

Training Program New Initiative in Kementerian Energi dan Sumber Daya Mineral (KESDM) Case Study: A Complete Cycle of the ADDIE Model

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Abstract

This study explores the design, implementation, and evaluation of government training programs within the *Kementerian Energi dan Sumber Daya Mineral (KESDM)* in 2024, with a particular focus on a new policy initiative called *Diklat TLCS* (Technical, Law, Commerce, and Soft Skills). Using a qualitative approach, this research applies the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) to examine how a structured, systematic process can identify areas for improvement. By conducting interviews, observations, and document analysis, this study seeks to understand the perspectives of key stakeholders—trainers, trainees, and training managers as policymakers. The study identifies three key policy enhancements; they are (1) Improving Training Needs Analysis (TNA) Design and Stakeholder Involvement; (2) Continuous Development and Feedback Mechanisms; and (3) Aligning Training with Career Pathways and Practical Application. They will impose KESDM's employee engagement on *Diklat TLCS* in the future, improving organizational overall strategic goals' achievement. Finally, the study suggests the implementation of a "Structured Training Program" policy that improves *Diklat TLCS*' design to be more practical in daily application and also aligned with employees' career paths.

Kata kunci: Government Official; Training Programs; ADDIE Model; 5-Why Technique; Causal Event Tree.

I. Introduction

Rapid changes in industries around the world are being fueled by advancements in technology, shifting economic conditions, environmental concerns, and shifting political environments. There is increasing demand in the minerals and energy sectors in particular to innovate, adapt, and maintain their competitiveness. The requirement for a highly qualified and flexible workforce is more important than ever as these sectors develop. In response to this need, *Badan Pengembangan Sumber Daya Manusia Energi dan Sumber Daya Mineral (BPSDM ESDM)* is essential in equipping experts to handle the intricacies and difficulties of Indonesia's ever-changing mineral and energy sectors.

As an organizational unit under *KESDM*, *BPSDM ESDM* is dedicated to developing Indonesia's workforce in the minerals and energy sectors. Its goal is to make sure that expertise in these fields is equipped to handle new opportunities and difficulties. *BPSDM ESDM* provides variety of strategic training programs and workforce development activities to accomplish this. The goal is to develop a knowledgeable, flexible, and resilient workforce that can keep up with changes in the business and support Indonesia's larger development objectives.

Among its key strategic efforts, *BPSDM ESDM* has been the implementer of the *Diklat Aparatur Sipil Negara (ASN) KESDM* training. This is an extensive training scheme dedicated to employees within the government who are deployed in the mineral and energy sectors. Its intention is to develop the abilities and skills of these government workers such that they become capable and qualified to manage the challenges faced in the industries effectively. The *Diklat ASN KESDM* is modeled according to Indonesian Law No. 5 of 2014 on Civil State Apparatus, whereby the civil servants need to enhance their capabilities continuously. It makes it possible for the public servants to withstand the challenge of contemporary government and make their contributions to the country's mining and energy sectors.

Supporting these strategic activities further is Government Regulation No. 11 of 2017. It provides an official guideline for government officials' administration, including instructions on training, career development, and performance assessment. By pursuing such regulation guidelines, *BPSDM ESDM* designs the *Diklat ASN KESDM* training program to ensure that they meet their objectives. Which aligns with the country's goals in its management of government officials and is also responsive to satisfying specialized human capital needs in the mineral and energy sectors.

With the increasing sophistication of the mining and energy sectors, *BPSDM ESDM* introduced a new training program that was only available to *KESDM* employees in 2024 known as *Diklat TLCS*. The program recognizes that experts in these fields, and especially *KESDM* employees, require more than technical skills. They need to learn legal acumen, business acumen, and soft skills such as leadership and communication. Through the incorporation of these diverse competencies, *Diklat TLCS* aims to produce integral professionals capable of handling the complexity of the industries, inducing innovation, and achieving sustainable sectoral development.

A preliminary examination of *Diklat TLCS 2024* documents, most importantly its year-end planning document in 2023, confirms that its running would be challenging. There are around 5 (five) thousand of the current employees of *KESDM* to be affected by the program. Doing it all at the same time at *KESDM* will guarantee there would be roughly 15 hundred overall participants in total if an employee would average having 3 (three) programs. That is a combination of 3 (three) types of training programs out of 4 (four) possible aspects in technical, legal, commercial, and soft skills. Logistical challenges will be anticipated first by *BPSDM ESDM*

Diklat TLCS implementation. That includes preparations of training material and scheduling. These challenges would eventually lead one to question *Diklat TLCS*'s effectiveness as a policy.

To evaluate the effectiveness of *Diklat TLCS*, *BPSDM ESDM* could benefit from applying well-established instructional design models such as the ADDIE Model. The ADDIE Model—an acronym for Analysis, Design, Development, Implementation, and Evaluation—offers a structured and systematic approach to creating training programs that are both efficient and aligned with organizational goals. By using this model, training designers and developers at *BPSDM ESDM* can ensure that *Diklat TLCS* can be developed to the specific needs of the workforce and organization, maximizing relevance and impact (Branch, 2009).

Looking at the ADDIE model, it begins with an analyzing phase. It is a critical phase for identifying training needs, assessing performance gaps, and aligning training objectives with organizational strategic goals. The second and third phases are the design and development phases. These two phases involve creating learning objectives, selecting appropriate content, and determining optimal delivery methods according to the findings in the previous phase (Jonnalagadda et al., 2022). Following the design and development phase is the implementation phase. It involves program execution, addressing logistics, technology integration, and participant engagement to ensure smooth delivery. The last phase in the model is the evaluation phase. It involves analyzing data collected from the implementation phase, resolving findings, and proposing improvement recommendations (Bamrara, 2018).

This study applies the ADDIE Model to assess and enhance the *Diklat TLCS* program as the current policy in training programs within *KESDM*. The research aims to identify opportunities for improvement in the program design, delivery, and evaluation of *Diklat TLCS*. Ultimately, the goal of this paper is to produce a policy recommendation that will strengthen the effectiveness of *Diklat TLCS*, ensuring that *BPSDM ESDM* fulfills its commitment to improving human capital quality in Indonesia's mining and energy sectors—particularly among government officials within *KESDM*.

II. Methods

This study employs a qualitative research approach to explore the effectiveness of the ADDIE model in optimizing training programs, in this case, used to probe into *Diklat TLCS 2024* held by *BPSDM ESDM*. A qualitative approach is well-suited for exploring complex phenomena involving human perspectives and experiences, as it offers rich, in-depth insights (Merriam & Grenier, 2019a).

