

Teacher Training Management for Deep Learning Readiness in Elementary Schools

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Abstract:

This study analyzes teacher training management in improving teacher readiness to implement deep learning at SDN Kapuk 13 Petang and SDN Jembatan Besi 01 Pagi, West Jakarta. The study was motivated by the increasing demand for teachers to adopt deep learning approaches that foster critical thinking, meaningful understanding, collaboration, and problem-solving skills among students. A qualitative case study design was employed to gain an in-depth understanding of how teacher training was planned, implemented, and evaluated in the two schools. Data were collected through interviews, observations, and documentation involving school principals and classroom teachers as the primary participants. The data were analyzed using Terry's management functions—planning, organizing, actuating, and controlling—supported by the interactive analysis model of Miles, Huberman, and Saldaña. The findings indicate that both schools had implemented teacher training management, although the effectiveness of each management function varied. Planning included coordination, scheduling, and preparation of training materials but lacked a systematic needs assessment. Organizing involved task distribution and coordination, with differences in teacher participation and external institutional support. Training implementation combined lectures, discussions, teaching practice, reflection, and module preparation; however, practical mentoring and classroom-based coaching remained limited. Controlling was conducted through reflection, documentation, and participant feedback, although systematic classroom supervision and follow-up evaluation had not yet been fully established. The study concludes that teacher readiness to implement deep learning can be strengthened through needs-based, practice-oriented, collaborative, and continuously evaluated teacher training management.

Keywords: Deep learning; Elementary school; Teacher readiness; Teacher training management; Terry's management functions.

Introduction

Teacher readiness is a key factor in the success of learning transformation in elementary schools. In the context of curriculum change, teachers are expected to design learning that is meaningful, student-centered, reflective, and oriented toward higher-order thinking. This expectation is closely related to the implementation of deep learning, which emphasizes students' ability to understand concepts deeply, connect knowledge with real-life contexts, collaborate, think critically, and reflect on learning experiences. Therefore, teacher professional development is needed to ensure that teachers are able to translate deep learning principles into classroom practice (Erstad & Voogt, 2018; Häkkinen et al., 2017)(Duterte, 2024).

However, teacher readiness to implement deep learning remains a challenge. Many teachers still experience difficulties in designing meaningful learning activities, applying differentiated instruction, developing authentic assessment, and facilitating active student participation. These challenges are often caused by

limited practical training, insufficient mentoring, weak follow-up, and training programs that are more administrative than needs-based. As a result, teacher training does not always lead to significant changes in classroom practice (Isnaeni, Budiman, Nurjaya, & Mukhlisin, 2025; Sari, Hasanah, & Hidayati, 2025; Subiyantoro, Musa, & Efendi, 2024).

Preliminary findings at SDN Kapuk 13 Petang and SDN Jembatan Besi 01 Pagi, West Jakarta, show that both schools have conducted teacher training related to deep learning. The training included coordination meetings, schedule preparation, role distribution, training sessions, and post-training reflection. Nevertheless, several weaknesses were identified, including the absence of systematic needs assessment, limited practical sessions, insufficient classroom-based mentoring, and monitoring that had not yet been developed into continuous professional assistance. These conditions indicate the need to analyze teacher training management more systematically.

Teacher training management is important because it determines whether training is properly planned, organized, implemented, and evaluated. Terry's management framework, consisting of planning, organizing, actuating, and controlling, provides a relevant lens for examining how schools manage teacher training to improve readiness. Through this framework, training can be analyzed not merely as an activity, but as a professional development process that should begin with need identification, continue with effective coordination and implementation, and end with meaningful evaluation and follow-up (Goodfellow, Bengio, Courville, & Bengio, 2016; Kurniawan, 2025; LeCun, Bengio, & Hinton, 2015).

Previous studies have discussed teacher training, professional development, and deep learning implementation. However, most of them examine these issues separately and give limited attention to how training management contributes to teacher readiness for deep learning in elementary school contexts. Therefore, the research gap of this study lies in the limited empirical analysis of teacher training management using Terry's POAC framework to understand teacher readiness in implementing deep learning.

Based on this gap, this study aims to analyze teacher training management in improving teacher readiness to implement deep learning at SDN Kapuk 13 Petang and SDN Jembatan Besi 01 Pagi, West Jakarta. Specifically, this study examines how planning, organizing, actuating, and controlling are applied in teacher training and how these functions support or hinder teacher readiness in classroom practice.

