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Designing an Integrated Learning Action Plan to Build Strategic Learning Environments

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ABSTRACT

This study explores an integrated instructional design framework by combining the ADDIE model, Dick and Carey's systematic instructional phases, and Backward Design, aiming to bridge skill gaps and address organizational challenges within government agencies, specifically BDKPKU. The research focuses on creating strategic learning environments that enhance cognitive and affective outcomes while aligning competency development with financial accountability goals. Key dimensions evaluated include satisfaction, cognitive impact, instructional design, leadership, and learner orientation. Using a mixed-methods approach, the study incorporated pretests, posttests, and problem-solving action learning, revealing substantial improvements in participants' comprehension and practical application of concepts. The implementation emphasized self-regulated, collaborative, experiential learning activities tailored to real-world scenarios. Results showed significant increases in engagement, motivation, and collaboration, confirming the efficacy of the integrated learning model in fostering critical skills. The research underscores the importance of leadership commitment and adaptive scheduling in sustaining learning outcomes. This model offers a replicable framework for competency development across government agencies by aligning training objectives with organizational needs. Future applications could extend the model's principles to address broader educational and organizational challenges, ensuring a sustainable impact on workforce performance and policy implementation. This approach emphasizes meaningful learning experiences, integrating theoretical knowledge with practical applications to achieve long-term professional growth.

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1. INTRODUCTION

Designing instructional materials poses significant challenges for educators and instructional designers. One primary obstacle is balancing academic content and practical application to ensure learning is meaningful and directly relevant to learners' real-world needs. This balance requires careful consideration of diverse learner profiles, including varying levels of prior knowledge, learning styles, and motivations. Encouraging collaborative practices further complicates the process, as a one-size-fits-all curriculum often fails to accommodate all learners effectively (Muljana & Luo, 2023; Flowerday & Schraw, 2000; Dela Cruz, 2019; Sharif & Cho, 2015). Additionally, resource constraints such as time, budget, and technology can hinder the design process, especially when instructional materials need to be developed rapidly to meet evolving regulations, workplace standards, or technological advancements (Ma'ruf & Rochman, 2019; Okoye et al., 2022; Sullivan, 2023). Maintaining the relevance and sustainability of professional development programs is essential to support workforce adaptability and long-term growth (Broek et al., 2023; Ferdianto & Anindita, 2023; Gravani, 2012).

Integrated learning strategies have emerged as a promising solution to these challenges, offering greater flexibility in teaching and learning while promoting sustainable development (Ababneh, 2023; Chaisri, 2024). Integrated learning is an educational approach combining the freedom to learn, professional studies, and social responsibility. Its primary aim is to prepare learners for their careers and meaningful societal engagement by integrating diverse fields of knowledge to foster critical thinking, problem-solving, and civic responsibility (Sullivan, 2023). This approach enables learners to connect relevant subject areas and skill sets naturally,

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achieving genuine competence through real-world tasks (Matinho et al., 2022). By bridging theory and practice, integrated learning ensures that educational outcomes align with the complex demands of modern professions.

In the context of government agencies, integrated learning addresses the critical need to bridge the gap between theoretical knowledge and practical application in fast-paced environments. Despite the government's emphasis on fostering a learning culture through human resource policies (UU No. 20 Tahun 2023), significant challenges remain in designing and implementing integrated learning programs. Some ministries, such as the Ministry of Finance (KMK No. 350/KMK.011/2022) and the Ministry of Law and Human Rights (Permenkumham No. 26 Tahun 2022), have adopted integrated learning strategies. However, lacking unified guidelines across agencies and limited practical knowledge in designing and evaluating such programs impede their broader adoption and effectiveness (Basalamah & Widiatmanti, 2024). Nonetheless, there is growing leadership support for fostering a learning organization culture, as evidenced by efforts within the Ministry of Finance to implement integrated learning across its training institutions (Andrayani et al., 2022; KMK No. 350/KMK.011/2022).

The urgency of implementing integrated learning is particularly evident in the efforts of BDKPKU to address competency gaps in financial accountability. Knowledge deficiencies stemming from staff turnover, insufficient understanding of financial accountability procedures, and unclear budget implementation policies have created significant risks (Simanjuntak et al., 2023). These risks include administrative negligence, delays in state expenditure payments, compromised financial accountability, and operational disruptions (Muhtar, 2012). Effective integrated learning can mitigate these risks by equipping employees with the necessary skills and knowledge to ensure good governance and financial accountability.

To address these challenges, this study aims to design, implement, and evaluate an integrated learning action plan while identifying opportunities for continuous improvement. The novelty of this research lies in the innovative combination of three well-established instructional design models: ADDIE, Dick & Carey, and Backward Design. By integrating these models, the study provides a comprehensive framework that empowers even novice instructional designers to create effective, high-quality learning experiences. Furthermore, this research introduces new dimensions for developing a strategic learning environment, evaluated through robust learning assessments. This unique approach ensures that learning outcomes are aligned with organizational needs and specifically tailored to address gaps in financial accountability competencies.

The contribution of this study extends beyond theoretical insights by demonstrating the practical application and impact of integrated learning, particularly within government agencies. By offering a structured yet flexible methodology, this research bridges the gap between policy mandates and their implementation, ensuring that training programs effectively address critical areas such as financial accountability. Through this work, government agencies can enhance their capacity to meet organizational goals, foster a culture of continuous learning, and achieve sustainable improvements in workforce competencies.

2. LTERATURE REVIEW

Instructional Design in Learning Action Plan

The first original ADDIE model for Instructional Design was developed in the 1970s by Florida State University. The first procedures address five sequential phases: Analyze, Design, Develop, Implement, and Control. Reported in Interservice Procedures for Instructional System Development for US Army Combat Arm Training in 1975 (Branson et al., 1975). Over time, the model has been refined to address its rigidity, make the phase in the loop, and incorporate more flexibility to meet modern learning needs, as promoted by Branch (2009). Along with its evolution, ADDIE is a commonly used instructional design model for designing and evaluating learning experiences in many publications (Abuhassna et al., 2024; Arif et al., 2024; Stefaniak & Xu, 2020) and even combined with other methods (Syahid et al., 2024; Saputra & Putra, 2021).

