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Model Siklikal Program Pengembangan untuk Keunggulan Operasional dan Nilai Berkelanjutan: Studi Kasus PT DA

A Cyclical Model of Development Programs for Operational Excellence and Sustainable Value: A Case Study of PT DA

Setia Permana*
School of Business and Management, Institut Teknologi Bandung, Indonesia
setia.permana@sbm-itb.ac.id

Abstract

The intense competition in the commercial property sector places human capital at the centre of sustaining asset value. Yet development programs often fail to address the real challenges faced by technical employees. This study examines the operational decline of the Estate Management (EM) division at PT DA, a 51-hectare premium business district in Jakarta, whose Key Performance Indicator (KPI) fell to 89.43 in 2024. Analysis revealed a Training Relevance Gap of approximately 45%—technical staff rated functional training importance at 90.91% while satisfaction with its relevance stood at only 45.45%. Applying a mixed-methods case study with a design thinking diagnostic framework, the study diagnosed root causes through Ishikawa Root Cause Analysis, the Organizational Culture Assessment Instrument (OCAI), and longitudinal training data (2022–2024). Findings expose a Volume vs. Value Paradox driven by a dominant Hierarchy culture, collapsing technical training to 15% of topics in 2023. The study prototyped a Bloom's Taxonomy-calibrated Competency Dictionary, a role-differentiated Training Needs Analysis (TNA) Matrix with 70:20:10 delivery indicators, and a Kirkpatrick Level 3 Behavioral Audit Protocol, synthesized into the Cyclical Feedback Model—a closed-loop system that permanently aligns L&D investment with frontline operational execution.

Keywords: *Human Capital Intervention, Competency Vacuum, Blended Learning Methodology, Behavioral Transfer, Cyclical Feedback Model*

Abstrak

Sumber daya manusia merupakan kunci utama mempertahankan nilai aset di industri real estat komersial yang kompetitif, namun program pengembangan sering kali tidak sesuai dengan kebutuhan nyata karyawan teknis di lapangan. Penelitian ini mengkaji penurunan kinerja divisi Manajemen Real Estat PT DA, sebuah kawasan bisnis premium seluas 51 hektar di Jakarta, di mana KPI turun ke angka 89,43 pada tahun 2024. Analisis mengungkap Kesenjangan Relevansi Pelatihan sebesar ~45%—staf teknis menilai pentingnya pelatihan fungsional di 90,91%, namun kepuasan terhadap relevansinya hanya 45,45%. Menggunakan studi kasus metode campuran dengan kerangka diagnostik design thinking, penelitian mendiagnosis akar masalah melalui Analisis Tulang Ikan Ishikawa, OCAI, dan data pelatihan longitudinal (2022–2024). Temuan mengungkap Paradoks Volume vs. Nilai yang didorong budaya Hierarki dominan, menyebabkan pelatihan teknis anjlok ke 15% dari total topik pada 2023. Penelitian memprototipatkan Kamus Kompetensi berbasis Taksonomi Bloom, Matriks TNA berbasis peran dengan indikator penyampaian 70:20:10, dan Protokol Audit Perilaku Kirkpatrick Level 3, yang disintesis menjadi Model Umpan Balik Siklikal—sistem tertutup yang menyelaraskan investasi L&D secara permanen dengan eksekusi operasional lapangan.

Kata Kunci: Intervensi Modal Manusia, Kekosongan Kompetensi, Metodologi Pembelajaran Campuran, Transfer Perilaku, Model Umpan Balik Siklikal

1. Introduction

The premium commercial real estate sector in Jakarta ranks among Southeast Asia's most fiercely competitive operational environments. Managing a 51-hectare, ISO-certified integrated business district—with Zero Down Time electricity supply, internationally recognised green building certifications, and a 24/7 multi-department security operation—demands a distinctly specialised workforce proficient not in administrative compliance but in the technical mastery of complex mechanical,

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electrical, landscaping, and security systems (Lee et al., 2024). Real estate organisations recognise that localised technical expertise constitutes their most critical and non-replicable competitive asset (Letdin et al., 2024; Phillips & Kathy, 2009).