Literature Study

Teacher training management refers to the process of planning, organizing, implementing, and evaluating professional development activities to improve teachers' competence and readiness. In the context of elementary education, training management is essential because teachers are expected to respond to curriculum changes, student needs, and new learning approaches. Effective training should not only focus on transferring knowledge, but also help teachers develop practical skills, reflective awareness, and confidence to apply new strategies in classroom practice.

Terry's management theory provides a relevant framework for analyzing teacher training through four main functions: planning, organizing, actuating, and controlling. Planning involves identifying teacher needs, setting training objectives, preparing materials, and arranging schedules. Organizing focuses on role distribution, resource management, coordination, and participant involvement. Actuating refers to the implementation of training through lectures, discussions, simulations, practice, mentoring, and reflection. Controlling includes monitoring, evaluation, feedback, and follow-up to ensure that training outcomes contribute to teacher readiness and instructional improvement.

Deep learning in education emphasizes meaningful understanding, active student engagement, critical thinking, collaboration, reflection, and the connection between learning materials and real-life contexts. To implement this approach, teachers need pedagogical readiness, professional readiness, technological readiness, and reflective readiness. Pedagogical readiness enables teachers to design student-centered learning, while professional and reflective readiness help teachers adapt their practices and evaluate learning processes. Therefore, teacher readiness for deep learning cannot be developed through theoretical training alone, but requires practice-based and continuously supported professional development.

Previous studies have shown that teacher training can improve teacher competence when it is needs-based, practical, collaborative, and followed by continuous mentoring. However, many training programs are still administrative, short-term, and weak in follow-up, so their impact on classroom practice is limited. In relation to deep learning, teacher training needs to be managed as a sustainable professional development system rather than a one-time activity. Therefore, this study uses Terry's management functions to examine how teacher training is planned, organized, implemented, and evaluated in improving teacher readiness to implement deep learning in elementary schools

Methods

This study employed a qualitative approach with a case study design to analyze teacher training management in improving teacher readiness to implement deep learning at SDN Kapuk 13 Petang and SDN Jembatan Besi 01 Pagi, West Jakarta. The research was conducted for three months, from May to July 2025, covering preliminary observation, data collection, data analysis, and verification of findings. The case study design was selected because the study focused on a specific educational phenomenon, namely the management of teacher training in two elementary schools that had implemented training related to deep learning (Adrias & Ruswandi, 2025; Creswell & Creswell, 2018).

The participants consisted of 3 informants, including two school principals and 2 classroom teachers from the two schools. Participants were selected using purposive sampling because they were directly involved in teacher training activities and the implementation of deep learning in classroom practice. The selection criteria included: having participated in or managed teacher training, having experience in preparing learning activities related to deep learning, and being willing to provide information through interviews, observation, and documentation.

Data were collected through in-depth interviews, observation, and documentation. Interviews were conducted with school principals and teachers to explore training planning, role distribution, training implementation, evaluation, follow-up, and challenges in improving teacher readiness. Observation was conducted to examine training activities, teacher participation, and the initial application of deep learning principles in classroom practice. Documentation was used to analyze training schedules, attendance lists, meeting notes, teaching modules, training materials, evaluation notes, and school reports related to teacher professional development (Yin, 2017, 2018)(Patton, 2014)(Patton, 2014; Shenton, 2004; Tisdell, Merriam, & Stuckey-Peyrot, 2025).

Data analysis followed the interactive model of Miles, Huberman, and Saldaña, consisting of data condensation, data display, and conclusion drawing or verification. Operationally, the analysis was conducted in several steps. First, interview transcripts, observation notes, and documents were organized based on each school. Second, relevant data were selected and coded according to Terry's management functions: planning, organizing, actuating, and controlling. Third, the coded data were grouped into themes such as needs assessment, role distribution, training methods, practical mentoring, evaluation, and follow-up. Fourth, the findings were presented in narrative form and cross-case comparison tables. Finally,

conclusions were verified through triangulation of interview, observation, and documentation data (Miles, Huberman, & Saldana, 2014).

Trustworthiness was ensured through credibility, transferability, dependability, and confirmability. Credibility was strengthened through source and technique triangulation, as well as member checking with selected informants. Transferability was supported by providing detailed descriptions of the research sites, participants, and training activities. Dependability was maintained by documenting the research procedures systematically, while confirmability was ensured by grounding the findings in empirical data rather than the researcher's personal assumptions (Lincoln & Guba, 1985)(Nowell, Norris, White, & Moules, 2017; Tisdell et al., 2025).