Several government institutions in Indonesia, including the Ministry of Finance, Ministry of Law and Human Rights, Ministry of Health, and Ministry of Home Affairs, have adopted the ADDIE model in their guidelines for developing learning programs (Kep DJTK No. HK.02.02/F/216/2024; KMK No. 350/KMK.011/2022; Permenkumham No. 26/2022; Permendagri No. 11/2018). ADDIE's flexibility and applicability in various educational contexts (ranging from school and university curricula to online and professional adult learning) make it a widely used framework (Deng et al., 2024). Previous studies have highlighted the advantages of

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applying ADDIE in diverse settings (Chang & Abidin, 2024; Ma'ruf & Rochman, 2019; Maxnun et al., 2024; Sunarti, 2022; Yuliarma et al., 2024).

However, some researchers point out limitations in ADDIE, such as the lengthy analysis phase, significant investment requirements, limited flexibility, and feedback mechanisms, as well as difficulties for novice instructional designers to adapt (Adeoye et al., 2024; Candiasa, 2022; Deng et al., 2024). The Dick and Carey model (Dick, 1996) offers solutions to these challenges, providing detailed stages that are especially beneficial for novice designers (Candiasa, 2022). Additionally, the Backward Design model provides a straightforward and effective framework, focusing on designing learning activities by starting with the desired end goals (Jensen et al., 2017; Nalbantoğlu & Bümen, 2024). The ADDIE model (Branch, 2009) encompasses five stages: Analysis, Design, Development, Implementation, and Evaluation. These stages are complemented by the Dick and Carey model, which details 10 steps for instructional development, including setting instructional goals, conducting analysis, developing strategies and materials, and evaluating instruction (Dick et al., 2022). Finally, the Backward Design model outlines three core stages: identifying desired results, determining acceptable evidence, and planning learning experiences (Wiggins & McTighe, 2005).

Despite their strengths, traditional instructional design models often prioritize content over human capabilities, potentially creating gaps between broad goals and specific objectives. To address this, designers should start with desired human performance outcomes and work backward to organize and sequence objectives effectively (Branch, 2009; Kopackova et al., 2024). Integrating ADDIE with Backward Design offers a structured approach, starting from desired outcomes and working backward to craft an actionable and cohesive learning plan. This includes creating action plan tables, designing learning environments, and pre-planning activities to ensure effective integration (Baaki & Luo, 2019). During the design phase, this integrated approach allows instructional designers to adapt strategies dynamically as new learning needs emerge (Wiggins & McTighe, 2005)

Combining the three instructional development models (ADDIE, Dick and Carey, and Backward Design) addresses each model's limitations, enabling even novice designers to create learner-centered, agile, and sustainable instructional designs. This integrated approach promotes learning freedom and empowers government agencies to develop their instructional processes, even in the face of limited training institutes and a shortage of instructional designers. Supported by instructional design theory and prior research, this combination effectively answers the challenge of designing integrated learning actions that are both practical and impactful. According to the Dick and Carey model, both formative and summative evaluations are critical for assessing the effectiveness of integrated learning programs (Chaparro et al., 2023). Formative evaluations provide ongoing feedback during the learning process, allowing for continuous improvement and timely adjustments to instructional strategies. In contrast, summative evaluations measure the overall achievement of learning outcomes, ensuring alignment with initial objectives (Reigeluth et al., 2017). Complementing these, cognitive evaluations assess participants' understanding and problem-solving skills, while affective evaluations examine learners' engagement, motivation, and attitudes (Maxnun et al., 2024). These evaluation methods offer a holistic view of a program's effectiveness, ensuring immediate improvements and long-term success (Chang & Abidin, 2024; Winarno & Azies, 2024). Previous studies have demonstrated the effectiveness of these evaluations in determining the quality of integrated learning programs, particularly in enhancing skills related to financial accountability within government agencies like BDKPKU.

Strategic Learning Environment

A learning environment is an environment that affects the learning process, both the physical and the social environment (Illeris, 2018). Instructional designers should attempt to create strategies replicating learning conditions in small and large group learning environments (Branch, 2009). Ensuring that integrated learning environments and learning experiences are inclusive of all learners is critical (Rao et al., 2024). Effective integrated learning helps learners retain information by keeping them engaged, focusing on the

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learning materials, and connecting new knowledge with their existing job skills (Kraiger & Ford, 2021). Activities and learning media in integrated learning enable learners to gain experience related to their future work and develop basic professional skills that positively influence employability (Winborg & Hägg, 2023).

Three primary factors influencing satisfaction in the learning process are the learning materials, the organizer, and the instructor (Elshami et al., 2021). First, aligning the learning materials with participants' expectations and needs is crucial for ensuring relevance and engagement. Materials should be well-structured, easy to understand, and accessible to enhance the learning experience (Nurdiansyah et al., 2023). Second, the responsiveness of the organizer in addressing participants' questions and needs plays a vital role in fostering a supportive learning environment (Mash & Edwards, 2020). Finally, the instructor's expertise and experience in the subject matter are critical for effective instruction, directly influencing the quality of learning and participants' satisfaction (Adewale et al., 2022; Umamah et al., 2021). In addition to these factors, the level of understanding achieved by participants in an integrated learning environment is a key determinant of cognitive achievement. This is typically assessed through pretests and posttests, which measure cognitive learning outcomes and provide insights into the effectiveness of the learning process (Yuliarma et al., 2024). Learning programs can significantly enhance participant satisfaction and cognitive outcomes by addressing these factors.

The quality of the learning environment plays a pivotal role in shaping the effectiveness of education, serving as the foundation for all educational activities (Branch, 2009). A well-designed learning environment ensures physical comfort and psychological safety, essential for fostering learner engagement and enhancing knowledge retention. Such an environment is further strengthened by the commitment of instructors and learners, driving motivation and persistence throughout the learning process. Instructional design is critical in aligning educational goals with effective methodologies, ensuring the content is relevant and applicable to learners' needs (Li et al., 2018). Leadership within educational institutions is equally vital, as it establishes a vision and cultivates a culture that supports a conducive learning environment (Antonopoulou et al., 2021; Muniroh et al., 2022). Adopting a learner-centered approach that prioritizes participants' needs, preferences, and well-being is essential for maximizing learning outcomes (Adeoye et al., 2024). When learners feel secure, respected, and valued, the learning experience becomes more effective, allowing participants to engage fully without fear or discomfort (Illeris, 2018; Morrison et al., 2019; Subha & Bhattacharya, 2022).