2.1. Research Design

A case study research design is adopted to investigate a specific training program developed using the ADDIE model, in this case, *Diklat TLCS*. This design allows for an in-depth examination of the program's development, implementation, and outcomes in a real-world context. A single case study is supposedly aligned with the ADDIE model's structured phases (Huang et al., 2005).

Furthermore, the research design should address the research questions guiding the study. These questions might explore how the ADDIE model develops the training program effectively. The challenges will be encountered during each phase. And the impact of the program on participants, or the factors contributing to the program's success or failure, will be identified accordingly. The chosen data collection methods should be aligned with these research questions and provide rich data that can be analyzed to answer them (Sahaat et al., 2020).

2.2. Participants

Participants are selected from part of *BPSDM ESDM* that utilizes the ADDIE model for training program development, especially *Diklat TLCS* programs in 2024. The selection will involve purposive sampling, targeting individuals with varying roles and experiences related to training, including training managers, instructional designers, trainers, and trainees. This diverse sample will provide a comprehensive perspective on the ADDIE model's effectiveness.

2.3. Data Collection

For this study, data will be collected through several methods to ensure triangulation and enhance the credibility of the findings. These methods are

- **Semi-structured interviews**
Semi-structured interviews are conducted with research participants to gather in-depth information about their experiences with the ADDIE model in the *Diklat TLCS 2024*. The interviews also explore their perceptions of each phase of the model, its strengths and weaknesses, and its impact on training outcomes (Adeoye-Olatunde & Olenik, 2021).
- **Observations**
The observations of training sessions are conducted to gain firsthand insights into how the ADDIE model is applied in *Diklat TLCS 2024*. These observations also focus on the training environment, the interaction between trainers and trainees, and the overall effectiveness of the training delivery (Jamshed, 2014).
- **Document analysis**
Relevant documents, such as training materials, program evaluations, and organizational policies, are analyzed to provide contextual information and corroborate findings from other data sources (Wach & Ward, 2013).

2.4. Data Analysis

Data analysis involves getting into data—cleaning it, transforming it, and modeling it—to obtain those insights that are helpful in decision-making and for making conclusions for this research (Ibrahim et al., 2016). There are various techniques used in data analysis, each of which is designed to tackle specific research questions and types of data. In this research, we are concerned with two general techniques: the "5 Whys" analysis and thematic analysis. They present different angles for unveiling the root causes and trends within the data. Though both have their particular applications, they each supply useful information and can be paired with other analytical approaches to give a fuller understanding of the results.

The "5 Whys" method, one of the most popular root cause analysis tools, is a circular process of finding the cause of a problem (Card, 2017). Through successive questions of "why," researchers can peel off layers of causes and ultimately reach the root cause. The method is optimally used in troubleshooting events, determining inefficiency in processes, and averting repeat problems. Through its innocent use, the "5 Whys" is a powerful tool in uncovering unseen correlations and in eliciting remedial action. It is subjective, though it may or may not reveal one underlying root cause.

Thematic analysis is a qualitative process for analyzing data to determine, examine, and interpret data patterns (themes). It uses a systematic scheme of codes for textual or visual data, looking for recurring themes and investigating what they signify to the research question. Thematic analysis is especially useful for interpreting intricate events, recording subject experience, and facilitating rich descriptions. Whereas the "5 Whys" is focused on creating

causation, thematic analysis is focused on uncovering and interpreting meaning patterns. The two are complementary, nonetheless, and are utilized in addition to other forms of analytical strategy to develop a better understanding of the data (Braun & Clarke, 2006).

This qualitative study will provide a holistic and in-depth understanding of the effectiveness of the ADDIE model in optimizing training programs. The findings will highlight useful results for organizations looking to improve their policy on training practice and optimize the returns on their training investment.

III. Results, Discussions and Discussions

3.1. Analyze Phase

This is the analysis phase, which is a key initial stage in the ADDIE instructional design model. In the process of creating a training program, this phase includes a detailed analysis conducted to determine the needs for training within an organization, including what kind of performance gaps exist, what the training goals will be, who the audience will be, etc. Stage 1 – Results; Stage 2 – Objectives; Stage 3 – Training Program. A triangulated approach employs different types of techniques, like additional data from interviews (surveys), observations, or existing documents to construct a clearer and more informed picture of the situation and the goals to be obtained (Alodwan & Almosa, 2018).

The most important elements in the Analyze stage are to set the learning objectives, determine the traits of the learners, diagnose the learning environment, and set the available resources. Clear learning objectives indicate what the participants should be able to do after the training. Learners' traits, such as prior knowledge, ability, learning style, and motivation, must be known to create effective training materials and activities. Study context analysis includes bearing in mind issues like accessible technology, time, and logistical constraints. Lastly, consideration of accessible resources such as budget, manpower, and materials ensures that the training program is achievable and sustainable. A successfully accomplished analysis phase provides a clear image of the training need, the learners, and the environment in which the training is to be carried out. The information is utilized to direct the remaining ADDIE model phases so that the design, development, implementation, and evaluation phases are aligned with the established needs and objectives. With adequate time and efforts in the analysis phase, training designers can stage the grounds for a productive and successful training course (Abd Razak et al., 2020).

During the Analyze, Design, and Development phase of *Diklat TLCS, BPSDM ESDM* conducted an extensive series of activities to maintain the effectiveness of the program and assist with institutional needs. Focused group discussions (FGDs) with various units in *KESDM* took place during the phase, with which coordination amongst competency gap analysis, determination of training goals, and systematic curricula design ensued.

The outcome emphasized that *KESDM* employees need to be exposed extensively to strategic areas such as technical capability, legal and regulatory, commercial, and major soft skills in the energy and mining sectors. These should be cultivated as part of developing a technically competent and agile sectoral human capital. This conforms with global practices of giving prominence to matching the demand for energy human capital with training and education (Gonzalez et al., 2015). The *KESDM* aims to advance the competency of its workforce in these areas to simplify communication and decision-making in their respective sectors. Eventually, this program will be capable of providing *KESDM* with the agility to keep pace with rapid sectoral

transformation—be it in technology, policy, or business practices—by having a ready and competent workforce.

Due to financial constraints caused by the pandemic, the learning environment of *BPSDM ESDM* also experienced a dramatic shift, that is, in the method of its learning. The new normal has been adjusting to hybrid online, offline, and hybrid kinds of learning that will stand the test of time in promoting employees' competency building regardless of constraint drivers, including cost and logistics (Li, 2022). These strategies are less structured and more flexible, allowing employees to study at their convenience while working on their careers.