Results

Planning of Teacher Training for Deep Learning Implementation

The first finding concerns the planning of teacher training to improve teacher readiness in implementing deep learning at SDN Kapuk 13 Petang and SDN Jembatan Besi 01 Pagi, West Jakarta. The findings show that both schools had conducted planning before implementing teacher training. The planning process included identifying teachers' classroom difficulties, coordinating with school leaders and teachers, preparing training schedules, determining training materials, and ensuring the availability of supporting facilities. However, the planning in both schools still tended to be administrative and had not fully developed into a systematic needs-based training design.

At SDN Kapuk 13 Petang, the principal explained that training planning usually began with coordination meetings involving teachers. These meetings were used to identify teachers' problems in classroom learning, especially related to the implementation of deep learning. The principal stated:

“We usually conduct coordination meetings with teachers to directly hear what difficulties they face in the classroom.”(*Interview with Principal 1, SDN Kapuk 13 Petang, July 14, 2025*)

This statement indicates that the school had attempted to involve teachers in the early stage of training planning. The principal did not plan the training independently, but tried to listen to teachers' needs and classroom experiences. However, the data also show that the identification of needs was still conducted informally through meetings and discussions, rather than through systematic instruments such as needs assessment questionnaires, competency mapping, or classroom performance analysis.

At SDN Jembatan Besi 01 Pagi, training planning was also carried out before the activity. However, the planning process was more influenced by programs or instructions from external parties, such as the education office or training organizers. One teacher stated:

“Usually, the training schedule and materials have already been determined. We as teachers follow the program, but we still hope that the materials are related to what we need in the classroom.”(*Interview with Teacher 2, SDN Jembatan Besi 01 Pagi, July 22, 2025*)

This statement shows that teacher involvement in planning at SDN Jembatan Besi 01 Pagi was relatively limited. Teachers were mostly positioned as participants, while the schedule and materials were largely determined by external organizers. This condition made the planning process more structured administratively, but less flexible in responding to specific teacher needs at the school level.

The comparison of findings on training planning in both schools is presented in Table 1.

Table 1
Comparison of Findings on the Planning of Teacher Training in Two Schools

Aspect of Planning	SDN Kapuk 13 Petang	SDN Jembatan Besi 01 Pagi	Cross-Case Interpretation
Initial planning process	Planning began with coordination meetings involving the principal and teachers.	Planning was mostly based on schedules and materials determined by external organizers.	Both schools conducted planning, but SDN Kapuk 13 Petang was more participatory, while SDN Jembatan Besi 01 Pagi was more externally structured.
Needs identification	Teachers' classroom difficulties were identified through discussion and verbal reports.	Teachers' needs were not fully analyzed at the school level before training.	Needs analysis existed but remained informal and not yet systematic.
Teacher involvement	Teachers were involved in discussing classroom problems and training needs.	Teachers were mainly positioned as training participants.	Teacher participation in planning was stronger at SDN Kapuk 13 Petang.
Training materials	Materials were planned based on general classroom difficulties related to deep learning.	Materials were mostly provided by external training organizers.	Training materials in both schools still need stronger alignment with specific teacher readiness gaps.
Schedule preparation	Training schedules were arranged through internal coordination.	The school adjusted teacher participation according to the external training schedule.	Both schools prepared schedules, but the level of school autonomy differed.
Supporting facilities	Facilities were prepared according to available school resources.	Facilities depended partly on school readiness and external training arrangements.	Facility planning was present but still limited by school resources.
Planning weakness	Needs analysis was not yet supported by formal instruments or competency mapping.	Planning was less participatory and more administrative.	Both schools need stronger needs-based planning to improve the relevance of training.
Main planning strength	Participatory coordination between principal and teachers.	Administrative readiness and clear participation arrangement.	Effective training planning requires both teacher involvement and administrative clarity.

Based on Table 1, the planning of teacher training in both schools had been implemented, but it still required improvement. SDN Kapuk 13 Petang showed stronger teacher involvement through coordination meetings, while SDN Jembatan Besi 01 Pagi showed stronger administrative readiness because the training schedule and materials were already organized. However, both schools still need to strengthen systematic needs analysis so that teacher training is more closely aligned with the competencies required for implementing deep learning.