Leaders must act as role models for organizational performance, demonstrating a clear vision and strong commitment to drive success (Pedler & Abbott, 2008). Prioritizing continuous learning and development is essential to foster growth and improvement (Muniroh et al., 2022). Systems theory suggests that negative attitudes among leaders often stem from organizational frustrations, such as insufficient resources and challenging environments, which discourage lower-level leaders from maintaining high-quality learning. Organizational factors like a lack of enthusiasm, limited resources, resistance to change by senior leaders, and insufficient passion negatively affect the quality of learning programs (Els & Meyer, 2024). The most critical element, however, is how leaders collaborate and empower each other to implement change and cultivate a creative, innovative learning environment (Chang et al., 2022).

Based on existing literature, a strategic learning environment is crucial for academic success and fostering personal development. This study introduces a novel approach by proposing several dimensions of a strategic learning environment to be assessed through a summative evaluation questionnaire. These dimensions include learner satisfaction, cognitive impact, and aspects of the strategic learning environment, such as the learning experience, commitment, instructional design, leadership, and learner orientation. Measuring the quality of integrated learning during the summative evaluation phase will provide insights into the learning environment's effectiveness. The results will determine how well the integrated learning approach supports financial accountability in BDKPKU, offering a comprehensive understanding of its impact and areas for improvement.

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Choose the Right Learning Activity

The structured approach effectively guided the selection of learning activities for integrated learning, ensuring alignment with both educational objectives and the unique needs of learners. This alignment is crucial for creating a relevant and effective educational experience. Activities like case studies, problem-based learning, and simulations were utilized to engage learners with real-world scenarios, enhancing practical skills and critical thinking (Ge et al., 2024). Collaborative methods, including group discussions and peer learning, further enriched the learning process by leveraging the diverse experiences of participants (Keerthirathne, 2020). The selection of learning activities was influenced by factors such as the instructor's personality and background, the subject matter, and time constraints (Gravani, 2012). These activities were designed to meet immediate learning objectives and contribute to the participants' long-term professional development, making the integrated learning experience meaningful and impactful (Suputra et al., 2024).

The learning objectives focused on addressing knowledge gaps and tackling specific issues within government agencies. These identified challenges were the foundation for designing a targeted and effective learning process (Chun & Cennamo, 2022). The study incorporated a blend of self-regulated learning, collaborative learning, and action-learning approaches to achieve these objectives. This combination ensured a holistic and dynamic learning experience that was responsive to the needs of both individuals and organizations.

Self-regulated learning empowers participants to take ownership of their learning processes by setting personal goals, monitoring their progress, and adjusting their strategies as needed (Lim et al., 2020; Sutarni et al., 2021). This approach fosters independence and accountability, encouraging learners to actively engage in their education and develop effective learning habits tailored to their needs.

Collaborative learning, selected as a key activity, ensures that participants build the ability to learn effectively with their peers. By promoting peer interaction, this method encourages participants to work together, exchange ideas, and solve problems under the guidance of an instructor (Michelsen & Groβ, 2024). Collaborative learning mirrors real-world teamwork, a critical skill in professional environments, while cultivating a sense of community among learners (Winaryati et al., 2020). This approach not only enhances participants' understanding of the material but also allows them to benefit from the diverse expertise of instructors. Through collaboration, instructors can complement each other's specializations, providing a more comprehensive and enriched learning experience (Merrill, 2002).

Problem-based action learning was integrated into the instructional approach to enable learners to apply newly acquired knowledge in practical, work-related scenarios (Cother et al., 2023). Through engagement in actual projects relevant to their professional roles, learners bridged the gap between theory and practice. This method allowed them to quickly consolidate their understanding and demonstrate how the instructional content could be applied to their job responsibilities (Edmonstone, 2015). By incorporating diverse learning strategies, such as problem-based action learning, the program ensured that learning objectives aligned with the demands of real-world workplace scenarios (Blanchard & Thacker, 2013). The selected learning activities were systematically organized into an initial learning schedule, providing structure and direction for the integrated learning process. However, the implementation remained flexible to accommodate adjustments based on participants' needs, regulatory changes, new knowledge, or technological advancements introduced during the learning process. This flexibility allowed for adding or removing activities and iterative improvements to the instructional design, ensuring that the learning approach remained responsive and relevant to the evolving work environment.

3. MATERIAL AND METHOD

Research Design

This study employs a research and development (R&D) approach, aligning with Richey's (2004) framework, to design and refine an Integrated Learning Action Plan (RAP) suitable for government-integrated learning programs. The study leverages the Backward Design framework outlined by Jensen et al. (2017) to guide

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the design process. The study integrates the ADDIE model into the learning implementation process to ensure alignment with the Ministry of Finance's educational policy KMK No. 350/KMK.011/2022). Furthermore, the Dick and Carey model is incorporated to ensure a systematic and replicable learning development process. As depicted in Figure 1, the research design comprises three key stages: defining research questions to establish clear objectives, selecting and designing appropriate assessment instruments to evaluate outcomes, and developing an instrument protocol to plan specific learning activities that align with research objectives. This structured approach facilitates a comprehensive and adaptable instructional design process that effectively addresses educational goals and institutional needs.

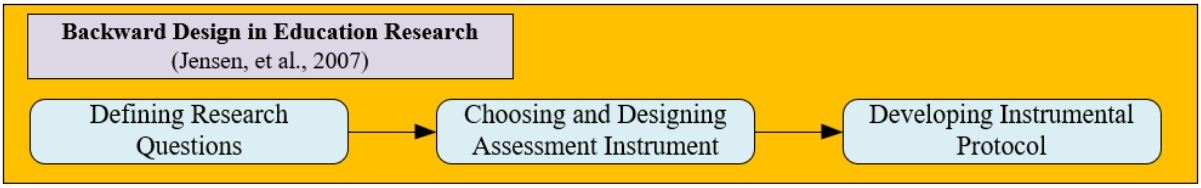

Figure 1. Research Design

Defining Research Question

The objective of this study is to address the following research questions:

1. What learning goals and activities are selected to implement integrated learning?
2. How can an integrated learning action plan be designed and implemented?
3. How effective is the implementation of integrated learning?
4. What is the quality of integrated learning about the learning environment dimension?
5. What individual skills improve, and what is the real impact of integrated learning?
6. What improvements are needed for future integrated learning?

By addressing these questions, the study seeks to provide a comprehensive understanding of integrated learning and its impact while offering actionable insights for future improvement.