PT DA, the official manager of a premium integrated district in Jakarta's Golden Triangle, demonstrates this dynamic acutely. At the corporate level, the organisation recorded commendable Employee Engagement of 77.36% and Satisfaction of 75.2% in 2024, suggesting an organisationally stable climate. However, a cross-divisional analysis of the 2024 Training Availability and Relevance Scores revealed a crisis concentrated in the Estate Management (EM) division. Among general PT DA employees, a moderate ~23% functional training relevance gap was observed (importance: 85.25%; satisfaction: 61.74%). Within the EM division—responsible for infrastructure, M&E systems, landscape, and security—technical staff rated functional training importance at 90.91%, yet satisfaction with its relevance collapsed to 45.45%: a ~45% Training Relevance Gap nearly double the company average. This gap coincided with a sharp KPI decline from a peak of 93.94 in 2023 to 89.43 in 2024. Table 1 presents the severity of operational KPI declines by position that materialised from this gap.

Table 1. ***Breakdown of Critical KPI Declines by Position (2023 vs. 2024)***

Position	Work Objective	Target vs Actual 2023	Score 2023	Target vs Actual 2024	Score 2024
Security Supervisor	Security response time	Target 10 min / Actual 5 min	100%	Target 5 min / Actual 10 min	**50%**
Landscape Leader	Program completion	Target 100% / Actual 100%	100%	Target 100% / Actual 69.75%	**69.75%**
Chief Engineer	MEP routine & non-routine monitoring	Target 100% / Actual 100%	100%	Target 100% / Actual 70%	**70.00%**
Infrastructure Leader	Project completion / Maintenance	Target 90% / Actual 88%	97.78%	Target 7 proj / Actual 5 proj	**71.43%**
M&E Leader	Project success rate	Target 100% / Actual 100%	100%	Target 70% / Actual 60%	**85.71%**

Source: PT DA Internal KPI Records (2023–2024).

Research consistently demonstrates that structured, role-relevant training directly determines operational execution quality (Badriyah et al., 2025; Trihudiyatmanto et al., 2025). When organisations persistently fail to provide functional competency development, organisational effectiveness degrades measurably (Christenson, n.d.; Putra et al., 2024). The KPI declines in Table 1 are not

a sudden workforce failure—they are the predictable, lagged consequence of a systemic curriculum misalignment made in 2023.

Four theoretical frameworks underpin this study's diagnostic and intervention design. First, Katz's Skills of an Effective Administrator (1974; Peterson & Van Fleet, 2004) establishes that skill requirements are hierarchically determined: top executives require Conceptual skills, middle managers require Human skills, and frontline technical staff fundamentally require Technical skills. PT DA violated this principle by deploying Conceptual training to its Technical workforce—what this study terms the Volume vs. Value Paradox. Second, Training Needs Analysis (TNA) provides the diagnostic architecture to identify precise, role-specific competency gaps, ensuring L&D investment targets verified functional deficits rather than logistical training-hour targets (Aini et al., 2024; Salahu & Nahoro, 2025). Third, the 70:20:10 experiential learning framework distributes capability building across 70% on-the-job assignments, 20% social coaching, and 10% formal instruction (Johnson et al., 2018; McCauley, 2025)—though Clardy (2018) and Amenumey and Yaw (2023) emphasize the 70% must be deliberately structured and supervisor-managed. Fourth, Kirkpatrick's (1994) Level 3 Behavioral transfer is the minimum valid standard for proving that training has altered daily operational habits (Ikramina & Gustomo, 2014; Ramadhan et al., 2022; Smidt et al., 2009). The Competency Dictionary is further calibrated by Bloom's Taxonomy (Bloom, 1956; Krathwohl, 2002) to distinguish between the Remembering and Understanding levels of generic training and the Applying and Analysing levels operationally required by estate management roles.

Conceptually, this study integrates two established academic paradigms into the Cyclical Feedback Model. The Action Research Cycle (Coghlan & Brannick, 2005) provides the continuous, iterative structure—diagnosis, action planning, implementation, and evaluation—that ensures each improvement outcome informs the next diagnostic cycle. The ADDIE Instructional Design framework (Branch, 2009) provides the training architecture: Analysis, Design, Development, Implementation, and Evaluation. Together, these paradigms form a closed-loop system where Level 3 behavioral audit results recalibrate the TNA of the subsequent cycle, permanently tethering the curriculum to estate floor operational reality.