For the employees of *KESDM*, whose workload out there is too heavy to handle, hybrid learning practices offer a logical solution. With the combination of online settings and classroom training, these practices give relief from the heavy workload of their job without diluting the quality of skill development. Such pedagogical change not only facilitates maximum use of resources but also assists in meeting the emerging needs of the contemporary workforce with adaptive, versatile training systems (Bonk & Graham, 2012).

3.2. Design Phase

The design phase is one phase that comes after the analysis phase of the ADDIE model. It utilizes the information developed about the training need, target group, and learning environment. During this phase, a blueprint of the training program is prepared that includes objectives, content activities, evaluation, and delivery method. It entails deciding on instructional strategy, selecting appropriate media, and developing the overall program structure to accomplish effective learning. The successful design keeps the training program on target regarding the specified needs and objectives and serves as a guide in the process of development. Selecting appropriate instructional strategies and media is among the most significant activities of the design phase (Post et al., 2022).

Instructional strategies—lectures, discussions, simulations, or case studies—are chosen based on learning goals and learner types. Media selection—text, graphics, audio, video, and interactivity—should be embedded in an interactive learning environment and support the chosen instructional strategies. Accessibility needs must also be integrated into the design so that training is made accessible to everyone (Myers et al., 2008). The development of measures is the next most significant concern in the design phase. They must be established from the desired learning objectives and must be able to measure learner attainment of the desired results. Formative evaluation, such as practice problems and quizzes, to track learner progress and give feedback throughout the training. Summative evaluation projects and examinations—to measure aggregate learning after the training program. The plan should address what types of evaluations, how often, and how such modes of evaluations will be used to inform the assessment of students' performance.

As per the findings from the analysis phase, the design phase is where an effective training curriculum is developed to enhance *KESDM* employees' capabilities. The phase ensures that training goals are aligned with workforce needs in the energy and mining industries and include modern training techniques. Technical skills, the legal and regulatory framework, business skills, and soft skills necessary for best decision-making will be the focus of the training curriculum. As Merrill (2012) remarks, effective instructional design needs to be problem-solving oriented in realistic contexts and knowledge application so that skills that can be transferred to the workplace are learned. The programs will be designed to be competency-based to provide learners with clear performance expectations. This is consistent with Anderson & Krathwohl's (2001) revision of Bloom's taxonomy, which categorizes the learning objectives into cognitive,

affective, and psychomotor skills for an all-around training experience.

Given the budget constraints post-pandemic and the nature of *KESDM's* working environment, the training will adopt a blended learning model that integrates:

- The online version incorporates interactive features meant to support webinars and independent study modules, thereby enhancing flexibility and convenience in learning systems. The interactive features include tests, simulations, and multimedia content intended to encourage student engagement and enhance the knowledge acquisition and retention processes. Webinars provide an opportunity for live interactive engagement with teachers as well as classmates, whereas independent study courses permit students to proceed at their own pace and thus cater to various learning capacities and schedules (Durak & Ataizi, 2016).
- The offline training program will include technical simulations and hands-on workshops that facilitate experiential learning through direct participation. Case studies and scenario-based learning exercises will also allow participants to transfer theoretical principles to actual sectoral problems in the real world, consistent with proven best practices in experiential learning (Kolb, 2014).
- A blended approach integrates e-learning with classroom teaching, successfully enhancing student interest and knowledge retention through the collective strengths of both methods of learning. Electronic learning offers students convenience and flexibility to learn at their own pace, yet classroom teaching guarantees experiential learning, immediate interaction, and immediate feedback from instructors. The blended model permits an integrated learning process by utilizing interactive technology coupled with the advantages of face-to-face learning to provide increased understanding and skills application (Garrison & Vaughan, 2008).

To evaluate the effectiveness of the training, the program will implement a multi-tiered assessment framework that includes:

- Pre-testing and post-testing are critical to learning retention measurement and training program evaluation. Pre-testing provides a baseline level of student knowledge that enables trainers to tailor content to address specific learning requirements. Post-testing then measures learned and retained knowledge with specific attention to reporting on areas where further reinforcement is needed. Pre- and post-testing comparison enables organizations to determine the net impact of training programs and make data-driven changes in subsequent sessions (Kirkpatrick & Kirkpatrick, 2016).
- Field simulation-performance testing is a real way of measuring participants' ability to apply learning in real work settings. Simulations replicate real work settings in which problem-solving skills, technical competence, and decision-making within realistic constraints can be applied by trainees. Unmediated observation of participants in action allows trainers to recognize areas of strength, determine areas for improvement, and ensure that employees are properly trained to resolve job issues effectively (Salas et al., 2012).
- Feedback mechanisms such as questionnaires are also imperative in training content enhancement through the understanding of participants' comments and observations. Questionnaires allow for a quantitative understanding of the effectiveness of training modules, with trainers in a better position to understand areas of improvement. Through

constant assessment of feedback from such mechanisms, it is possible to enhance training sessions to meet learners' needs, enhance participation levels, and enhance overall knowledge uptake (Uribe & Vaughan, 2017).

In the end, the design stage is critical to developing the training program to the sector's standards level, with the integration of modern learning practices. Blended learning involves the utilization of online modules integrated with classroom learning for greater motivation and retention of learning. Competency-based assessment will be utilized to establish learners' abilities and to verify that they meet sectoral standards before permitting them to proceed to higher levels. Innovation in technology, such as Learning Management Systems (LMS), through individualized learning and regular performance tracking will facilitate *KESDMs* training program to adapt to the rapid changes in the sectoral and emerging advancements. Additionally, interactive training computer software such as simulation and gamification-based training will enhance skills through practical ability and reasoning. Lastly, this program is designed to develop a staff that is not only technologically proficient but also agile and ready to accommodate ongoing sectoral change.

3.3. Development Phase

The development stage in ADDIE is where the training program is created. It is developing the design document into tangible learning content and activities. It includes producing content, designing assessment instruments, selecting and implementing technology, and preparing the learning environment. The development phase is a very iterative process, typically involving several reviews, revisions, and refinement cycles to ensure that the training program meets the established design specifications and quality requirements.

During the development phase, many aspects of the training program were created. This may involve writing materials, visual design, audio and video recording, interactive exercise creation, and online and offline module coding. The development team then follows the design document as a guide, ensuring that the learning materials and activities are consistent with the learning objectives, instructional strategies, and assessment plan. There are routine reviews and feedback sessions conducted during the development stage to make sure that the training program is going in the correct direction and meeting the needs of the target group (Mayfield, 2011).