Research Subject and Setting

Table 1. Demographic details of the participants

Details		Frequency	Percentage %
Gen	Male	12	54.55
	Female	10	45.45
Education	Associate Degree	9	40.91
	Graduates	4	18.18
	Undergraduates	9	40.91
Ages	20 – 29	8	36.36
	30 - 39	7	31.82
	40 - 49	2	9.09
	50 - 59	5	22.73
Job Position	Functional Position (as instructor)	3	13.64
	Structural Position	3	13.64
	Administration Staff	16	72.73
Years of service	1 - 5	6	27.27
	6 - 10	3	13.64
	11 - 15	4	18.18
	16 - 20	3	13.64
	25 - 30	6	27.27
Total		22	100

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Data collection was conducted from all 22 employees of BDKPKU. In social education research, the entire population was included as the sample due to the limited number of available participants (Bryman, 2012; Cohen et al., 2007; Sugiyono, 2021). The population for implementing integrated learning consisted of 22 employees, 12 males (54.55%) and 10 females (45.45%). Regarding educational background, most participants held either an Associate Degree (9 participants, 40.91%) or an Undergraduate Degree (9 participants, 40.91%). Regarding age, most participants were between 20–29 years old (8 participants, 36.36%). Job roles were predominantly administrative, with 16 participants (72.73%) serving in these positions. Regarding work experience, the largest groups consisted of employees with 25–30 years of experience (6 participants, 27.27%) and those with 1–5 years of experience (6 participants, 27.27%). A detailed summary of the participants' descriptive statistics is presented in Table 1.

The integrated learning program at BDKPKU is designed to involve two key groups: learners and instructors. The learners will include all BDKPKU employees, while the instructors will be drawn from the financial management team, comprising trainers, expenditure treasurers, and budget officers. Importantly, the program emphasizes equality during collaborative learning, treating all participants equally regardless of their job positions, experience levels, or prior knowledge. This inclusive approach promotes participants' social interaction, knowledge sharing, and teamwork. By fostering collaboration, integrated learning activities aim to dismantle silos, improve research outcomes, and support the achievement of overarching learning objectives (Msila, 2022).

Data Collection

Table 2. Data collection instrument in the elevation phase

No	Phase/Process	Questions/Activity	Description
A.	Formative Evaluation		
1.	Pretest & Posttest	Multiple-choice questions related to the learning materials.	To measure learning outcomes and the effectiveness of integrated learning.
2.	Problem-solving action learning	• Practice using the financial accountability application.	To assess cognitive aspects, including understanding financial accountability and the ability to operate relevant software and
		• Completion of case study questions on financial accountability.	To assess affective aspects, including skills in collaboration, responsiveness, accountability, and the ability to explain financial accountability effectively.
		• Presentation of the case study of honorarium.	
3.	Gather feedback	Discussion and observation in collaborative learning sessions.	To assess learning progress and provide input for improving or revising the learning action plan.
B.	Summative Evaluation		
1.	Strategic Learning Questionnaires	Close-ended six-point Likert scale.	To measure the quality of integrated learning.
		Open-ended responses.	To explore the enhanced individual skills, their real impact, and the future improvement of integrated learning.
2.	Focus Group Discussion	Small focus group discussion with structured questions.	• To explore the real impact and future improvement of integrated learning. • To ensure the validity of the evaluation data.

Data was collected using a mixed-methods approach, combining quantitative and qualitative methodologies. The quantitative approach aimed to approximate phenomena through survey methods (Li et al.,

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2018), while the qualitative approach provided an in-depth understanding of phenomena from a closer perspective, ensuring relevance and applicability for research purposes (Cohen et al., 2007).

This study employed tests, questionnaires, and focus group discussions (FGDs) as data collection methods. To ensure reliability and validity, all instruments underwent a rigorous validation process conducted by subject matter experts and coordinated with the central integrated learning unit. A formative evaluation was conducted to measure learning outcomes and the effectiveness of integrated learning. Quantitative data were gathered through pretest and posttest instruments, while qualitative data were collected through problem-solving action learning and participant feedback during the learning process.

A summative evaluation was conducted to assess the quality of integrated learning, using a combination of ordinal-scale quantitative data and qualitative open-ended responses obtained through a strategic learning environment questionnaire. FGDs were utilized for data triangulation during the summative evaluation phase.

According to measurement theory in action, these combined approaches enable a deeper exploration of participants' perspectives, offering a comprehensive understanding of the research subject while enhancing the validity and generalizability of the findings (Shultz et al., 2020).

This comprehensive methodology provides a practical framework for future initiatives, focusing on key metrics such as satisfaction, cognitive impact, and various dimensions of the strategic learning environment, including learning experience, commitment, instructional design, leadership, and learner orientation. Examining a construct from multiple perspectives enhances the likelihood of accurately understanding it and forming well-supported interpretations (Nemoto & Beglar, 2014). The data collection instruments are presented in Table 2.

Developing Instrumental Protocol

Pretest and Postest

Pretest and posttest questions are used to evaluate the cognitive aspects and effectiveness of integrated learning following its full implementation (Morrison et al., 2019). The test, developed by the researcher, consists of 10 multiple-choice questions validated by subject matter experts. These questions assess procedural knowledge in financial accountability, fund withdrawal planning, honorarium payments, and accountability for business trips.

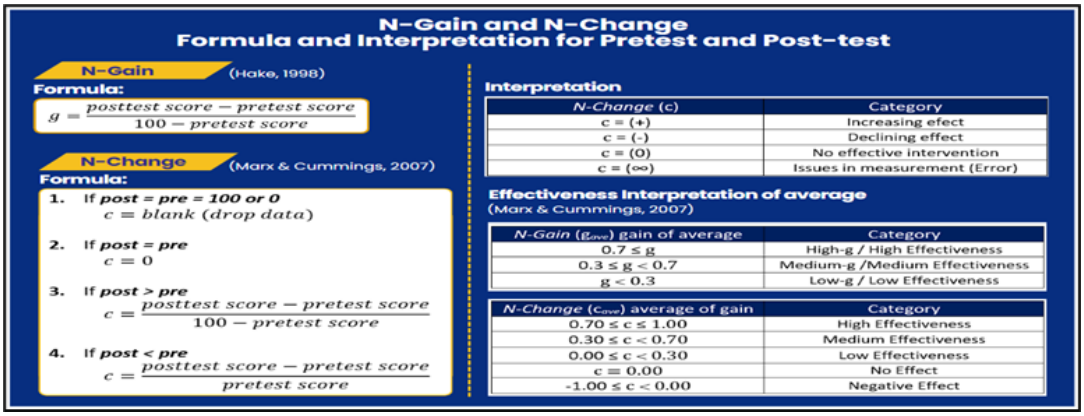

Figure 2. N-Gain and N-Change formula and eligibility criteria for pretest and posttest

The pretest is administered at the beginning of the learning process, while the posttest is conducted after the study. Sometimes, the pretest may also be administered after specific experimental treatments partway through the learning process (Cohen et al., 2007). In this study, the pretest was adjusted and administered after revising the instructional design, particularly when new employees joined the program due to staff transfers.