Prior research has examined training effectiveness broadly; however, diagnosing and reversing a technical competency vacuum in a premium estate management environment through a closed-loop, evidence-based framework remains unaddressed (Lee et al., 2024; Sanchez & Pascual, 2025). This study fills that gap through four research questions: (RQ1) What are the root causes of the ∼45% Training Relevance Gap? (RQ2) What specific technical competencies are required per role? (RQ3) How can a 70:20:10 architecture close identified deficits? (RQ4) How can Kirkpatrick Level 3 audits validate on-floor skill transfer? The objective is to engineer the Cyclical Feedback Model—a sustainable, closed-loop human capital intervention.

2. Research Methodology

This study employs an Applied Mixed-Methods Case Study structured around a Diagnostic Problem-Solving Framework adapted from design thinking principles (Amenumey & Yaw, 2023), theoretically grounded in insider action research where the researcher operates as a complete member of the organisation to generate transferable knowledge (Coghlan & Brannick, 2005). Rather than testing a statistical hypothesis, the methodology systematically maps lagging operational failure

indicators to leading HR strategy indicators. The research scope is limited to the EM division of PT DA—specifically Infrastructure, Mechanical & Electrical (M&E), Landscape, and Security—with corporate-wide data serving as the comparative benchmark.

Research Design

The research design follows four integrated sequential stages aligned with design thinking. Stage 1—Empathize & Define: quantitative diagnosis of the 2024 Employee Satisfaction & Engagement Survey (ESS) and longitudinal KPI data to precisely define the ~45% Training Relevance Gap and its operational consequences. Stage 2—Ideate: qualitative root cause extraction using the Ishikawa (Fishbone) Diagram across four analytical domains (Method, Measurement, Management, Milieu), the 5 Whys logical chain, and the OCAI based on Quinn's Competing Values Framework—derived by mathematically transforming raw 1–5 Likert ESS data into a 100-point OCAI cultural profile through proportional normalization (OCAI_Quadrant = L_Quadrant ÷ T × 100). Stage 3—Prototype: intervention design producing the Bloom-calibrated Technical Competency Dictionary, localised TNA Mapping Matrix with 70:20:10 delivery indicators, and three representative curriculum modules. Stage 4—Test & Sustain: establishment of the Kirkpatrick Level 3 Behavioral Audit Protocol as the continuous systemic feedback mechanism.

Data Collection

Primary data was collected exclusively through in-depth semi-structured interviews with strategic decision-makers selected through purposive sampling: the President Director, HR Director, and Estate Management Director. These executives determine strategic direction, organisational culture, and L&D resource allocation. Data triangulation was applied to minimise researcher bias inherent in insider action research—executive strategic perspectives were verified against objective secondary data. Secondary data comprised: (a) Historical Training Realization Logs (2022–2024) tracking topic composition and average hours per employee; (b) the 2024 ESS benchmarking functional training importance (90.91%) against relevance satisfaction (45.45%); (c) Employee Competency Assessment Scores and KPI records (2022–2024); and (d) Job Descriptions and Standard Operating Procedures (SOPs) serving as the empirical foundation for the Technical Competency Matrix.

Data Analysis

Five structured analytical steps linked empirical findings to the final framework. Step 1—Quantitative Transformation: ESS Likert data mapped to the Competing Values Framework quadrants via proportional normalization, generating the OCAI cultural profile without additional survey fatigue. Step 2—Descriptive Trend Analysis: plotted variance in training topic composition against the lagging operational KPI to expose the Volume vs. Value Paradox. Step 3—Systemic Root Cause Analysis: Ishikawa Diagram categorised structural deficits across four domains, followed by 5 Whys analysis tracing symptoms to foundational origin. Step 4—Competency Gap Analysis: Bloom's Taxonomy calibration combined with Katz's Administrative Theory to quantify role-specific cognitive deficits against SOP requirements. Step 5—Framework Synthesis: integrated all findings through the 70:20:10 architecture and

Kirkpatrick Level 3 imperative to produce the Cyclical Feedback Model. Table 2 presents the Data Analysis Method Matrix.