Organizing of Training Roles, Resources, and Coordination

The second finding concerns the organizing function in teacher training management to improve teacher readiness in implementing deep learning. Organizing refers to the process of arranging human resources, assigning roles, distributing responsibilities, preparing facilities, and coordinating all parties involved in training activities. The findings show that both SDN Kapuk 13 Petang and SDN Jembatan Besi 01 Pagi had organized teacher training activities, but the pattern of organizing differed between the two schools. SDN Kapuk 13 Petang involved teachers both as participants and as part of the organizing committee, while SDN Jembatan Besi 01 Pagi positioned teachers mainly as participants because the committee and technical arrangements were mostly determined by external organizers.

At SDN Kapuk 13 Petang, organizing was carried out through internal coordination between the principal and teachers. Some teachers were assigned to help prepare administrative needs, arrange training facilities, coordinate attendance, and ensure that training activities could run according to schedule. This shows that the school attempted to distribute responsibilities internally. However, because teachers were also participants, the dual role sometimes created additional workload. One teacher explained:

“In our school, teachers are sometimes involved as both participants and committee members. We help prepare the activity, but at the same time we also have to focus on the training materials.”(*Interview with Teacher 1, SDN Kapuk 13 Petang, July 14, 2025*)

This statement indicates that the organizing process at SDN Kapuk 13 Petang encouraged teacher involvement, but it also created challenges in maintaining teacher focus during training. Teachers had to divide their attention between technical responsibilities and professional learning.

At SDN Jembatan Besi 01 Pagi, organizing was different because teachers were primarily positioned as participants. The technical committee, training schedule, and resource persons were mostly arranged by the education office or external training organizers. One teacher stated:

“The committee was determined by the office. We were only participants, so we could focus on the training.”(*Interview with Teacher 2, SDN Jembatan Besi 01 Pagi, July 22, 2025*)

This statement shows that the organizing pattern at SDN Jembatan Besi 01 Pagi allowed teachers to concentrate more fully on the training process. However, this pattern also limited teachers’ involvement in managing and adapting the training to the school’s specific context.

The principal emphasized that role distribution is important so that training activities do not interfere with teachers’ main duties in the classroom. The principal stated:

“We try to arrange the roles so that teachers can participate in training without disturbing classroom learning. If there are teachers who attend training, we adjust the teaching schedule or coordinate with other teachers.”(*Interview with School Principal*)

The comparison of findings on training organizing in both schools is presented in Table 2.

Table 2
Comparison of Findings on the Organizing of Teacher Training in Two Schools

Aspect of Organizing	SDN Kapuk 13 Petang	SDN Jembatan Besi 01 Pagi	Cross-Case Interpretation
Role distribution	Teachers were involved as both committee	Teachers were mainly positioned as participants.	SDN Kapuk 13 Petang showed participatory

	members and training participants.		organizing, while SDN Jembatan Besi 01 Pagi showed centralized organizing.
Committee arrangement	The school internally assigned teachers to assist with preparation and technical needs. Teacher focus was sometimes divided between technical duties and training participation.	The committee and technical arrangements were mostly determined by external organizers.	Organizing authority differed between internal school-based coordination and external program coordination.
Teacher focus	The principal coordinated teacher assignments, facilities, and training participation. Training rooms, attendance, and facilities were prepared through internal coordination.	Teachers could focus more fully on training materials.	Excessive technical roles may reduce teacher concentration during training.
Principal's role	Coordination occurred among principal, teachers, and internal school staff.	The principal ensured teacher attendance and coordinated with external organizers.	Principals functioned as coordinators, although their level of control differed.
Resource preparation	Stronger teacher involvement and ownership of training activities.	Resources were prepared based on external training arrangements and school readiness.	Resource preparation existed in both schools, but SDN Kapuk 13 Petang was more internally managed.
Coordination pattern	Teachers experienced dual roles, which could reduce focus during training.	Coordination occurred between school, teachers, and external organizers.	Both schools required coordination, but the direction of coordination differed.
Main organizing strength		Stronger teacher focus as participants because technical duties were minimized.	Each organizing model has advantages depending on role clarity and workload management.
Main organizing weakness		Teacher involvement in contextualizing training was limited.	Effective organizing requires both teacher participation and protection of teacher learning focus.

Based on Table 2, the organizing of teacher training in both schools had supported the implementation of training activities, but each school showed different strengths and weaknesses. SDN Kapuk 13 Petang had stronger internal participation and teacher ownership, but teachers sometimes experienced role overload. SDN Jembatan Besi 01 Pagi allowed teachers to focus more on training, but the organizing process was more dependent on external structures. These findings suggest that effective organizing should balance participation, role clarity, workload distribution, and contextual relevance so that teacher training can more effectively improve readiness for deep learning implementation.