This study proposes a refined approach using pretest and posttest evaluations to enhance learning effectiveness measurement. Descriptive statistics and the Normalized Change (N-change) value (Marx & Cummings, 2007) were employed to assess the effectiveness of these tests. The N-Change method, similar to Hake's Normalized Gain (N-Gain) (Hake, 1999), addresses pretest and posttest scoring issues by improving validity and minimizing bias from low pretest results.

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N-change values range from -1 to +1, allowing researchers to calculate average normalized changes while excluding extreme pretest and post-test scores of 0 or 100. This flexibility makes it an ideal alternative when N-Gain produces negative values. Figure 2 provides a comparative illustration of the N-Gain and N-Change formulas.

Problem-Solving Action Learning

Action learning is a reflective process that empowers participants to collaboratively address real-life challenges, fostering individual and organizational learning (Edmonstone, 2015). It enables participants to tackle critical organizational problems while learning from their efforts to implement practice changes (Brook & Pedler, 2020). This approach has been integrated into instructional design to enhance the practical application of knowledge, strengthen problem-solving skills, and encourage collaborative learning among participants (Cother et al., 2023).

In problem-solving action learning, learners receive foundational material on financial accountability to establish a theoretical understanding. They are then trained to use relevant financial management applications to support accountable practices. Following this, participants are provided with case studies to solve, allowing them to apply their acquired knowledge and skills in practical scenarios. To conclude the process, participants present their solutions to the case studies, showcasing their understanding and the practical application of financial accountability concepts.

The goal of problem-solving action learning is to assess both the cognitive and affective dimensions of learning. Cognitively, it evaluates participants' comprehension of financial accountability and their proficiency in operating related software. Affective assessment focuses on skills such as collaboration, responsiveness, accountability, and effective communication in the context of financial accountability. Addressing knowledge and interpersonal competencies ensures a holistic evaluation, equipping participants with the critical skills needed for effective financial accountability in real-world settings.

Strategic Learning Environment

The quality of integrated learning is assessed by evaluating learner satisfaction with the learning materials, organizers, and instructors. Cognitive achievement is subsequently measured to determine comprehension of each competency theme or learning material. Finally, the study evaluates the learning environment within integrated learning, focusing on dimensions such as learning experience, commitment, instructional design, leadership, and learner orientation.

A questionnaire was developed to achieve this, incorporating an open-ended question alongside six response options designed as ordinal variables. This structure enables respondents to provide precise feedback, facilitating a detailed analysis of their perceptions and experiences (Nemoto & Beglar, 2014). A six-point Likert scale was employed, with options ranging from "strongly agree" to "strongly disagree." This approach minimizes central tendency bias, ensuring a more accurate representation of respondent opinions (Leung, 2011). The interpretation of the six-point Likert scale and its alignment with the effectiveness levels of integrated learning is detailed in Table 3.

Table 3. Interpretation of the six-point Likert Scale

Scale	Options	Score Range	Effectiveness/Quality Level
6	Strongly Agree	5.17 – 6.00	Very High (VH)
5	Agree	4.33 – 5.16	High (H)
4	Somewhat Agree	3.49 – 4.32	Average (A)
3	Somewhat Disagree	2.65 – 3.48	Average (A)
2	Disagree	1.81 – 2.64	Low (L)
1	Strongly Disagree	1.00 – 1.80	Very Low (VL)

Data for the strategic learning evaluation were collected through a questionnaire administered after the learning process as part of the summative evaluation. The questionnaire was designed based on components of the strategic learning environment identified from previous literature and validated by subject matter experts. It comprises 33 statements across seven dimensions: satisfaction, cognitive impact, learning experience, commitment, instructional design, leadership, and learner orientation. These dimensions collectively measure

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the overall quality of the integrated learning program, offering a comprehensive evaluation of its effectiveness and ability to create a conducive learning environment.

Gather Feedback and Focus Group Discussion

Affective responses were observed through participants' interactions, willingness to contribute, and enthusiasm for group activities (Li et al., 2018). The integrated learning process emphasizes the importance of observing and gathering feedback through discussions and open-ended questionnaires. This ensures effective acquisition, processing, and application of knowledge, fostering a deeper learning process among students (Editors & Boards, 2023). Instructors play a key role in this process by evaluating participants' comprehension of self-regulated learning techniques and the materials provided. Feedback is collected through inquiries about unclear materials or activities, which is then used to revise the learning action plan (RAP), such as adjusting schedules or adding supplementary materials to enhance learning flexibility.

John Edmonstone proposed using a counterfactual method to evaluate action learning outcomes (Hardacre et al., 2011). This approach addresses three core questions: (1) What changes or improvements have occurred, and how were they implemented? (2) Who was involved, and what behaviors and activities contributed to achieving these changes? (3) What outcomes were achieved, are they sustainable, and can they be attributed to the action learning program?

Focus group discussions (FGD) were employed as a qualitative method to gain in-depth insights into the integrated learning process and its outcomes (Nyumba et al., 2018). The FGD served as data triangulation to validate evaluation findings, incorporating feedback from discussions and open-ended questionnaire responses. Seven participants—including researchers, instructors, and relevant officials—were selected to ensure focused discussions on achievements, challenges, and areas for improvement in the program.

Structured FGD questions, based on literature and Ministry of Finance (MoF) policies, included: (1) What changes have occurred, how were they implemented, and how can future success be ensured? (2) What individual skills have improved, and what is the real impact of integrated learning? (3) What improvements are necessary for future integrated learning? Participants received informed consent notices, clarifying that the FGD was part of the research and would be documented as lessons learned from BDKPKU's integrated learning implementation. Sessions were recorded, transcribed, and summarized to address the study's research questions comprehensively.

4. RESULT

This section presents the findings from the development of an integrated learning design, which combines the ADDIE framework, the Dick and Carey Model, and Backward Design. The research employs Backward Design to address the research questions, ADDIE to illustrate the overall learning process, and the Dick and Carey Model to provide detailed guidance for each phase. The results focus on three key areas: defining learning goals and activities, designing instructional strategies, and implementing the integrated learning action plan.