Table 2. ***Data Analysis Method Matrix***

Diagnostic Phase	Primary Objective	Data Source	Analytical Tool	Expected Output
Quantitative Transformation	Diagnose organizational culture without re-surveying	2024 ESS Likert Data	Proportional Normalization (CVF mapping)	100-pt OCAI Cultural Profile
Symptom Identification	Quantify L&D failure and operational impact	2024 ESS; KPI Scores 2022–2024	Descriptive Trend Analysis	Validation of ~45% Relevance Gap and 89.43 KPI drop
Root Cause Analysis	Extract strategic rationale behind competency vacuum	Training Logs (2022–2024); Interviews; OCAI	Ishikawa Diagram; 5 Whys	Core failure: Evaluation Blindness
Competency Alignment	Define exact technical requirements per role	Departmental SOPs; Job Descriptions	Katz's Theory; Bloom's Taxonomy	Localised Technical Competency Dictionary
Framework Synthesis	Design cyclical HR intervention	All empirical and qualitative findings	70:20:10; Kirkpatrick Level 3	The Cyclical Feedback Model

Source: Author's Construction (2026).

3. Results and Discussion

Quantifying the Training Relevance Gap (RQ1)

Structural improvement demands a precise, empathetic, and data-driven understanding of workforce operational reality (Sanchez & Pascual, 2025). When capability development is disconnected from daily functional tasks, systemic operational friction produces diminished job satisfaction and declining performance (Sakinah et al., 2025; Salahu & Nahoro, 2025). Tables 3 and 4 quantify this friction longitudinally.

Table 3. ***Comparison Matrix of Training Hours, Employee Competency, and Satisfaction (2022–2024)***

Year	Avg Hours — All Staff	Avg Hours — EM Staff	KPI — All Staff	KPI — EM Staff	Satisfaction — All Staff	Satisfaction — EM Staff
2022	7.88	8.16	82.73	86.02	88.24%	66.67%

2023	4.34	4.45	88.65	**93.94**	86.42%	83.33%
2024	3.43	4.38	86.11	**89.43**	72.45%	**50.00%**

Source: PT DA Internal Training Realization Data and ESS (2022–2024). EM = Estate Management Staff.

Table 4. ***Curriculum Composition Shift — All Staff vs. EM Staff (2022–2024)***

Training Topic	2022 All	2022 EM	2023 All	2023 EM	2024 All	2024 EM
Technical Skill	35%	**40%**	18%	**15%**	15%	33%
General Knowledge	13%	10%	54%	35%	35%	24%
Leadership & Management	29%	43%	14%	31%	16%	17%
Life & Safety	23%	7%	14%	19%	34%	26%
Total Topics	**105**	**42**	**162**	**48**	**183**	**76**

Source: PT DA Internal Training Realization Data (2022–2024). All = All Staff; EM = Estate Management Staff.

Tables 3 and 4 reveal the Volume vs. Value Paradox. The 2022 curriculum's 40% technical foundation built the operational capability that peaked at KPI 93.94 in 2023—confirming the characteristic lagging relationship between training investment and output. In 2023, HR halved training hours and marginalised Technical Skills to 15%, while General Knowledge and Leadership dominated at 66%—a direct violation of Katz' (1974) hierarchical skill principle, imposing Conceptual training on a Technical workforce. The 2024 KPI crash to 89.43 and the simultaneous collapse of EM satisfaction to 50.00% are the predictable, delayed consequences of that 2023 decision. The 2024 KPI decline represents not workforce failure but the lagged, institutional consequence of structural L&D misalignment. This finding resonates with Trihudiyatmanto et al. (2025) who confirm that poorly targeted training critically impairs self-efficacy and overall performance output.

Root Cause Analysis and Cultural Diagnosis (RQ1)

The Ishikawa Fishbone Root Cause Analysis revealed structural failures across four domains. In the Method domain, chronic bias toward generalist curriculum design violated Katz's framework by imposing Conceptual training on Technical workers, reducing technical content to 15% in 2023. In the Measurement domain, exclusive reliance on Kirkpatrick Levels 1 and 2 created a validation vacuum—HR had no mechanism to verify whether trained competencies were applied on the estate floor (Azmy & Setiarini, 2023; Ikramina & Gustomo, 2014). In the Management domain, a −23% competency gap in 'Developing Others' for Security Supervisors eliminated post-training reinforcement; supervisors functioned as task executors rather than developmental coaches. In the Milieu domain, a dominant Hierarchy/Market culture incentivised logistical compliance over role-specific capability building.

The 5 Whys analysis traced these failures to a single root cause: PT DA's human capital strategy operates as a unidirectional, compliance-driven event calendar, lacking a feedback loop to align estate floor operational realities with L&D budget allocations. Table 5 presents the OCAI cultural diagnosis confirming the structural driver of this failure.

