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DITA-AI STRATEGY IN CLINICAL SUPERVISION FOR ACCELERATING LEARNING QUALITY: IMPLEMENTATION OF KAPAS GULA MODULE 125 BASED ON THE EDUCATION REPORT CARD AT SMP NEGERI 1 KENDAL

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ABSTRACT

Low learning quality and weak initial Academic Ability Test (*Tes Kemampuan Akademik/TKA*) results at SMP Negeri 1 Kendal (State Junior Secondary School 1, Kendal), Indonesia, were traced to slow, manual academic supervision with little concrete modeling for teachers. The 2024 Education Report Card recorded a Learning Quality score of 60.00 (Moderate), and an initial TKA Mathematics simulation of only 32.10. This paper describes the implementation and documented impact of the DITA-AI Strategy (Data-Driven, Insight-Generating with AI, Targeted Coaching, Action & Assessment), applied as part of the KAPAS GULA Module 125 teacher-capacity program in Kendal Regency. The study is a single-school, descriptive best-practice case study led by the school principal, comparing baseline (2024) and post-intervention (2025-2026) documentation, without a comparison group or inferential statistical testing. The strategy combined data-based diagnosis, structured prompt-engineering on generative-AI platforms to draft teaching modules and higher-order-thinking-skill (HOTS) item banks, and three-stage clinical supervision under a teacher-as-final-validator principle. Documented changes include a reduction in pre-supervision analysis time from 3-4 days to a principal-estimated 15-30 minutes per teacher; a rise in teachers delivering HOTS-based instruction from 35.00% to 87.50%; an increase in the Learning Quality indicator from 60.00 to 70.83; and higher mean TKA scores in Indonesian Language (65.60) and Mathematics (41.84), both above the national average. These findings are consistent with the strategy's effectiveness, but because the design is a single-site descriptive

account without a control group, causal claims cannot be statistically confirmed and require further quasi-experimental or multi-school verification.

KEYWORDS: Clinical supervision; DITA-AI strategy; KAPAS GULA Module 125; Education Report Card; Academic Ability Test. (TKA)

INTRODUCTION

The 2024 Education Report Card (Rapor Pendidikan) of SMP Negeri 1 Kendal recorded a Learning Quality indicator (D.1) score of 60.00 (Moderate category), officially designated by the Ministry of Education, Culture, Research, and Technology as the school's top-priority indicator for improvement (Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi, 2024). This score was underpinned by a Teaching Method sub-indicator (D.1.3) of only 59.00, reflecting the continued dominance of one-way, conventional lecturing. These conditions were mirrored in poor results on an initial Academic Ability Test (TKA) simulation, with Mathematics at 32.10 and Indonesian Language at 58.50 — both below the minimum achievement criterion. Baseline mapping also found that 65.00% of teachers still relied on Lower Order Thinking Skills (LOTS) instruction, while only 35.00% consistently designed Higher Order Thinking Skills (HOTS) based lessons and assessments.

These weaknesses were compounded by an academic supervision practice that was formalistic and inspection-oriented, with pre-supervision analysis taking 3-4 days per teacher because it was performed manually without a standardized, prescriptive guide. This delay reduced supervisory feedback to mere administrative compliance, losing the reflective momentum that should be central to clinical supervision (Glickman et al., 2021; Utami & Rahmawati, 2024).

To address this gap, the school principal implemented KAPAS GULA Module 125 (Adaptive ICT Utilization in Learning) through the DITA-AI Strategy (Data-Driven, Insight-Generating with AI, Targeted Coaching, Action & Assessment). The strategy rests on four premises: (1) clinical supervision through reflective dialogue that builds psychological safety (Glickman et al., 2021; Utami & Rahmawati, 2024); (2) data-driven decision making that treats the Education Report Card and TKA diagnostic data as the single source of truth for identifying problems (Bernhardt, 2018; Schildkamp, 2019; Supriadi et al., 2023); (3) generative AI as a cognitive amplifier that reduces routine analytical workload (Marr, 2023; Ng et al., 2024; Smith & Miller, 2025; Siti et al., 2024); and (4) a teacher-as-final-validator (human-in-the-

loop) principle, under which teachers retain final pedagogical authority over AI-generated output to guard against bias or hallucination.

This paper aims to: (1) describe the operational steps of clinical supervision through the DITA-AI Strategy at SMP Negeri 1 Kendal; and (2) analyze documented changes in Education Report Card indicators, the proportion of teachers delivering HOTS-based instruction, and student TKA achievement following the intervention. As a methodological note stated upfront, this paper is a descriptive best-practice report rather than a controlled experimental study; findings should therefore be read as associative evidence from a single school case, not as generalizable causal proof.

MATERIALS AND METHODS

This paper reports a single-site descriptive case study of a school principal's instructional leadership practice, rather than Classroom or School Action Research (PTK/PTS) or a controlled experiment. The design compares baseline conditions (2024) with post-intervention conditions (2025-2026) at the same school, without a comparison group from other schools.