The effectiveness of learning outcomes and the quality of the integrated learning program within a strategic learning environment are then evaluated. This evaluation is supported by data triangulation through Focus Group Discussions (FGD) to ensure the reliability and validity of the findings. Additionally, the section explores the implementation process, the real-world impact of the integrated learning approach, and recommendations for improvements to ensure future success and sustainability.

Learning Goals and Activity

The analysis stage of the integrated learning implementation needs is carried out through an early meeting. The meeting discussed current problems in BDKPKU that require follow-up through integrated learning. Several existing problems have been identified, and there is a need to improve knowledge of financial accountability. Then, it was determined who would be the instructors and officers with knowledge and skill in the learning process. Finally, it was determined that implementing integrated learning would not cost anything because instructors could be accommodated by functional officials within BDKPKU.

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The target learners in this study are all BDKPKU employees because they are all involved in the financial accountability process. Furthermore, the expected learning outcomes are: (1) Improving the responsiveness and accuracy in preparing a fund withdrawal plan, honorarium payments, and accountability for business trips at BDKPKU to serve stakeholders better; (2) Ensuring that employees at BDKPKU are competent in explaining and planning fund withdrawals, honorarium payments, and business trips, thereby facilitating effective and efficient coordination between work units. Learning materials are divided into three major subjects: fund disbursement plan, input cost and honorarium, and business trip accountability. This aims to provide an updated understanding of current regulations and the use of new technology related to business trip accountability. So that the integrated learning process can be related and implemented directly with real-work experiences.

This study incorporated self-regulated learning, collaborative learning, and action learning approaches to achieve the learning objectives. Self-regulated learning empowered participants to take control of their learning processes, allowing them to set personal goals, monitor their progress, and make necessary adjustments to their strategies. Learners were provided with various learning materials, including concise summaries, slides, knowledge management system resources, regulations and procedures related to fund withdrawal planning, honorarium payments, and business trips.

The distribution of these resources began at the onset of the RAP delivery and was repeated before the integrated learning schedule. All learning materials were stored and regularly updated on a cloud drive (Figure 4b) and shared via a WhatsApp group. This ensured that participants had continuous access to the materials, fostering an efficient and accessible learning experience.

The collaborative learning sessions at BDKPKU initially took place in person but transitioned to a hybrid format due to frequent participant absences caused by external assignments. This adaptation allowed for both in-person and virtual participation, ensuring continued engagement. During these sessions, instructors evaluated participants' grasp of self-regulated learning techniques and financial accountability concepts through teaching materials, lectures, and case simulations. Participants actively engaged in structured group discussions, applying theoretical knowledge to case studies that reflected real-world complexities such as policy updates and practical work challenges. These activities focused on understanding financial accountability processes, addressing delays, and mitigating associated risks.

The formative evaluation phase revealed the need for revisions to the learning action plan (RAP) due to staff transfers, regulatory updates, and changes in accountability applications. Action learning was employed to implement these updates effectively. New materials related to business trip accountability and application changes were distributed to participants, ensuring proper application during the accountability process. Learners had to use the updated application to submit supporting evidence for their trip accountability, providing tangible proof of progress within the action learning framework. These adjustments ensured that the learning activities remained relevant and aligned with evolving organizational needs

Combining Backward Design, Dick and Carey Model, and ADDIE in Learning Process

The integration of the ADDIE framework, Dick and Carey model, and Backward Design offers a flexible and adaptable instructional design approach, particularly beneficial for novice designers. This combined methodology supports creating a structured yet dynamic learning environment that effectively meets learner needs while accommodating changes during the learning process, such as those experienced at BDKPKU. By leveraging the strengths of each model, this approach provides clear guidance for replicating the process, ensuring both structure and adaptability in addressing instructional goals. The combined framework is illustrated in Figure 3, showcasing how these models synergize to create a robust and responsive instructional design strategy.

The ADDIE and Dick and Carey models' **Analysis phase** at BDKPKU focuses on identifying learning needs, understanding the environment, and defining roles, targeting gaps in financial and business trip accountability

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skills. For example, a need to improve participants' proficiency with new business trip management software was identified. This phase also ensures the selection of competent instructors, such as functional officers and internal experts. In the **Design phase**, a structured plan is created to address identified needs through tailored learning objectives and strategies, including collaborative learning sessions, financial accountability simulations, and business trip case studies. The most effective delivery formats, such as in-person, online, or hybrid approaches, are also determined by incorporating interactive media. The Integrated Learning Action Plan (RAP) has also been developed or revised to provide a comprehensive framework for implementing the program.