Table 5. ***OCAI Cultural Diagnosis — Existing vs. Preferred State***

Culture Archetype	Existing	Preferred	Strategic Implication for L&D
Hierarchy (Control/Rules) — Dominant	**37**	30	Incentivises generic compliance training; filling ballroom sessions administratively cheaper than localised competency mapping. 'Career Development' scored critically low at 63.85%; 'Training & Development' at 68.31%.
Market (Competition/Results)	29	**40 ↑**	Workforce aspires to competitive KPI performance but is denied functional tools. 'Customer Focus & Service Excellence' scored 79.35%—reflecting target orientation without commensurate skill support.
Clan (Mentoring/Development)	24	20	Structural coaching deficit; 'Leadership & Supervisor' relative strength at 75.83% yet no post-training reinforcement pipeline exists. 'Reward & Remuneration' at 55.45%.
Adhocracy (Innovation/Agility)	10	10	Innovation institutionally absent; 'Innovation & Continuous Improvement' at 64.22%; 'Agility & Change Management' at 66.52%—both lowest-scoring ESS categories.

Source: PT DA OCAI Survey Data derived from ESS 2024 via proportional normalization; Cameron & Quinn Competing Values Framework.

The dominant Hierarchy culture (score: 37) mathematically incentivises the generic compliance model. HR performance is measured by volume metrics—hours logged, headcount trained—rather than functional impact. This finding corroborates

Badriyah et al. (2025) who establish that employee empowerment and career development are prerequisites for meaningful job satisfaction. The desired Market quadrant increase (29 to 40) reveals a workforce aspiring to competitive capability that the prevailing culture structurally prevents. Top Management interviews, summarised in Table 6, confirmed a unanimous executive mandate for 'Predictive Ownership'—a shift from reactive compliance to proactive, data-driven estate management that directly validates the 70:20:10 architecture.

Table 6. ***Key Insights from Top Management Interviews***

Focus Area	President Director	HR Director	Estate Mgmt. Director
Culture	**Shift to Proactive:** Ask 'How can I do this 1% better today?'	Embed proactive problem-solving in daily KPIs	**Predictive Ownership:** Fix near-misses before they impact tenants
Learning	**Embedded:** Pair tech-savvy staff with veterans daily	Structured peer-to-peer knowledge transfer on the floor	**Tool-Box Talks:** Hands-on digital workflow training on-shift
Success	**Asset Valuation:** Response times, energy savings, safety records	**Operational:** Reduced incidents; higher tenant satisfaction	**SLAs:** Zero-downtime records; asset longevity
Missing Link	**Data-Driven Supervisors:** Understand the 'why' behind numbers	Bridge tactical operations with strategic thinking	**Systems Thinking:** Coordinate security, engineering, landscape as one force

Source: PT DA Top Management Semi-Structured Interviews (2024).

Bloom-Calibrated Competency Dictionary and TNA Matrix (RQ2 and RQ3)

Prototype 1: The Bloom-Calibrated Competency Dictionary

A Technical Competency Dictionary was prototyped, calibrating capability requirements across Bloom's Taxonomy cognitive levels for each EM role—ensuring training pushes employees from Remembering and Understanding (Levels 1–2), which generic training typically achieves, into Applying and Analysing (Levels 3–4), which are operationally required. Katz's framework directed the domain (Technical for frontline staff); Bloom's Taxonomy directed the proficiency depth. Table 7 presents the resulting Competency Gap Matrix.

Table 7. ***Competency Gap Matrix — Extract of Critical Deficits***

Job Role	Competency Domain	Target Level	Actual Level	Gap
M&E Staff	Facilities & Utility Management	3.0 (Operational)	2.5	−17%
M&E Staff	Technical Drawing & Design	3.0 (Operational)	2.0	**−33%**

Security Supervisor	Developing Others	4.0 (Strategic)	3.0	−25%
Landscape Staff	Environmental Measurement	2.0 (Foundational)	1.0	**−50%**

Source: PT DA Competency Assessment Data; Bloom's Taxonomy Calibration by Author (2024).