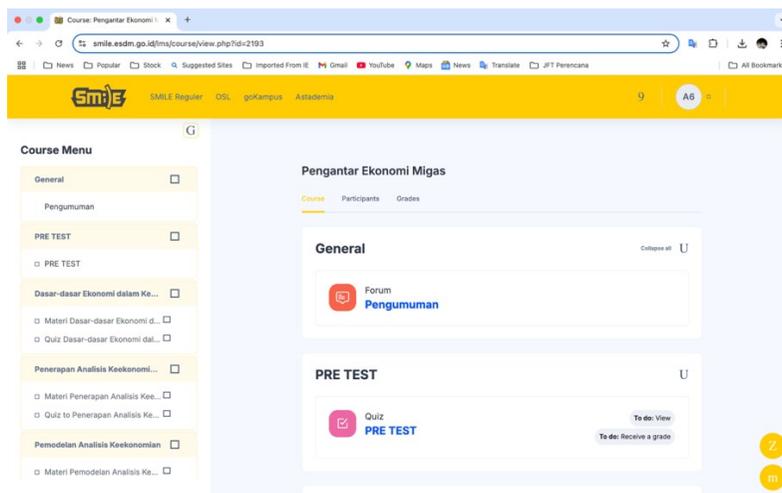


Figure 1. OSL *Pengantar Ekonomi Migas*

Source: LMS – SMILE PPSDM Aparatur

As can be seen in Figure 1, this is a screenshot of the One Stop Learning (OSL) material titled "*Pengantar Ekonomi Migas*" of the LMS—SMILE *PPSDM Aparatur*. This portal is a one-stop e-learning solution in the *Diklat TLCS* program that integrates the technical and commercial aspects of the oil and gas sectors. Developed during the Development Phase, this OSL module is a hybrid learning module engineered to impart an overall understanding of economic principles governing the sector, with a pre-test to analyze learners' minimum knowledge, to be followed by essential modules of technical fundamentals, market forces, regulatory environment, and financial impact of oil and gas operations. The module closes with a post-test and feedback evaluation system. This approach not only tests learning outcomes but also collects valuable data to assist in constant content improvement.

BPSDM ESDM has implemented 553 courses to enhance employee competencies in the energy and mineral resources industries. They were categorized into technical, laws and regulations, commerce, and soft skills to reinforce focused skill training. They have been executed with five specialized *Satuan Kerja (Satker)* that address oil and gas, mining, electricity and renewable energy, and management. To ensure maximum accessibility, the training is offered in online, offline, and blended modes, meeting different learning needs.

3.4. Implementation Phase

Implementation, in terms of the ADDIE model, is the running of the training program for the trainee population. In this phase, trainees, trainers, and learning environments are prepared; training activities and sessions are offered; and support and feedback are given continuously. Effective implementation requires strategy planning, coordination, and effective communication so the learning experience can be carried out effectively and meaningfully for each trainee.

At the implementation level, the training program is implemented according to the implementation plans. This could involve undertaking face-to-face sessions, presenting online modules, group activities, and individual mentoring (Nelson, 2000). It is during the implementation phase that facilitators do most of the work guiding learners through training elements and content, answering queries, and providing guidance. Monitoring and evaluation are being done regularly during the implementation phase so that the training is imparted and is touching the intended learning outcomes. Regular evaluation tracks the areas that need improvement so that a proper and sustainable learning outcome is achieved. Continuous feedback and support to the learners also become a top priority during the implementation phase. This may involve offering web-based discussion forums, help desks, or coaching sessions to smooth out any issues or questions that arise in training. Continuous feedback is provided to the trainees on their performance and progress, which involves and motivates them.

The implementation phase is succeeded by post-training evaluation. It is a practice of collecting feedback from the trainees as well as the trainers on their experience with the training program. Information collected during the process of evaluation is utilized to decide areas for change and make future adjustments in the training program (Kirchner et al., 2022). Through careful planning and execution of the implementation phase, organizations can successfully execute their training programs and provide learning outcomes as desired.

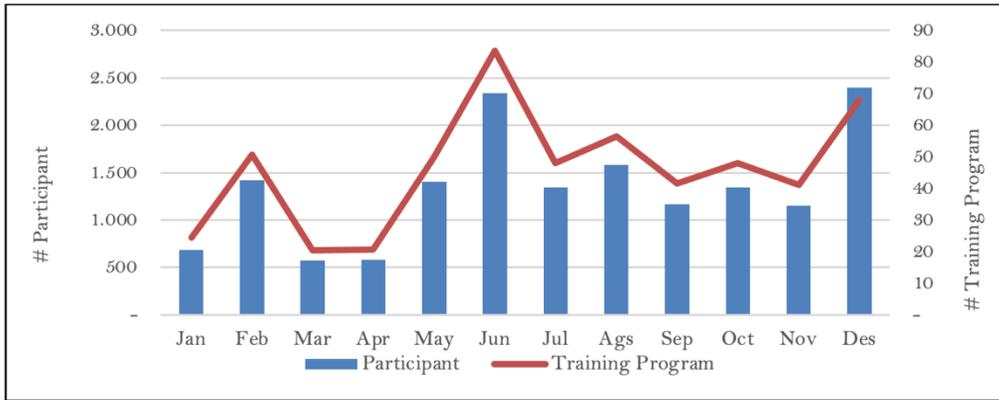


Figure 2. *Diklat TLCS* Plan in monthly basis

Source: processed from *BPSDM ESDMTNA* Report 2023

Scheduling or planning is integral to the utilization of good training programs because it allows maximum resource utilization, minimum interference, and maximum effectiveness in implementation. Proper scheduling allocates enough time for preparation, delivery, and follow-up and connects training and business goals. Prenotification of the plan to stakeholders eliminates ambiguity and removes last-minute adjustments. Flexibility must also be incorporated into the plan to accommodate unforeseen modifications, e.g., participant needs or trainer schedules. Lastly, good planning is the backbone of an excellent training program and the secret to smooth execution in inducing personal and organizational change (Stoop & Wiers, 1996). Table 1 below is the Part of the *Diklat TLCS* scheduling per participant. The timetable was so designed that no overlapping schedule be found between Executing Satker and between training courses to be executed.