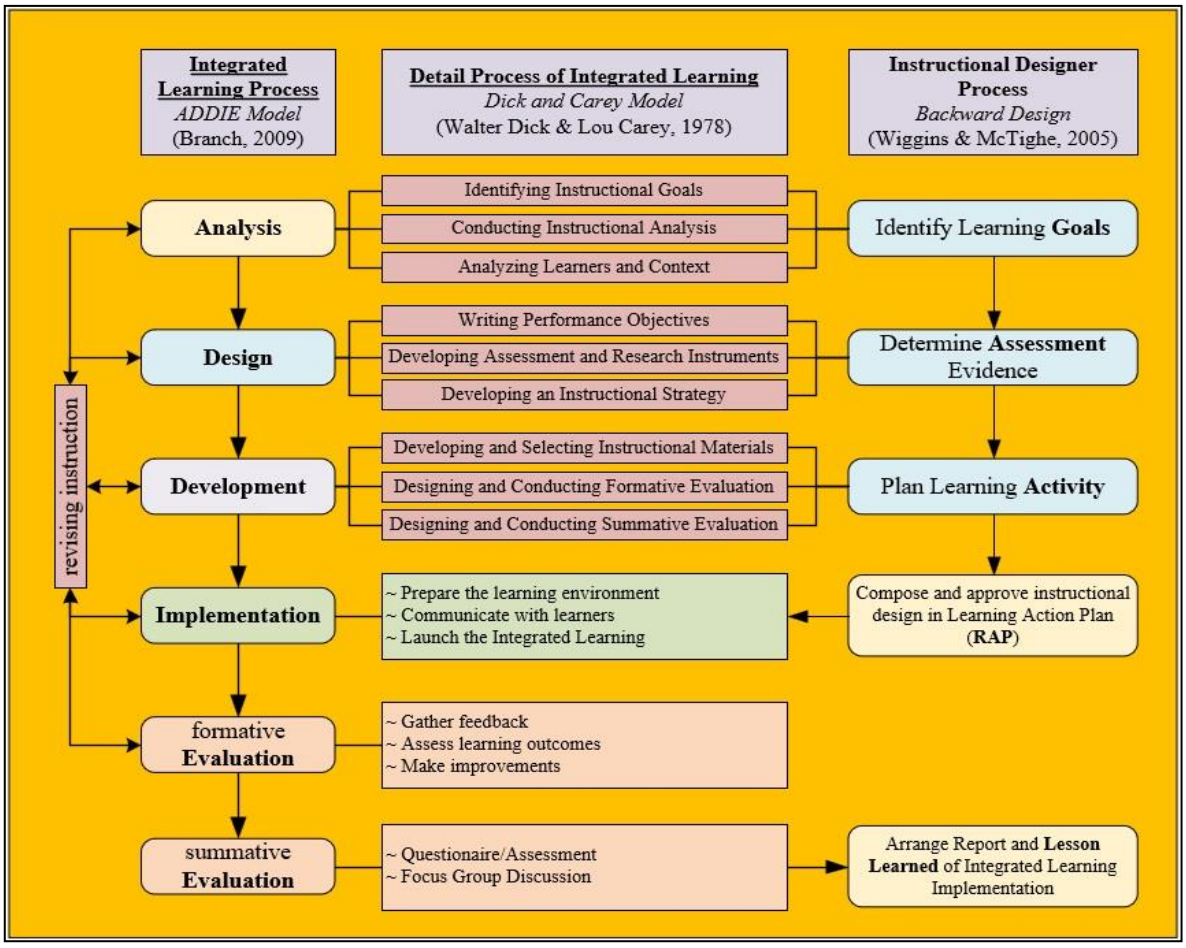

Figure 3. Integrated learning process, theory, and instructional designer Process.

During the **Development phase**, instructional materials were crafted based on the design plan, including literature, regulatory documents, presentations, digital simulations for business trip accountability, and case study materials on financial management. These resources were designed to be interactive and practical, enabling participants to apply their learning to real-world scenarios. Materials underwent rigorous testing to ensure they met the learning objectives and were effective for the intended outcomes before implementation.

In the **Implementation phase**, the training was delivered in a hybrid format, combining in-person and online sessions to accommodate participants' diverse schedules and responsibilities. Instructors guided learners through the content, ensuring engagement and effective use of newly introduced applications for accountability tasks. The **Evaluation phase** assessed the program's effectiveness through formative and summative evaluations. Formative assessments, including pretests, posttests, and feedback sessions, enabled real-time adjustments to learning activities. Summative evaluations at the program's conclusion measured learning outcomes, effectiveness, and quality. Participant feedback provided insights for future program improvements, ensuring

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continued relevance and effectiveness. Table 4 summarizes the phases and steps for replicability.

Table 4. Learning phase, process, and activity in integrated learning action plan

Phase/Process In ADDIE and Dick and Carey Model	Question/Activity	Description
Analysis		
Analysis of Learning Needs, Trainers, Environment, and Cost	• What is the problem that requires training? • What are your learning outcomes? • Who will be the instructor for the integrated learning? • Does this integrated learning need any expenses?	• There is a need to improve knowledge of financial accountability related to the fund disbursement plan, input cost and honorarium, and business trip accountability. • Instructors will be the functional officials. • No cost needed.
Conducting Instructional Analysis	What are skills and knowledge that should be included in instruction?	• Cognitive: knowledge in financial accountability and operation of related software. • Affective: responsive, accountable and competent to explain financial accountability.
Analyzing Learners and Context	• Who are the target learners? • How old are they? • What are their educational backgrounds and abilities? • What is their prior knowledge of the learning topic?	• All employees. • Majority non-finance team member. • A new employee is on duty. • All employees need to collaborate to understand financial accountability, including instructors.
Design		
Writing Performance Objectives	• What tools, materials, or resources will be provided? • What specific and observable action should the learner be able to perform? • What will the learner do that demonstrates their understanding? • What level of performance is considered acceptable? • What standards or benchmarks must the behaviour meet in terms of accuracy, responsiveness, or quality?	• Existing knowledge in Knowledge Management System. • Learning material related to the fund disbursement plan, input cost and honorarium, and business trip accountability. • Learning activities include self-regulated learning, a collaborative learning, a practical application, and presentation of action learning.
Developing Assessment and Research Instruments	• Which types of assessments are used? • How do the assessment instruments align with the learning objectives? • What techniques will we employ to gather data? • What standards will determine success?	• Learning outcome assessment: pretest and posttest, questionnaire, and action learning presentation. • Focus group discussion used to ensure validity of the evaluation data.

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Phase/Process In ADDIE and Dick and Carey Model	Question/Activity	Description
	• How will you ensure the validity of the assessment instruments?	
Developing an instructional strategy	Write down the RAP draft.	Instructional design of integrated learning compiled in RAP.
Development		
Developing and Selecting Instructional Materials	• Instructors identify knowledge, policy, or existing documents to support integrated learning. • Instructors develop learning materials to achieve the objectives. • Organizer compile learning material and develop learning schedule.	• Learning materials. • Learning schedules. • Action learning scenario.
Designing and Conducting Formative Evaluation	• Develop pretest and posttest questions. • Develop action learning activity. • Ask learners during the learning process.	• Instructors develop pretest and posttest questions. • Organizer creates questionnaire form. • Ask learners for feedback, needs, and revisions of the RAP.
Designing and Conducting Summative Evaluation	Develop summative evaluation questionnaire.	• Determine the dimensions of integrated learning. • Develop summative questions. • Organizer creates questionnaire form.
Compose and Approve Instructional Design	• Compose or revision RAP. • Request RAP approval.	• Compose all documents related to RAP. • Request RAP approval for the Integrated Learning Unit.
Implementation		
Implementation	• Prepare the learning environment. • Provide participants and instructors RAP, learning schedule, learning materials, and other learning-related information. • Deliver integrated learning program.	• Prioritize offline learning. Use online or hybrid media if some participants cannot attend in person. • Share all information about integration learning in cloud drive, whatsapp group, or direct contact. • Deliver integrated learning program.
Evaluation		
Evaluation	• Gather Feedback. • Assess learning outcome. • Improve. • Compile RAP and integrated learning report.	• Deliver questionnaire and collect evaluation data. • Focus group discussion. • Compile report and lesson learned of integrated learning implementation. • Apply for issuance of certificate of completion.