Actuating of Teacher Training Activities

The third finding concerns the actuating or implementation stage of teacher training activities to improve teacher readiness in implementing deep learning. In Terry's management framework, actuating refers to the process of moving, directing, motivating, and guiding people so that planned activities can be

implemented effectively. In the context of this study, actuating refers to how teacher training was conducted, what methods were used, how teachers participated in the training, and how the training contributed to their readiness to design and implement deep learning in the classroom.

The findings show that teacher training activities in both SDN Kapuk 13 Petang and SDN Jembatan Besi 01 Pagi were implemented through several methods, including lectures, discussions, direct practice, reflection, and preparation of teaching modules. The training aimed to help teachers understand the concept of deep learning and apply it in lesson planning. However, the implementation still faced several challenges, particularly in providing sufficient practical sessions, classroom-based mentoring, and continuous assistance after the training.

At SDN Kapuk 13 Petang, the implementation of training was directed toward helping teachers understand the principles of deep learning and relate them to classroom practice. Teachers were introduced to the concept of meaningful learning, active student participation, differentiated instruction, and learning activities that encourage critical thinking. One teacher explained:

“During the training, we were introduced to how learning should not only deliver material, but also make students active, think more deeply, and connect lessons with their daily life.”
(Interview with Teacher 1, SDN Kapuk 13 Petang, July 14, 2025)

From the perspective of teacher professional development, the findings confirm that practice-based training is more effective than training that relies mainly on lectures. Teachers need opportunities to try, reflect, revise, and apply new learning strategies. Training that only provides theoretical explanations may increase knowledge, but does not necessarily improve classroom readiness. In contrast, training that includes simulations, lesson design practice, collaborative discussion, and mentoring is more likely to strengthen teachers’ confidence and pedagogical competence.

The cross-case analysis shows that both schools implemented teacher training activities, but with different emphases. SDN Kapuk 13 Petang emphasized understanding and discussion of deep learning concepts, while SDN Jembatan Besi 01 Pagi showed stronger teacher engagement when training included direct practice. This indicates that the implementation of teacher training should combine conceptual explanation with practical application. Teachers need to understand why deep learning is important, but they also need to know how to apply it in actual classroom situations.

The findings further indicate that the actuating function is strongly related to motivation and instructional leadership. Principals and facilitators need to encourage teachers to participate actively, ask questions, practice new strategies, and reflect on their teaching habits. Without motivation and guidance, training may become passive and procedural. Therefore, actuating should be understood not only as conducting training sessions, but also as mobilizing teachers toward professional change.

The comparison of findings on training implementation in both schools is presented in Table 3.

Table 3
Comparison of Findings on the Actuating of Teacher Training Activities in Two Schools

Aspect of Actuating	SDN Kapuk 13 Petang	SDN Jembatan Besi 01 Pagi	Cross-Case Interpretation
Training implementation	Training was implemented through explanation, discussion,	Training was implemented through explanation, discussion,	Both schools implemented training activities, but SDN Jembatan Besi 01 Pagi

	and introduction to deep learning concepts.	direct practice, and preparation of teaching modules.	showed stronger emphasis on practice.
Training methods	Lectures and discussions were used to build teacher understanding.	Lectures, discussions, practice, and reflection were used to strengthen teacher readiness.	Training methods were more effective when theoretical explanation was combined with direct practice.
Teacher participation	Teachers participated in discussions and shared classroom challenges.	Teachers actively practiced designing learning activities and modules.	Teacher engagement increased when training included practical and collaborative tasks.
Focus of training	Understanding deep learning concepts and linking them to classroom needs.	Applying deep learning concepts through module preparation and learning scenarios.	Conceptual understanding and practical application are both needed to improve teacher readiness.
Evidence of readiness	Teachers showed improved awareness of meaningful and student-centered learning.	Teachers began developing teaching modules containing deep learning elements.	Readiness appeared in both conceptual awareness and initial instructional design ability.
Supporting condition	Teachers were encouraged to discuss classroom problems and reflect on teaching practices.	Teachers were supported through direct practice and collaborative learning activities.	Reflection and practice strengthen professional learning.
Main weakness	Practical sessions and follow-up mentoring were still limited.	Practice was helpful, but continuous classroom assistance was still needed.	Training implementation needs stronger continuity through mentoring and classroom-based follow-up.
Main strength	Strengthening teachers' conceptual understanding of deep learning.	Strengthening teachers' practical engagement through module design and direct practice.	Effective actuating requires both conceptual direction and practical experience.