Table 1. Part of the *Diklat TLCS* Scheduling per Participant

No	Executing Satker	Training Program				Participant		
		Name	Category	Method	Schedule	Name	ID	
1	<i>PPSDM Aparatur</i>	Basic Risk Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Hanafi Suroyo, S.T., M.Si.	YYYYMMDD 200801 1001
2	<i>PPSDM Aparatur</i>	Basic Risk Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Dr. mont. Drs. Anda Lucia, M.T.	YYYYMMDD 199403 1002
3	<i>PPSDM Aparatur</i>	Basic Risk Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Arifandy Setiawan, S.T., M.M	YYYYMMDD 201503 1002
4	<i>PPSDM Aparatur</i>	Basic Risk Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Ir. Ferry Triansyah	YYYYMMDD 199403 1001
5	<i>PPSDM Aparatur</i>	Basic Risk Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Ayi Ruhiat Sukartin, S.E.	YYYYMMDD 199603 1002

No	Executing Satker	Training Program				Participant		
		Name	Category	Method	Schedule	Name	ID	
6	<i>PPSDM Aparatur</i>	Basic Risk Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Yeni Yustiani	YYYYMMDD D 199403 2 001
7	<i>PPSDM Aparatur</i>	Basic Risk Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Aris Zamani, S.T., M.M.	YYYYMMDD D 200501 1 005
8	<i>PPSDM Aparatur</i>	Basic Risk Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Efendi Manurung, S.T., M.T.	YYYYMMDD D 200411 1 001
9	<i>PPSDM Aparatur</i>	Basic Risk Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Cut Dewi Nuray, S.T.	YYYYMMDD D 200212 2 002
10	<i>PPSDM Aparatur</i>	Basic Risk Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Diah Nur Rokhmah, S.E	YYYYMMDD D 201503 2 003
11	<i>PPSDM Aparatur</i>	Basic Risk Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Djuhdi Djuhara	YYYYMMDD D 200312 1 001
12	<i>PPSDM Aparatur</i>	Basic Risk Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Yadi Supriyadi, S.T.	YYYYMMDD D 199003 1 001
13	<i>PPSDM Aparatur</i>	Basic Risk Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Agus Subekti, S.T.	YYYYMMDD D 198503 1 001
14	<i>PPSDM Aparatur</i>	Basic Risk Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Gunawan Indradi, S.E.	YYYYMMDD D 200604 1 001
15	<i>PPSDM Aparatur</i>	Basic Risk Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Sulistiyani, S. Si., M.Sc.	YYYYMMDD D 201503 2 006
16	<i>PPSDM Aparatur</i>	Basic APBN Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Apriwansyah, S.T.	YYYYMMDD D 201503 1 002
17	<i>PPSDM Aparatur</i>	Basic APBN Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Lucellia Louise Gerardine Wamaty, S.Ak.	YYYYMMDD D 202012 2 002
18	<i>PPSDM Aparatur</i>	Basic APBN Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Raden Roro Fifi Indarwati, S.Si.	YYYYMMDD D 200502 2 001

No	Executing Satker	Training Program				Participant		
		Name	Category	Method	Schedule	Name	ID	
19	PPSDM Aparatur	Basic APBN Management (Batch 1)	Technical	Online	15-Jan-24	19-Jan-24	Ardison, S.T.	YYYYMMDD 2014031001
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Source: processed from *BPSDM ESDMTNA Report 2023*

3.5. Evaluation Phase

The last, and continual, task which is done through the entire cycle of instructional design is the ADDIE model's Evaluation step. Pay attention here to how well-oiled and efficient the training program is doing to achieve its purpose. Evaluation is results assessment, data gathering, and feasible action plan to make a change. It is the most critical stage in understanding if the training program is fulfilling its intention and investing in a return. Two of the biggest types of evaluation under the ADDIE model are formative and summative. Formative evaluation is done throughout the entire ADDIE process, providing feedback at every step so that one has a sense of where the training program must be altered. The continuous process of feedback is important in the development of the training program through improvement. Summative assessment, on the other hand, is carried out at the end of the program, which identifies the general success of the program in realizing its intended results (Taras, 2008).

Table 2. Part of the *Diklat TLCS* Scheduling per Participant

No	Executing Satker	Presences			Absences (Participant)
		As Plan (Participant)	Substitute (Participant)	Additional (Participant)	
1	PPSDM KEBTKE (BPE)	1.660	-	353	258
2	PPSDM Migas (BPM)	1.702	12	241	292
3	PPSDM Geominerba (BPG)	2.707	12	804	819
4	PPSDM Aparatur (BPA)	7.999	18	983	1.432
5	BDTBT (BDT)	657	4	8	1
Total Number		14.725	46	2.389	2.802

Source: processed from *Diklat TLCS Implementation Report 2024*

The various methods of collecting data are conducted at the previous stage include surveys, questionnaires, observation, and interviews. These facilitate the assessment of the effectiveness of the training program and where it needs to be improved. It depends on what the evaluation needs to achieve in terms of purposes and the characteristics of the information to be collected. The information thereby gathered is well analyzed to determine the program's strengths and weaknesses and, therefore, the most essential areas to be improved. The findings-based recommendations are utilized in suggesting revision and strengthening of the training program. These may extend from content correction, delivery mode adjustment, evaluation approaches, or other program components. The evaluation also provides helpful feedback on how effective the instructional design process is in improving the development of future training. It is

also needed to ensure the effectiveness and quality of training programs. Organizations can identify areas where they need to improve through systematic data analysis and collection and make informed decisions on future training activities based on data. Ongoing assessment guarantees that the training programs are relevant, interesting, and consistent with the needs of the learners and the organization (Welty, 2013).

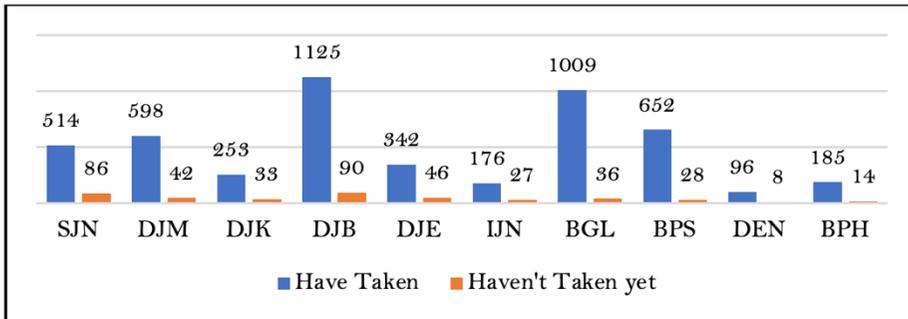


Figure 3. Technical Training Program Participant
 Source: processed from *Diklat TLCS* Implementation Report 2024

The data presented in Table 2 highlights significant irregularities in participant attendance during the *Diklat TLCS* implementation in 2024, revealing deviations from the expected plan. According to training managers across *Satker*, there are variations across online, offline, and hybrid sessions suggesting logistical, technical, or engagement challenges. Furthermore, differences among *Satker* highlight unique constraints affecting employee’s participation in *Diklat TLCS*. There are possible factors including scheduling conflicts, workload pressures, or virtual learning barriers. Disparities in attendance may also point to the need for improved methods of communication or incentives to encourage consistent participation. A thorough analysis is required to determine whether these anomalies stem from structural inefficiencies or participant-related factors. Addressing these issues through strategic adjustments in training delivery, such as flexible scheduling or enhanced digital support, will be crucial. Identifying the root causes of these discrepancies will not only help improve participant engagement but also enhance the overall effectiveness and accessibility of future training programs (Mirzazadeh et al., 2018).

