence corroborates the observed dissolution of student faction boundaries during Phase 2 cooperative play sessions: restorative and cooperative interventions reduce exclusionary peer dynamics and promote prosocial cohesion in contexts of social fragmentation (Alonso-Rodriguez et al., 2025). This finding also aligns directly with quasi-experimental evidence that cooperative constructive play specifically strengthens children's cooperative behavior in fragmented peer settings (Lin et al., 2024). A similar pattern emerges from community service programs conducted in Indonesian contexts. Training built around collaborative dialogue and structured reflection has been shown to shift participants' professional competencies and leadership readiness, even when the intervention itself is brief and delivered through mentoring rather than extended coursework (Budiono & Karamoy, 2026). A training needs survey conducted at an elementary school in West Java points in the same direction: teachers there were found to fall below government competency standards, which led the researchers to propose a structured model that adds reflection and extension phases specifically designed to keep competency gains from fading once the intervention ends (Dikdik et al., 2025).

Strategic Contributions, Limitations, and Future Directions

The BRIDGE model addresses the structural weakness common to many educational community service programs: the tendency to isolate professional development from the broader institutional and relational context in which teachers work (SivaKumar, 2023). It does so while operationalizing the six global competencies- character, citizenship, collaboration, communication, creativity, and critical thinking- that anchor the deep learning framework itself. By embedding the Relational-Restorative Approach within a 6Cs-structured teacher competency cycle, the model creates conditions in which improvements in classroom social climate and instructional quality mutually reinforce each other. This is reflected in its differentiated group mentoring structure, informed by initial needs assessment, which operationalizes the design principle that professional development programs must explicitly account for participant heterogeneity in baseline readiness to generate equitable outcomes, in line with Darling-Hammond et al. (2017) in *“Effective Teacher Professional Development”*, and which draws further support from the self-regulated learning perspective: teachers enter professional development with varying levels of metacognitive awareness, and effective programs must scaffold self-regulation skills alongside content knowledge, in line with Zimmerman & Moylan in *“Handbook of Metacognition in Education”*.

The model's governance excellence pillar, in turn, offers a structural response to a pattern documented across community and school-based programs, in which measurable gains fade soon after the intervention team withdraws and hands responsibility back to local staff (Herlitz et al., 2020). A cross-national analysis echoes this finding: the countries producing the strongest, longest-lasting improvements in teaching quality are not the ones running the most workshops, but the ones that pair ongoing learning opportunities with institutional structures built to outlast any single training cycle (Farabi et al., 2025). This directly addresses the regulatory-practice divide previously identified in Indonesian curriculum reform, in which policy mandates outpace the structured support needed to realize them in practice (Sudirman & Pandang, 2025). Transforming 21st-century learning, in other words, requires more than building pedagogical competency in the moment; it requires embedding that competency into practices the institution carries forward on its own.

Regarding program limitations, exclusive reliance on self-assessment as the primary competency measure represents a methodological boundary, since self-reported gains must be validated through expert panel assessment of participant-produced teaching module quality and structured classroom observation to substantiate competency claims beyond perceived self-efficacy (Copur-Gencturk & Thacker, 2021). The modest magnitude of several observed deltas (e.g., +0.08 for SC3 and SC4) also raises the possibility that the self-assessment instrument was not sufficiently calibrated to detect subtle gradations of change, a limitation noted in prior guidance on self-report instrument design (Taherdoost, 2022). Looking ahead, later iterations of the program should build in these complementary measures, along with a two-track mentoring design that separates participants by their starting competency level, so that those who have not yet crossed the competency threshold continue to receive coaching support even after the formal program ends. Extending the model to other Sekolah Rakyat sites across West Java would also open the door to cross-site comparison, giving the program a way to test and refine itself against a wider range of contexts.

CONCLUSION

This program demonstrates that the BRIDGE model, when implemented through a differentiated three-phase PAR cycle, effectively strengthens teachers' competency in designing deep learning at Sekolah Rakyat. The program achieved its primary objective: measurable improvement in teachers' perceived competency across deep learning sub-competencies, with the most significant gains occurring among

participants who entered the program with the greatest development needs. Score recalibration among initially high-scoring participants emerged as an additional finding not anticipated in the original program design; interpreted through the lens of metacognitive accuracy research, this recalibration indicates deepened pedagogical awareness rather than program failure. Future program design should incorporate three recommendations.

First, add expert-assessed evaluation of participant-produced teaching modules as a complementary instrument alongside self-assessment to validate competency claims at the level of actual instructional products. Second, establish a two-track mentoring structure differentiated by entry-level competency to address ceiling effects among participants with high baseline competency. Third, the institutionalized governance artifacts produced during Phase 3, the teaching module bank, assessment instrument repository, and RTL documentation system, should be evaluated at three-month and six-month intervals post-program to assess the durability of impact. The BRIDGE model is proposed as a replicable framework for community service programs targeting nonformal educational institutions in socially vulnerable contexts, with potential to scale up to additional Sekolah Rakyat sites across West Java.

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