Based on Table 3, the actuating of teacher training activities in both schools contributed to improving teacher readiness, particularly in understanding the concept of deep learning and beginning to design more meaningful learning activities. However, the training implementation still needs to be strengthened through more intensive practice, classroom-based mentoring, and continuous feedback. The findings suggest that teacher readiness will improve more significantly when training is not limited to theoretical sessions, but is developed as a practical, reflective, and sustained professional learning process.

Controlling and Follow-Up of Teacher Training Outcomes

The fourth finding concerns the controlling and follow-up stage of teacher training management in improving teacher readiness to implement deep learning. In Terry's management framework, controlling refers to monitoring, evaluating, correcting, and ensuring that activities are aligned with predetermined objectives. In this study, controlling includes post-training evaluation, reflection, supervision, documentation, and follow-up actions conducted by schools to assess whether teacher training has improved teacher readiness in designing and implementing deep learning.

The findings show that both SDN Kapuk 13 Petang and SDN Jembatan Besi 01 Pagi had conducted post-training evaluation, but the controlling process was not yet fully systematic and sustainable. Evaluation was generally carried out through reflection, discussion, administrative reporting, and review of training participation. However, the follow-up mechanism to ensure classroom implementation of deep learning was still limited. This indicates that the controlling function had been implemented, but it had not yet developed into continuous professional assistance.

At SDN Kapuk 13 Petang, controlling was conducted through reflection and internal discussion after training. The principal and teachers reviewed what had been learned and discussed possible applications in classroom practice. The principal stated:

“After the training, we usually ask teachers to reflect on what they have learned and how it can be applied in class. However, we still need a more regular monitoring system so that the results of the training do not stop at discussion.” (Interview with Principal 1, SDN Kapuk 13 Petang, July 14, 2025)

This statement indicates that the school had awareness of the importance of evaluation, but the monitoring system was not yet strong enough to ensure sustainable classroom implementation.

At SDN Jembatan Besi 01 Pagi, post-training reflection was also conducted. One teacher explained:

“After the training, we were invited to reflect together, so we knew what had gone well and what needed to be improved.” (Interview with Teacher 2, SDN Jembatan Besi 01 Pagi, July 22, 2025)

This statement shows that reflection helped teachers evaluate their understanding and identify areas for improvement. However, reflection alone was not sufficient if it was not followed by classroom observation, coaching, or feedback on teaching practice.

Another teacher emphasized the need for more continuous assistance after training:

“The training was useful, but sometimes after returning to class, we still have questions about how to apply it. It would be better if there were follow-up mentoring or direct feedback after we try it in class.” (Interview with Teacher Participant)

This statement indicates that teachers needed more than post-training reflection. They required practical support during the transition from training to classroom implementation.

Table 4
Comparison of Findings on the Controlling and Follow-Up of Teacher Training Outcomes in Two Schools

Aspect of Controlling	SDN Kapuk 13 Petang	SDN Jembatan Besi 01 Pagi	Cross-Case Interpretation
Post-training evaluation	Evaluation was conducted through reflection and internal discussion between principal and teachers.	Evaluation was conducted through collective reflection after training.	Both schools conducted evaluation, but it was still mostly reflective and informal.
Monitoring mechanism	The principal monitored teachers informally by	Monitoring was reflected in teacher discussion and	Monitoring existed but was not yet supported by systematic instruments.

	asking about progress and classroom application.	review of training outcomes.	
Follow-up activities	Follow-up was carried out through discussion, but regular mentoring was still limited.	Teachers reflected on strengths and weaknesses, but classroom assistance was not continuous.	Follow-up needs to be strengthened through mentoring, coaching, and classroom observation.
Documentation	Attendance lists, meeting notes, and reflection records were available.	Training reports, reflection records, and teaching modules were documented.	Documentation existed, but it was more administrative than developmental.
Evidence of teacher readiness	Some teachers began applying student-centered learning, but consistency varied.	Teachers began preparing modules with deep learning elements, but classroom implementation was uneven.	Teacher readiness improved, but it still required sustained support.
Main controlling strength	Principal-led reflection encouraged teachers to review training outcomes.	Collective reflection helped teachers identify what had gone well and what needed improvement.	Reflection became an initial controlling mechanism in both schools.
Main controlling weakness	No specific monitoring instrument for deep learning implementation was found.	Follow-up was not yet developed into continuous classroom-based assistance.	Controlling was not yet systematic enough to measure the real impact of training.
Needed improvement	Regular academic supervision, observation instruments, and teacher mentoring.	Structured coaching, module review, and classroom feedback.	Effective controlling requires sustainable supervision and developmental follow-up.