The intervention involved 8 teachers of the subjects assessed by the TKA (Indonesian Language and Mathematics) across grades VII-IX, and 253 grade IX students as the ultimate beneficiaries. The main facility was a computer laboratory equipped with one interactive digital display panel, functioning as a collaborative supervision hub.

Data were drawn from four official documentary sources: (1) the Ministry of Education, Culture, Research, and Technology's Education Report Card profiles for 2024 and 2025; (2) the official recapitulation of the National Academic Ability Test (TKA) results administered on 6-16 April 2026 (N = 253 students); (3) clinical-supervision instruments (pre-observation, classroom observation, and post-observation notes); and (4) the principal's own records of time spent on pre-supervision analysis, which are self-estimated and have not been independently verified with a time-measurement instrument.

Data were analyzed descriptively and comparatively by computing the difference (delta) between baseline and post-intervention scores for each indicator, without inferential statistical testing. Because there was no control group, the possible influence of factors other than the DITA-AI Strategy — such as a concurrent rise in national average scores, student maturation, or other quality-improvement programs running in parallel — cannot be ruled out under this design. Student names that appeared in full in the original internal report have been reduced to initials in this manuscript for the ethical protection of minors' data; the authors and

the school must ensure documented parental/guardian consent and institutional clearance before any individual student achievement data is published.

RESULTS AND DISCUSSION

Results

Implementation of the DITA-AI Strategy

The DITA-AI Strategy was implemented in four sequential stages. First, Data-Driven Analysis: the principal reviewed the 2024 Education Report Card to set priority indicators — Learning Quality (60.00), Numeracy (63.95), and Literacy (71.37) — and examined initial TKA simulation results to identify specific weaknesses, namely inferential comprehension of non-fiction text in Indonesian Language and algebraic reasoning (particularly two-variable linear equation systems, SPLDV) in Mathematics.

Second, Insight-Generating with AI: the principal developed a structured prompt-engineering formula built on four elements — Role, Context, Task, and Constraint — distributed to teachers as a ready-to-use template. Weakness data from the first stage were entered into generative-AI platforms (Gemini and ChatGPT were cited as examples) to produce draft Problem-Based Learning and Inquiry Learning scenarios, contextualized local-content reading stimuli, and C4-C5 level reasoning item banks. According to the principal's records, this stage reduced preparation time from roughly 3-4 days to 15-30 minutes per subject; this figure is a subjective estimate rather than a verified time measurement.

Third, Targeted Coaching: clinical supervision was carried out in three meetings — pre-observation, classroom observation, and post-observation (within 24 hours of the lesson) — centered at the Collaborative Supervision Hub (a computer laboratory with an interactive digital panel). Senior teachers who experienced technological discomfort were paired with more technology-adaptive colleagues under a peer-coaching (AI-Buddy) scheme.

Fourth, Action & Assessment: teachers implemented self-validated teaching modules (teacher-as-final-validator principle) in the classroom, followed by evaluation of both teacher pedagogical performance and student learning outcomes, feeding the results back as baseline data for the next improvement cycle.

Challenges and Mitigation

Three main challenges were identified during implementation. First, a digital-literacy gap and discomfort among some senior teachers in constructing effective prompts, mitigated through the AI-Buddy peer-coaching scheme and ready-to-use prompt templates requiring only the

input of subject-matter variables. Second, limited hardware — only one interactive digital panel was available — mitigated through a rotating schedule organized by subject-teacher groups and use of screen-mirroring to individual teacher devices. Third, the risk of AI output bias or hallucination (stimuli or contexts inconsistent with local Kendal context), mitigated by enforcing the teacher-as-final-validator principle, requiring teachers to review and correct every AI-generated draft before classroom use.

Changes in Education Report Card Indicators

Table 1 compares priority Education Report Card indicator scores before (2024) and after (2025) the intervention period.

Indicator	2024 Score (Baseline)	2025 Score	Difference	Note
D.1 Learning Quality	60.00 (Moderate)	70.83 (Good)	+10.83	Top national tier (1-20%)
D.1.3 Teaching Method	59.00	66.52	+7.52	Driver sub-indicator of D.1
A.1 Literacy Ability	71.37	80.99	+9.62	-
A.2 Numeracy Ability	63.95	65.28	+1.33	Proportion of proficient students +10.15 pts

Source: adapted from SMP Negeri 1 Kendal's 2024 and 2025 Education Report Card documents (Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi, 2024, 2025).

The rise in Learning Quality (+10.83 points) coincided with an increase in the Teaching Method sub-indicator (+7.52 points), descriptively consistent with the assumption that changes in classroom practice contributed to the improved score. However, because the Education Report Card is also influenced by factors not measured in this study — such as year-to-year changes in the assessment instrument or national trends — the specific quantitative contribution of the DITA-AI Strategy cannot be isolated under this descriptive design.