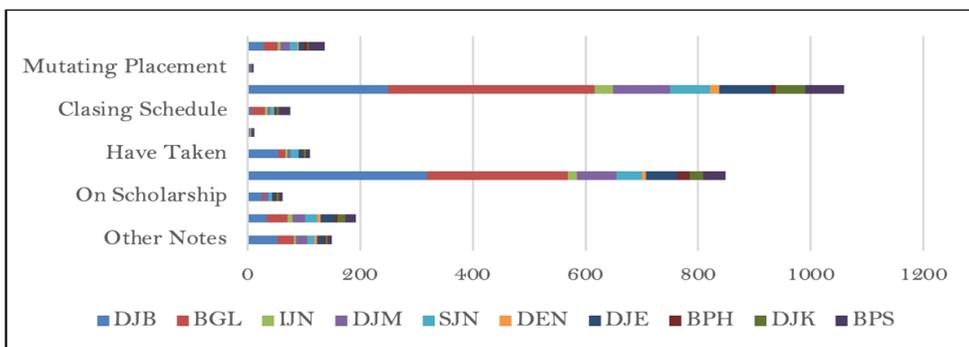


Figure 4. Accumulated Reasons of Participant’s Absences
 Source: processed from *Diklat TLCS* Implementation Report 2024

The "5 Whys" approach is a foundational tool used during the evaluation phase in the form of root cause analysis (RCA). While it is one of the most well-known methods learned for finding root causes, it is not necessarily well-liked because there is empirical evidence supporting its effectiveness. Instead, it has become well-liked based on its simplicity, its widespread history, and its use as a simple problem-solving method. To begin with, a primary evolution as part of the Toyota Production System (TPS), the "5 Whys" has since its invention become an institution of Lean methodology, sustaining the adoption of TPS. It is also a standout feature of Six Sigma, an internationally certified system of principles for quality improvement (QI). Despite controversy over its reliability, the technique is one shared tool of organizations to maximize efficiency and problem-solving methods (Ohno, 2019).

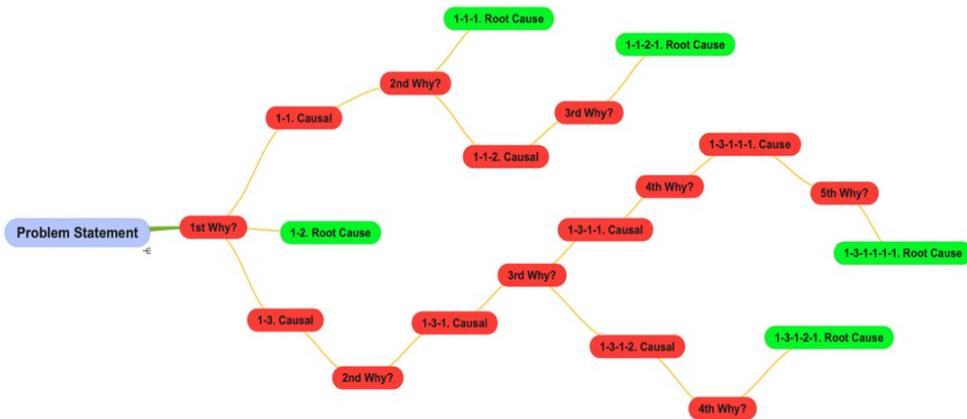


Figure 5. Causal Event Tree of 5-Whys

Source: adopted from Battles et al. (2006)

The learning potential of the "5 Whys" technique is the capacity to foster critical thinking and problem-solving by revealing the typically concealed effect of distant causes to arrive at the final experience of "aha moments" (Card, 2017). With an added causal event tree, as recommended by Battles et al. (2006), the technique becomes even more potent by providing causality with a formalized graphical representation. Such an integrated strategy enables a comprehensive examination of root causes to determine multiple root causes rather than one causal factor. Through causal event mapping, organizations can determine patterns, assess interdependencies, and uncover concealed systemic flaws that otherwise tend to go unnoticed. Moreover, the technique enables multifarious and targeted intervention techniques to be created, which results in every root cause being found to be treated by evidence-based knowledgeable interventions. Lastly, integrating the "5 Whys" with a causal event tree enhances its cutting-edge analysis, and therefore it is a useful tool for continuous improvement and quality control across various industries (see Figure 5).

To define a causal relationship in a causal event tree, we use Causal Theory. In its abbreviated form, it can be expressed as "If we do X, then Y will occur due to Z." It consists of four components: assumptions, a hypothesis that X causes Y, a deductive argument between X and Y through "because of Z," and evidence for the argument. Causal theory is a simplifying framework that helps users to decide what is significant and what is not. It is similar to the use

of a pair of binoculars, which highlights some causal relationships and downgrades others. The theory suggests that certain causal factors are more significant than others and formalizes the relations between them. Assumptions are what the theory supposes that are invariant and allow derivation of conditions for which the cause-and-effect relationship is supposed to exist (Mayne, 2019).

According to prior examination, in this study, participant absences at *Diklat TLCS 2024* are treated according to the "5 Whys" tool and the Causal Event Tree for root cause. The question is, "Why are there significant participant absences in *Diklat TLCS 2024*?" With this question, we can develop the problem statement as follows: "There are significant participant absences in *Diklat TLCS 2024*." We respond to this question by identifying causal nodes in a systematic way with a sequence of "Why?" questions at five levels. We apply causal theory at every level to extrapolate the relationships and validate connections in the Causal Event Tree (Thwaites et al., 2010).

Nusbaumer & Rauzy (2013) suggest that the first thing to do in developing causal event trees is to identify key factors that assist in the appropriate directing of causality event tree creation. They are the foundation upon which cause-and-effect paths are determined, and they ensure an orderly method of problem-solving. The primary causal key factor of participant absences in *Diklat TLCS 2024* is the miss-targeting of participants, as depicted in Figure 3. Even though overall targets for participation were met according to *BPSDM ESDM (2024)*, attendance imbalances show inherent inefficiencies in training allotments. Some workers, at the time they registered for the program, were not the intended target and hence generated mismatches between training subjects and participant needs. These mismatches not only diminish the quality of the program but also limit its contribution toward workforce competency building.