Based on Table 4, the controlling and follow-up of teacher training outcomes in both schools had been implemented, but still required significant strengthening. The evaluation process was mainly conducted through reflection and administrative documentation, while systematic monitoring of classroom implementation was still limited. Therefore, teacher training management needs to develop stronger follow-up mechanisms, including academic supervision, peer mentoring, classroom observation, and review of teaching modules. These mechanisms are essential to ensure that teacher training does not stop at knowledge acquisition, but truly improves teacher readiness to implement deep learning in classroom practice.

Discussion

The findings of this study indicate that teacher training management plays a strategic role in improving teacher readiness to implement deep learning at SDN Kapuk 13 Petang and SDN Jembatan Besi 01 Pagi. The training management process was analyzed through Terry's management functions, namely planning, organizing, actuating, and controlling. Overall, both schools had implemented these four functions, although the quality of implementation varied across stages. The strongest aspects were found in the existence of coordination, training implementation, and teacher participation, while the weaker aspects were found in systematic needs analysis, role distribution, practical mentoring, and continuous follow-up.

The planning stage shows that both schools had attempted to prepare teacher training before implementation. SDN Kapuk 13 Petang demonstrated a more participatory planning process because the principal involved teachers in coordination meetings to identify classroom difficulties. Meanwhile, SDN Jembatan Besi 01 Pagi showed stronger administrative readiness because the training schedule and materials were already arranged, mostly by external organizers. However, the findings also show that planning in both schools had not fully been based on systematic needs assessment. This means that training planning still tended to rely on general discussions, administrative schedules, and available programs rather than comprehensive mapping of teacher competencies and readiness gaps.

This finding confirms Terry's view that planning is the first and most fundamental management function because it determines the direction of all subsequent activities. In the context of teacher training, planning should not only answer when and where training will be conducted, but also why training is needed, what competencies must be developed, what problems teachers face in the classroom, and how the training will support instructional improvement. Therefore, needs-based planning is essential to ensure that training is relevant to the real challenges teachers encounter in implementing deep learning.

The organizing stage reveals two different patterns between the schools. SDN Kapuk 13 Petang applied a more participatory organizing model by involving teachers as both committee members and training participants. This pattern strengthened teacher ownership of the program, but it also created a dual-role burden that could reduce teacher focus during training. In contrast, SDN Jembatan Besi 01 Pagi positioned teachers mainly as participants because the committee and technical arrangements were mostly handled by external organizers. This allowed teachers to focus more on training activities, but limited their involvement in contextualizing the training according to school needs.

These findings indicate that effective organizing requires balance between participation and role clarity. In Terry's management framework, organizing is intended to arrange human resources, duties, authority, and facilities so that planned activities can be implemented efficiently. If teachers are overly burdened with technical responsibilities, their learning focus may decrease. However, if teachers are only positioned as passive participants, their sense of ownership and contextual contribution may also be limited. Therefore, teacher training should be organized by clearly separating technical roles from learning roles while still giving teachers space to provide input on training needs and follow-up plans.

The actuating stage shows that teacher training activities contributed to improving teacher understanding of deep learning. Training was implemented through lectures, discussions, direct practice, reflection, and preparation of teaching modules. Teachers reported that the training became more useful when it provided practical opportunities rather than only theoretical explanation. This finding is consistent with the principle that professional development is more effective when teachers are actively involved in practice, reflection, and application. In this study, teachers began to understand that deep learning requires meaningful activities, student engagement, critical thinking, collaboration, reflection, and contextual learning.

However, the implementation stage also showed that training had not yet fully strengthened teacher readiness in practical terms. Some teachers still experienced difficulties in designing formative assessment, managing active learning, developing differentiated instruction, and translating deep learning principles into daily lesson plans. This indicates that one-time training is insufficient to produce strong pedagogical change. Training needs to be followed by classroom-based practice, mentoring, peer discussion, and feedback so that teachers can gradually transform conceptual understanding into instructional competence.

The controlling stage was the weakest aspect of training management in both schools. Although evaluation and reflection were conducted after training, the process was still mostly informal and administrative. Both schools had attendance lists, training reports, meeting notes, and reflection records, but there was limited evidence of systematic classroom observation, teaching module review, coaching, or structured monitoring of teacher readiness. As a result, the real impact of training on classroom implementation was difficult to measure.