Deficits range from −17% in M&E Facilities Management to a catastrophic −50% in Landscape Environmental Measurement. The −33% gap in Technical Drawing & Design renders M&E technicians unable to reliably interpret CAD schematics, preventing them from locating utility runs, diagnosing anomalies, or coordinating with contractors without managerial intervention. The −25% supervisory gap means post-training reinforcement is absent. Clardy (2018) establishes that deficits of this magnitude cannot be closed through generic classroom instruction—they require deliberately structured experiential environments where operational muscle memory is built through repeated supervised field application.

Prototype 2: The TNA Mapping Matrix and 70:20:10 Curriculum

A localised TNA Mapping Matrix was developed to permanently eradicate the one-size-fits-all model. The matrix routes each identified deficit to its correct delivery methodology using three indicators: ✓ for Formal Training (10%); OJT for Social & On-the-Job Learning (20% & 70%); and blank for Out of Scope per Katz's (1974) framework. Table 8 presents the TNA extract for five archetypal roles.

Table 8. ***Training Needs Analysis (TNA) Mapping Extract — Five Archetypal Roles***

Competency Focus	Estate Manager	Chief Engineer	Security Supervisor	M&E Staff	Landscape Staff
Transformational Leadership	✓ & OJT	✓ & OJT	✓ & OJT	—	—
Coaching & Mentoring	✓ & OJT	✓ & OJT	OJT	—	—
Assertive Communication	OJT	OJT	✓ & OJT	—	—
Tenant Diplomacy	OJT	—	✓ & OJT	—	—
Strategic Decision Making	✓ & OJT	✓ & OJT	—	—	—
Precision Costing	✓ & OJT	✓ & OJT	—	—	—
Applied OSH (Safety)	✓	✓ & OJT	✓ & OJT	OJT	OJT
Asset Lifecycle Management	✓	✓ & OJT	—	**✓ & OJT**	—
Blueprint Literacy	—	✓	—	**✓ & OJT**	—
Material Standards	—	✓	—	OJT	OJT

Urban Ecology	✓	—	—	—	**✓ & OJT**
Urban Aesthetics	✓	—	—	—	**OJT**

Source: Author's Construction based on PT DA SOPs, Job Descriptions, and Katz (1974). ✓= Formal Training (10%); OJT = Social & Experiential (20% & 70%); — = Out of Scope.

The matrix demonstrates precision across Katz's three hierarchical skill domains. The Estate Manager (Conceptual Archetype) receives ✓ & OJT for Precision Costing and Strategic Decision Making—classroom financial models then live estate budget application—but pure OJT for Tenant Diplomacy. The Chief Engineer (Hybrid Archetype) requires ✓ & OJT for Transformational Leadership but only ✓ refreshers for Blueprint Literacy, with physical utility verification delegated to M&E Staff via OJT. The Security Supervisor (Human Archetype) bypasses formal theory for Coaching & Mentoring entirely—building this purely through OJT peer-shadowing and daily Tool-Box Talks. M&E Staff (Hard-Technical Archetype) are stripped of generic conceptual content; Blueprint Literacy is achieved through ✓ (CAD lab) followed by OJT (physical utility sweeps). Landscape Staff (Soft-Technical Archetype) concentrate exclusively on Urban Ecology (✓ & OJT) and Urban Aesthetics (pure OJT).

Three curriculum modules were prototyped. Module 1—Transformational Leadership: 10% leadership theory, 20% Executive Vision Shadowing, 70% 60-Day Delegation Sprint requiring supervisors to manage autonomous teams. Module 2—Blueprint Literacy: 10% CAD lab, 20% peer schematic review, 70% Field Blueprint Verification (physical utility sweeps documenting CAD-reality discrepancies). Module 3—Strategic Decision Making: 20% strategic debriefs, 70% Autonomous Project Ownership (supervisors independently plan and execute monthly departmental improvement initiatives). Rahman and Kamaliah (2023) confirmed in the Indonesian civil service context that implementing 70:20:10 with practical application significantly boosts participant engagement—validating this architecture's cultural fit. All modules confirm Clardy's (2018) principle: 70:20:10 must be treated as a deliberately managed methodology, not passive informal learning.