Changes in Teacher Proportion and TKA Achievement

The proportion of teachers consistently delivering HOTS-based instruction rose from 35.00% (baseline) to 87.50% (7 of 8 targeted teachers) after coaching. Table 2 compares official TKA mean scores (August 2026, N = 253 students) against district, provincial, and national averages.

Subject	Baseline (Simulation)	Official Result	TKA Kendal District Mean	National Mean
Indonesian Language	58.50	65.60	65.90	62.22
Mathematics	32.10	41.84	41.42	40.28

Source: adapted from the official recapitulation of SMP Negeri 1 Kendal's TKA results (Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi, 2026).

The mean Indonesian Language score (65.60) exceeded the national average (62.22) but was slightly below the Kendal district average (65.90); the mean Mathematics score (41.84) exceeded both the district (41.42) and national (40.28) averages. At the sub-element level, mastery of two-variable linear equation systems (SPLDV) reached 48.93, above the district (43.92), provincial (44.79), and national (40.73) averages. These differences are nominally small (ranging roughly 0.3-8.6 points), and the original report did not include significance testing or variability measures (e.g., standard deviation); claims of 'exceeding' district or national averages should therefore be read as descriptive positioning rather than statistically confirmed differences.

The original report also noted individual top achievers: a perfect Indonesian Language score attained by two students (initials: A.A.N.M., grade 9B; and M.R.H.A.R., grade 9E) and the highest Mathematics score (initials: D.S.P., grade 9F, 83.33). These individual results are anecdotal ($n = 3$ of 253 students) and do not represent the class- or school-wide average; they are included here only for illustration, and publication of full student identities would require documented parental/guardian consent.

DISCUSSION

Novelty and Reflection

Compared with conventional supervision, the DITA-AI Strategy altered four practice dimensions: the basis of analysis (from subjective perception to Education Report Card and TKA hierarchy data), pre-supervision analysis time (from 3-4 days to a principal-estimated 15-30 minutes), the character of feedback (from general and abstract to ready-to-review draft teaching modules and item banks), and the role of technology (from a mere word-processing tool to a cognitive amplifier under the teacher-as-final-validator principle). Qualitatively, the principal reported a shift in teachers' perception of supervision — from administrative inspection toward reflective dialogue perceived as psychologically safer — and a growing habit of using quality data as the starting point for instructional planning.

Sustainability and Replication

Sustainability was pursued through three channels: integrating the data-based approach into the School Operational Curriculum (KOSP) and the School Budget Plan (RKAS), formalizing an AI-based supervision standard operating procedure (including mandatory human verification), and institutionalizing a teacher learning community as a forum for sharing prompt templates and teaching modules. The principal reported that the strategy could be replicated without costly infrastructure — using teachers' own laptops and standard projectors — and had been disseminated at a district-level principals' working forum (MKKS), although the effectiveness of replication at other schools was not documented in the original report.

Study Limitations

Several methodological limitations should be stated explicitly so that the findings are not interpreted beyond the strength of the evidence. First, the single-school descriptive design without a control group cannot separate the effect of the DITA-AI Strategy from confounding factors (national trends, year-to-year changes in assessment instruments, student maturation). Second, the teacher sample size is small ($n = 8$), warranting caution in generalizing to a wider teacher population. Third, the reported 85% reduction in analysis time is based on the principal's subjective estimate rather than a third-party verified time measurement. Fourth, no significance testing or variability measure was applied to the TKA comparisons against regional averages, so the relatively small nominal differences should not be interpreted as statistically meaningful. Fifth, the use of individual student achievement data requires clarity on ethical consent status, which was not specified in the original document. Further studies using a quasi-experimental design, inter-school comparison groups, and a verified time-measurement instrument would strengthen the validity of claims about the DITA-AI Strategy's impact.

CONCLUSION

The DITA-AI Strategy was implemented through four structured stages — Data-Driven Analysis, Insight-Generating with AI, Targeted Coaching, and Action & Assessment — as an application of KAPAS GULA Module 125 in the principal's clinical supervision practice at SMP Negeri 1 Kendal. Documentation shows changes consistent with the intervention's goals: an increase in the Learning Quality score on the Education Report Card (60.00 to 70.83), a rise in the proportion of teachers delivering HOTS-based instruction (35.00% to

87.50%), and higher mean TKA scores in Indonesian Language and Mathematics that exceeded the national average. These changes are consistent with the effectiveness of the DITA-AI Strategy, but because the study design is descriptive and did not include a control group, the causal relationship between the intervention and the observed outcomes cannot be statistically confirmed. The practice offers a low-cost, replicable operational model for other schools, but its claimed success should be treated as a hypothesis warranting further testing rather than as final causal evidence. For school principals, the practice suggests grounding supervision in authentic school data and adopting structured prompt templates while enforcing the teacher-as-final-validator principle; for supervisors and education authorities, it suggests facilitating dissemination through principal working forums and integrating AI-assisted data-based planning into district-level supervision policy; for future researchers, it suggests testing the DITA-AI Strategy with a quasi-experimental or multi-school comparative design, supported by verified time-measurement instruments and statistical significance testing.

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