Another key causal factor identified was that several participants had never attended a technical training session, which may have resulted in skill gaps that prevented maximum participation. Several workers simply failed to attend their scheduled training, and others were replaced or added at short notice, breaking the intended configuration. Shifting organizational priorities also made attendance difficult, as staff were reprioritized to other activities. Lastly, poor documentation of non-attendance prevents proper analysis and corrective action. To remedy all of these issues, participant choice must be enhanced, prerequisites to training optimized, and monitoring increased to ensure maximal future training benefits are achieved.

With these key factors as keywords and their known causal connections, we constructed a causal event tree to search for the root causes of significant participant absences in *Diklat TLCS 2024*. Like assembling a big jigsaw puzzle, this was a matter of iterating the process again and again so that causative factors' interconnections could be further improved. We applied the "5 Whys" approach, tracing each cause path step by step to gain further understanding, as described by Card (2017). As our analysis progressed, further keywords were incorporated, extending each line of inquiry to the fifth level of questioning. The final causal event tree, shown in Figure 6, offers a formalized visualization of the causal event tree of *Diklat TLCS*, providing a complete basis for tackling the identified root causes.

With a comprehensive causal event tree produced by the "5 Whys" technique and causal theory, we identified five root causes that caused a significant participant absence during *Diklat TLCS 2024*. The omission of supporting staff or employees lacking required qualifications from technical training programs is one of the significant contributing root causes. This is the outcome of the TNA conducted by *BPSDM ESDM* in the previous year. The TNA determined that some of the technical training courses required specific qualifications, and therefore, some of the

employees, particularly support staff, were excluded from them. Thus, segments of the workforce were excluded from critical technical training, and this led to the evidenced participation gaps.

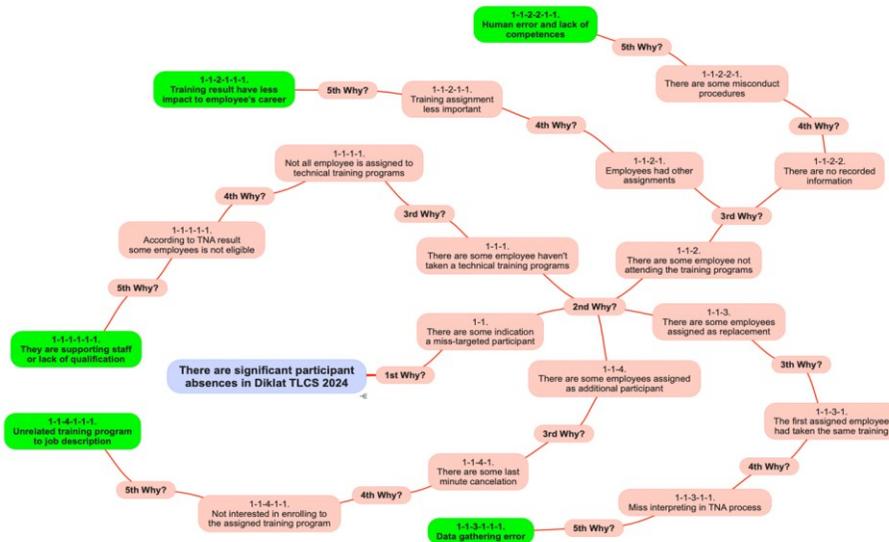


Figure 6. Diklat TLCS Causal Event Tree

An overly rigid TNA based on high-level qualifications itself becomes a hurdle to the prospect of training for those workers who, although not formally qualified, can be improved through the development of skills. Swanson (2022) believes that an effective TNA cannot only worry about high performers but also keep in mind baseline skills needed within the workplace. By rationalizing the TNA process to consider more diversified employee backgrounds and skills, companies can better have training programs fill knowledge holes instead of supporting exclusivity. Being more flexible with dispensing training would facilitate company-wide training in a learning culture.

To address this issue, *BPSDM ESDM* requires a tiered or modular training system. This is where the employees begin from the introductory courses and move on to higher levels of training with maturity, such that all levels of competency receive rich learning experiences (Kirkpatrick & Kirkpatrick, 2016). Having such a gradual method would enable employees who are not necessarily skilled initially to learn step by step so that they will not be excluded from gaining valuable things. Additionally, more updated systems of feedback would enable the system of training to be regularly changed, remaining inexpensive, relevant, and in tune with the needs of the employees. Through these practices, the *BPSDM ESDM* can enable more inclusive training activity, enhance employee development, and lower participant absences on future projects.

The second root cause discovered in the causal event tree is the fact that training schemes have little impact on the career growth of employees. The issue occurs because of the causal interaction between non-attendance in training programs and employees prioritizing other assignments. The root issue in this context is that employees may prioritize training less because its outcome does not bring forth observable career development opportunities. If employees do not perceive a clear connection between attending the training program and career advancement, they will concentrate on activities that deliver immediate gratification or recognition, with the

consequence of lower attendance.

To overcome this challenge, businesses need to strategically position training programs in the career development paths of employees to demonstrate their value in career advancement. This is achievable by staging learning possibilities along career development frameworks to make training participation directly affect the employees' promotions, job enlargement, or skill certification. Providing training programs, career guidance, and mentorship will make the employees understand how particular training programs support them in their careers (Noe, 2020). Furthermore, rather than separating training as a standalone activity, *BPSDM ESDM* must establish recurring development cycles with official follow-ups and progress reports, reinforcing the long-term payoff of continuous learning.

The second crucial strategy is the development of more relevant and legitimate training programs. *BPPSDM ESDM* must involve workers themselves in training program design activities so that training materials will be relevant to their work tasks and career aspirations. In addition, application-based activities, actual problem-solving cases, and reward systems can make workers' participation more interesting. Niati et al. (2021) argue that training programs need to offer quantifiable benefits to career growth and job performance alike. Through linking training with career growth and offering formal training opportunities, participation rates can be improved, motivation of employees can be raised, and training programs can be maximized.

The third root cause critical to the causal event tree is the failure to record training absences, linked to staff failure to report for training. This is due to misconduct of procedures in execution, brought about primarily by human error and/or inattention of the staff responsible for maintaining training records. Without proper documentation, organizations cannot quantify levels of participation, identify trends of absences, and take remedial action. Without accurate data, decision-makers lack the necessary information to optimize training practices, leading to inefficiencies in workforce development programs.

To overcome this issue, there should be effective data management systems in organizations that ensure the accuracy and completeness of the training records. One of the best solutions for this is Learning Management Systems (LMS) and electronic tracking systems that will automatically capture, store, and report training attendance and outcomes. Research by Aguinis & Kraiger (2009) enlightens the aspect that not only do LMS systems optimize efficiency in tracking learner performance but also optimize information accuracy. With such technology systems, organizations can reduce the usage of paper records and thereby reduce the extent of human errors and have all the training records at their disposal for further examination. Additionally, regular audit and verification of data can identify differences in a timely fashion without compromising training record integrity.