Kirkpatrick Level 3 Behavioral Audit Protocol (RQ4)

The critical lesson from the longitudinal analysis is that reliance on Kirkpatrick Levels 1 and 2 satisfaction surveys produces a harmful false sense of security about actual capability (Ikramina & Gustomo, 2014). Level 3 is required to demonstrate that knowledge has successfully transferred to actual workplace behaviour (Ramadhan et al., 2022). The study designed a 60- to 180-day Behavioral Audit Protocol managed by Department Heads—translating abstract competency expectations into concrete, observable indicators evaluated during mandatory 70% experiential assignments. Two domains are audited: Technical Competencies (e.g., whether M&E staff transition from reactive visual checks to proactive CMMS-based preventive maintenance scheduling) and General Competencies (e.g., whether supervisors demonstrate 'Predictive Ownership' by independently logging near-miss incidents). Table 9 presents the audit rubric for Drive & Dedication.

Table 9. ***Level 3 Behavioral Audit Protocol — General Competency: Drive & Dedication***

Audit Level	Behavioral Descriptor	Systemic Action Trigger
Level 1 & 2 — Reactive / Failed Transfer	Solves problems reactively only. Views maintenance as a checklist. Requires executive approval for minor deviations. No independent diagnostic effort.	**TRIGGER 20% LOOP:** Assign 1-on-1 coaching with Dept. Head. Root-cause SOP/resource barriers. Do NOT return to classroom.
Level 3 — Operational / Target Met	Logs near-misses into the digital system before escalation. Conducts root-cause analysis independently. Proposes corrective action without prompting.	**COMPETENCY CERTIFIED:** Meets Predictive SLA baseline. Proceed to next TNA cycle competency.
Level 4 — Strategic / Exceptional	Uses near-miss data trends to forecast asset failures. Consistently proposes mathematically sound preventive budget allocations before threshold breach.	**SUCCESSION PLANNING:** Nominate for accelerated executive leadership development pathway.

Source: Author's Construction based on Kirkpatrick (1994); Ramadhan et al. (2022); PT DA Executive Mandate (2024).

A critical systemic safeguard is the failure response mechanism. A behavioral audit failure prohibits returning the employee to classroom training—failure indicates a knowledge-to-habit translation deficit, not an absence of theoretical knowledge. Instead, the protocol mandates root-cause diagnosis of environmental barriers (equipment access, SOP friction, managerial reinforcement gaps) and triggers a targeted 20% domain intervention through intensive peer-shadowing or one-on-one coaching until behavioral muscle memory is established. As Smidt et al. (2009) establish, abstract operational competencies demand structured on-the-job observation for valid measurement—this protocol institutionalises that imperative.

The Cyclical Feedback Model

The synthesis of gap analysis, TNA prototypes, curriculum modules, and behavioral audit protocols culminates in the Cyclical Feedback Model. Operating as a continuous closed-loop system through four phases—(1) Diagnosis: the Bloom-calibrated Competency Dictionary generates the localised TNA Mapping Matrix, committing L&D budget only against verified deficits (Aini et al., 2024); (2) Alignment: gaps filtered through Katz's hierarchy to ensure Technical staff receive Technical capability; (3) Delivery: the verified curriculum deployed through the 70:20:10 blended architecture; (4) Evaluation: Department Heads deploy the Kirkpatrick Level 3 Behavioral Audit Protocol to test on-floor skill transfer (Azmy & Setiarini, 2023)—the model's defining innovation is that Level 3 audit results are fed directly into Phase 1 of the subsequent cycle, recalibrating the TNA against real behavioral evidence.

A critical nuance addresses the General Training Paradox. The thesis concludes that the solution is not to eradicate General Competencies such as Decision Making, Coaching, or Strategic Thinking. Katz's (1974) framework confirms that as employees ascend to supervisory roles, their need for Human and Conceptual skills exponentially increases. The Board's mandate—for data-driven supervisors capable of Systems Thinking and Strategic Execution—validated this retention. The historical failure was the delivery mechanism: one-size-fits-all ballroom seminars to a heterogeneous technical workforce. In the Cyclical Feedback Model, General Competencies are retained but role-mapped via TNA exclusively to supervisory positions and delivered through the 70% and 20% experiential and coaching domains. This finding extends Letdin et al. (2024) and Sanchez and Pascual (2025) by demonstrating that delivery architecture—not topic selection—determines whether training produces genuine behavioral change.

Implications

Theoretically, this study advances the integrated application of Katz's Administrative Skills Framework, Kirkpatrick's Evaluation Model, Bloom's Taxonomy, Action Research (Coghlan & Brannick, 2005), and ADDIE (Branch, 2009) to the premium real estate sector—a context underexplored in HRD literature. The novel configuration of Bloom's Taxonomy as a competency calibration engine within TNA provides a mathematically rigorous method for quantifying role-specific cognitive deficits in technically specialised workforces. The study also validates the 70:20:10 framework's application in a non-Western, asset-critical, high-stakes operational context (Rahman & Kamaliah, 2023), confirming Clardy's (2018) argument that structured managerial scaffolding is essential.