This finding shows that controlling should be strengthened as a continuous improvement mechanism. In Terry's theory, controlling is not merely checking whether activities have been completed, but ensuring that the results are aligned with objectives and followed by corrective action. In the context of teacher training, controlling should assess whether teachers are able to implement deep learning after training. This requires clear indicators, such as teachers' ability to design meaningful learning objectives, facilitate active student participation, use higher-order questions, implement differentiated instruction, conduct formative assessment, and encourage student reflection.

The findings also show that teacher readiness is influenced by the quality of the entire training management cycle. Readiness does not emerge only from attending training sessions. It is shaped by relevant planning, effective organization, meaningful implementation, and sustainable follow-up. When planning is not based on teacher needs, training may not address the real problems teachers face. When organizing is unclear, teachers may experience role overload or passive participation. When implementation is too theoretical, teachers may understand concepts but struggle to apply them. When controlling is weak, schools may not know whether the training has actually improved classroom practice.

In relation to deep learning, teacher readiness requires more than knowledge of concepts. Teachers need pedagogical readiness, professional readiness, technological readiness, and reflective readiness. Pedagogical readiness refers to teachers' ability to design student-centered and meaningful learning. Professional readiness refers to their willingness to improve and adapt their teaching practices. Technological readiness refers to the ability to use digital tools and learning resources appropriately. Reflective readiness refers to teachers' ability to evaluate their own teaching and make improvements. These forms of readiness can only be developed through training that is practical, contextual, collaborative, and continuous.

The cross-case comparison indicates that SDN Kapuk 13 Petang had strengths in participatory coordination and internal involvement, while SDN Jembatan Besi 01 Pagi had strengths in administrative clarity and teacher focus during training. However, both schools shared similar challenges, particularly the absence of systematic needs assessment and sustainable post-training mentoring. This means that both schools need to move from activity-based training toward impact-based training. Activity-based training focuses mainly on conducting the program, while impact-based training focuses on whether the program changes teacher competence and classroom practice.

The findings of this study support previous research stating that teacher training is effective when it is relevant to teacher needs, supported by practice, and followed by continuous evaluation. Training that only emphasizes administrative completion tends to have limited impact on instructional transformation. Conversely, training that is managed systematically through planning, organizing, actuating, and controlling can become a strategic mechanism for improving teacher readiness. Therefore, Terry's POAC framework remains relevant for analyzing and strengthening teacher training management in elementary schools.

The novelty of this study lies in its integration of Terry's management functions with teacher readiness for deep learning implementation in the elementary school context. The study demonstrates that the success of deep learning implementation depends not only on curriculum policy or teacher motivation, but also on how schools manage teacher training. Deep learning requires teachers who are able to design meaningful, mindful, joyful, reflective, and student-centered learning experiences. Such readiness cannot be developed through fragmented training; it requires systematic and sustainable management (Glynn & Winter, 2004; Surya, 2011; Terry, 1958).

Thus, the study implies that schools need to strengthen teacher training management by conducting formal needs assessments, clarifying roles and responsibilities, increasing practice-based training, providing classroom mentoring, and developing systematic monitoring instruments. Principals should act as instructional leaders who ensure that training outcomes are translated into classroom practice. Teachers should be supported through collaborative learning communities, peer coaching, and reflective practice. With these improvements, teacher training can become an effective instrument for enhancing teacher readiness and supporting the implementation of deep learning in elementary schools.

Conclusions

This study concludes that teacher training management contributes to improving teacher readiness to implement deep learning when it is managed through a coherent process of planning, organizing, actuating, and controlling. In the two elementary schools studied, training management had been implemented, but its effectiveness varied. Planning was still not fully based on systematic needs assessment, organizing required clearer role distribution, actuating needed stronger practice-based activities, and controlling remained limited in classroom-based monitoring and follow-up.

The main finding shows that teacher readiness for deep learning cannot be developed through one-time or administrative training alone. It requires training that is needs-based, well-coordinated, practical, reflective, and continuously evaluated. Teachers need not only conceptual understanding of deep learning, but also sustained support to design meaningful learning activities, facilitate active student participation, apply differentiated instruction, and conduct formative assessment in classroom practice.

Therefore, schools should strengthen teacher training management by conducting formal needs assessments, clarifying the roles of principals, teachers, and facilitators, increasing practice-oriented training, and developing continuous mentoring after training. Future research is recommended to examine teacher training management in broader school contexts, use mixed-method designs, and measure the impact of training on actual classroom implementation and student learning outcomes.

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