Alongside technology, minimizing human error in training documents incorporates capacity building among administrative training personnel. Research confirms that imparting instructional designers' and trainers' data handling capacities can restrict documentation errors by a considerable percentage (Salas et al., 2012). This can be achieved by exposing them to direct training in utilizing uniform data entry formats, implementing structured documentation formats, and documenting best practices. Besides, *BPSDM ESDM* needs to incorporate accountability solutions by refreshing employees with training personnel via procedure adherence and data management refresher training periodically. *BPSDM ESDM* may further promote a culture of accuracy and accountability, and continuous improvement by incorporating technology-based solutions and competency development programs into the training document process.

The last two root cause branches, the mismatch between training programs and job profiles and errors in data collection, both fall under the "2nd Why?" of the causal event tree. Both are associated with the deployment of employees, either as replacements or as excess members of training programs. While having different consequences, closer examination pinpoints one common root cause: a poorly facilitated TNA that cannot accurately diagnose employees' and the organization's true training needs.

An inefficient TNA process—most typically due to data misinterpretation and inadequate stakeholder input—can lead to training programs that do not address employees' actual skills gaps. To enhance the validity and accuracy of TNAs, organizations should enhance communication pathways and have a representative group of stakeholders involved in the assessment process. This method involves not only managers and HR practitioners but also the employees themselves, who can give the most relevant first-hand information on the essential competencies for their position. With a combined design of qualitative and quantitative evidence—that is, employee questionnaires, performance reviews, job analysis reports, and focus group discussions—companies can create a more accurate and complete definition of training requirements (Goldstein, 1993). This combined strategy reduces confusion and guarantees training programs address short-term competency needs along with long-term career development.

Furthermore, employing experienced practitioners with a working understanding of TNA processes and data analysis can reduce errors and improve the quality of the assessment process (Annett & Duncan, 1967). Utilizing systematic models, i.e., the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation), can provide a phased approach to collecting, analyzing, and validating training needs data. In addition, organizations must have a constant process of pilot programs and subsequent testing to model training programs before mass implementation. The ongoing cycle of validation will keep training programs applicable to employees' evolving jobs and corporate goals and thus remain increasingly engaging, relevant, and effective in the long term.

According to the solutions outlined above, we shall apply thematic analysis to critically examine and organize these solutions and finally make suggestions on how Diklat TLCS 2024 can be improved. Thematic analysis is a widely used qualitative research method that involves identifying, analyzing, and interpreting patterns or themes within data. By ranking the top themes of each solution, we grouped similar items into three main categories, with each representing a top aspect of the training and development process: ensuring an effective TNA, encouraging ongoing development, and aligning training to employees' career stages (Braun & Clarke, 2006). This is a concept-based and idea-based grouping procedure, which is used extensively in qualitative research to classify data about ideas or concepts similar in nature. It not only simplifies the complex data but also provides a deeper understanding of how different factors of training and development contribute to organizational success (Saldaña, 2021). The thematic solutions are as follows:

- Improving TNA Design and Stakeholder Involvement

Organizations should structure their TNA to identify both foundational and advanced skills essential for workforce development. To improve accuracy, it is crucial to involve a diverse range of stakeholders, including managers, HR professionals, and employees, ensuring that training initiatives align with actual sectoral demands. Regular evaluations and feedback loops will further refine and validate the analysis, making it more effective in addressing workforce needs.

- Continuous Development and Feedback Mechanisms

Training should be an ongoing process, not a one-time event. Regular feedback from employees regarding the accessibility and relevance of training programs allows organizations to refine training criteria and ensure that capable individuals are not excluded. Follow-up and assessment mechanisms are essential to track progress and ensure tangible career outcomes.

- Aligning Training with Career Pathways and Practical Application

Training programs should align with clear career pathways to support both employee development and organizational goals. When training is structured around career progression, it enhances skills, boosts engagement, and strengthens succession planning. Research indicates that career-aligned learning improves retention and ensures a highly skilled workforce. By promoting continuous development, organizations enhance their adaptability and readiness to navigate future challenges effectively.

IV. Conclusion and Recommendation

4.1. Conclusion

The *Diklat TLCS* policy in 2024, as outlined by the Head of *BPSDM ESDM*, is a comprehensive series of training programs designed for *KESDM* employees, categorized into four key areas: technical, legal, commercial, and soft skills. These programs are tailored to different employee segments, including management, portfolio staffing, and supportive staffing. While the implementation plan appears well-structured, the execution phase has encountered its share of challenges.

Despite the best efforts of *BPSDM ESDM*'s executing *Satker*, the data collected during implementation has highlighted areas that require closer examination and reflection as the program moves into its evaluation stage. There are three key areas for improvement in the training and development process: (1) Improving TNA Design and Stakeholder Involvement; (2) Continuous Development and Feedback Mechanisms; and (3) Aligning Training with Career Pathways and Practical Application.

4.2. Recommendation

The findings from the previous section present three possible solutions. Among these, the most effective recommendation we propose to management—considered a new solution for implementation—is **"Aligning Training Programs with Career Pathways and Practical Application."** This approach ensures that training is not only relevant to employees' current roles but also supports their long-term career growth. By aligning training programs with clear career pathways, organizations can create a structured and motivating learning experience that helps employees understand how their development contributes to broader organizational goals.

Furthermore, incorporating real-world problem-solving opportunities allows employees to immediately apply their learning, enhancing engagement, skill retention, and overall effectiveness. Strengthening the connection between training and career progression is crucial for maintaining employee motivation and commitment, as it demonstrates a clear return on investment for both individuals and the organization. To formalize this recommendation, organizations could implement a **"Structured Training Programs Policy,"** which mandates a systematic training pathway tailored to specific roles within *KESDM*. This policy would ensure

that every employee follows a well-defined learning trajectory, aligning training programs with job responsibilities, career progression, and overall organizational objectives.

Limitation

The research design should also consider the inherent limitations of the case study approach, including the potential for researcher bias, the subjectivity in data interpretation, and the challenge of drawing broadly applicable conclusions from a specific context. Since case studies focus on an in-depth exploration of a single or limited number of instances, findings may not always be generalizable to other settings, industries, or populations. However, despite these constraints, a well-structured case study remains a powerful tool for examining complex real-world applications, such as the implementation of the ADDIE model in training program development. By carefully selecting cases, employing multiple data sources, and ensuring methodological rigor, researchers can generate meaningful insights into the practical effectiveness of ADDIE, uncovering best practices, potential pitfalls, and areas for further refinement in instructional design.

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