Practically, estate management organisations should institutionalise the TNA as a mandatory budgetary prerequisite—no L&D allocation approved without a localised competency gap analysis. The OCAI finding that a Hierarchy-dominant culture systematically incentivises generic compliance training requires restructuring L&D success metrics from hour-count targets to Kirkpatrick Level 3 behavioural certification outcomes. The 20% coaching domain must be formally encoded in Department Head annual performance appraisals to ensure behavioural transfer infrastructure is institutionally enforced rather than individually dependent (Sakinah et al., 2025).

Limitations and Future Research

Three limitations apply. First, the single-site applied case study design limits generalisability beyond PT DA's EM division. The specific competency thresholds and technical modules reflect the unique operational demands of a 51-hectare, ISO-certified premium estate and may not transfer directly to other non-technical corporate divisions. Second, the cross-sectional diagnostic nature precludes direct measurement of Kirkpatrick Level 4 (financial ROI). The Cyclical Feedback Model's long-term impact on SLA metrics—energy savings, maintenance downtime reduction, and tenant retention—requires longitudinal validation 12–24 months post-implementation. Third, the qualitative component relied on three executive informants, providing high-level strategic context but potentially underrepresenting mid-level management perspectives.

Two future research directions are recommended. First, a Kirkpatrick Level 4 Financial ROI Validation study should be conducted 12–24 months post-implementation to establish the direct causal relationship between the 70:20:10 curriculum and measurable estate SLA improvements—energy efficiency, reduced downtime, and tenant loyalty metrics. Second, Cross-Subsidiary Scalability studies should test the Cyclical Feedback Model and Bloom-calibrated Competency Dictionary across other business units with varying cultural archetypes, assessing how culture affects 70:20:10 implementation effectiveness to validate the model's universal viability (Amenumey & Yaw, 2023; Badriyah et al., 2025).

4. Conclusion

This study examined the systemic operational decline of PT DA's Estate Management division and engineered the Cyclical Feedback Model as a closed-loop human capital intervention. Four definitive conclusions emerge.

First, the 2024 KPI crash to 89.43 was caused by the Volume vs. Value Paradox—a 2023 HR decision that maximised generic training hours while collapsing technical skill training to 15%, a structural violation of Katz's (1974) hierarchical skill framework. The resulting −0.58 satisfaction gap and the multi-position KPI declines of −14% to −50% (Table 1) prove the decline was not workforce failure but the predictable, lagged institutional consequence of curriculum misalignment.

Second, the solution does not require eradicating General Competencies. Leadership, coaching, and strategic thinking remain essential for supervisory roles across a 51-hectare premium estate; their positive correlation with operational effectiveness in developing-country contexts is established (Salahu & Nahoro, 2025). The historical failure was the delivery mechanism—one-size-fits-all ballroom seminars to a heterogeneous technical workforce. In the refined solution, General Competencies are role-mapped via TNA exclusively to supervisory positions and delivered experientially.

Third, the 70:20:10 blended learning architecture is the only instructionally viable method for closing deficits of −17% to −50%. By shifting the locus of learning from classrooms to the estate floor through structured experiential assignments (70%) and managerial coaching (20%), L&D investments directly alter workforce behaviour rather than merely improve post-seminar satisfaction scores. This treats 70:20:10 as a deliberately managed, supervisor-accountable methodology, not passive informal learning (Clardy, 2018).

Fourth, institutionalising Kirkpatrick Level 3 Behavioral Audits as standard operating procedure eliminates evaluation blindness and creates a permanent, evidence-based feedback loop. By feeding audit results directly into the subsequent TNA cycle, the Cyclical Feedback Model prevents the Training Relevance Gap from recurring, halts L&D budget waste, and continuously equips the EM workforce to drive KPIs toward sustained, world-class premium performance. The Cyclical Feedback Model transforms HR from a compliance function into a strategic capability driver, providing a replicable, theoretically grounded closed-loop system for technically specialised, asset-critical organisations across Southeast Asia's emerging commercial real estate sector.

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