Integrated Learning Action Plan

Based on the Ministry of Finance (MoF) policies, the Integrated Learning Action Plan (RAP) is a

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straightforward documentation tool that outlines the instructional design process for integrated learning (Figure 4a). The RAP provides a structured framework for designing and implementing learning programs, ensuring alignment with organizational goals and educational standards. It guides both instructors and participants, detailing a systematic approach to achieving the program's desired outcomes.

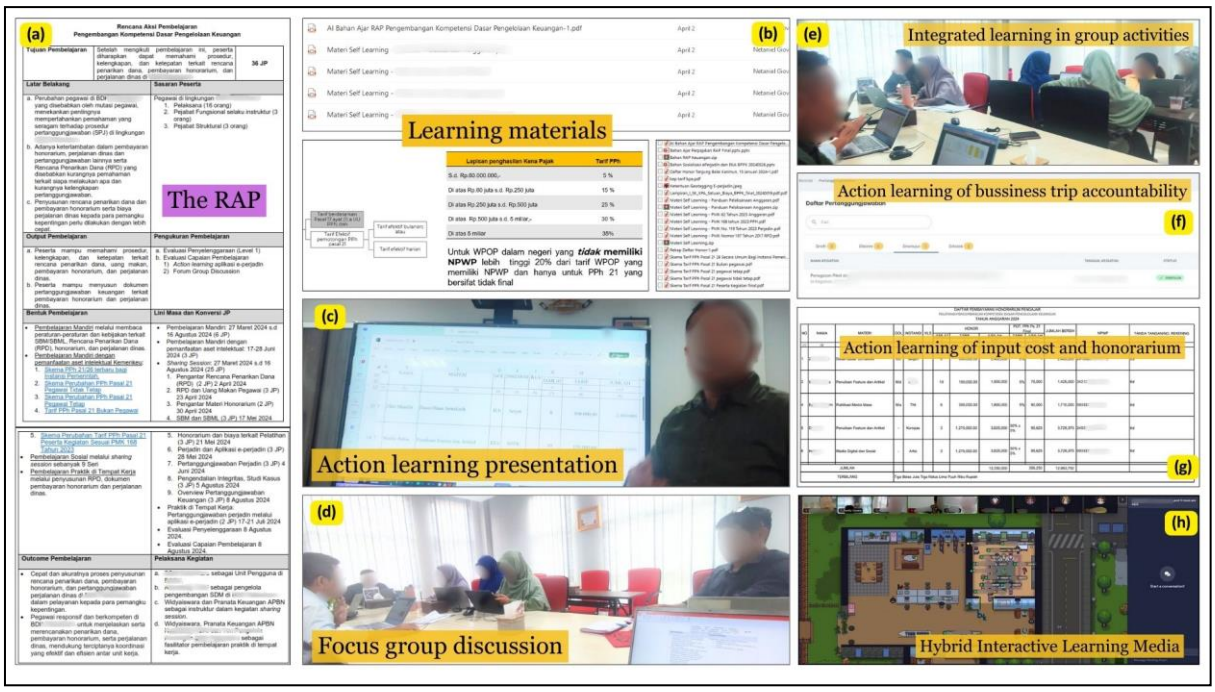

Figure 4. Learning activities and documentation of integrated learning program

The RAP includes several critical elements: **Learning Objectives**, which define the program's specific goals; **Number of Instructional Hours**, specifying session durations; and **Background of Implementation**, outlining the rationale behind the training. It identifies the **Target Participants** to ensure content relevance and describes the **Learning Output**, clarifying the skills or knowledge participants are expected to acquire. Additionally, the RAP specifies methods for **Learning Assessment**, detailing how success will be measured. It provides a roadmap of **Learning Activities**, sets a **Learning Timeline**, and focuses on **Learning Outcomes**, highlighting the broader program impact. Lastly, the RAP identifies the **Key Personnel Involved**, ensuring accountability and clarity in the execution and support of the learning activities.

Effectiveness of Integrated Learning

Cognitive aspect of integrated learning outcomes

The effectiveness of integrated learning in cognitive aspects was assessed using pretests and posttests, with data analysis performed through SPSS 26. A Shapiro-Wilk test was applied to evaluate data normality, as the sample size was less than 100. According to Sugiyono (2021), a significance value greater than 0.05 indicates that the data are normally distributed, whereas a value below 0.05 suggests a non-normal distribution. The Shapiro-Wilk test results indicated that the pretest data were normally distributed (0.217), while the posttest data were not (0.000), necessitating the application of non-parametric statistical analysis (Sugiyono, 2021). The results of the Shapiro-Wilk normality test are detailed in Table 5.

Table 5. Normality Shapiro-Wilk Test Result

Aspect	Statistic	N	Sig. Value	Information
Pretest Score	.935	19	.217	Normal

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Posttest Score	.708	19	.000	Not Normal

A non-parametric Wilcoxon signed-rank test was conducted to evaluate the impact of the treatment during the integrated learning process. The test results revealed that 1 participant experienced a positive change, 17 participants showed improvement, and 1 participant remained unchanged, as presented in Table 6.

Table 6. Wilcoxon Signed Rank Test Result

		N	Mean Rank	Sum of Ranks
Posttest - Pretest	Negative Ranks	1	4.50	4.50
	Positive Ranks	17	9.79	166.50
	Ties	1		
	Total	19		

To further analyze the effectiveness and cognitive impact of integrated learning, N-Gain and N-Change analyses were utilized. Cognitive outcomes were measured through pretest and posttest results, as detailed in Table 7. Due to biases and errors (such as only 19 participants completing the pretest and instances of decreased posttest scores despite high initial scores (-0.10))the N-Gain formula was deemed unsuitable for assessing cognitive learning outcomes. Instead, the N-Change formula was applied. The analysis indicated that pretest scores ranged from 50 to 100, while posttest scores varied from 80 to 100. Using the N-Change formula to assess the change between pretest and posttest scores, an N-Change value of 0.63 was obtained, reflecting a meaningful improvement in cognitive performance.

Table 7. Learners cognitive result through pretest and posttest

Aspect	Pretest Score	Posttest Score	N-Gain	N-Change
N	19	22	#DIV/0!	1.00
Lowest Value	50.00	80.00	-	-0.10
Top Value	100.00	100.00	-	1.00
Std.dev	13.04	5.28	-	0.31
Average	74.21	92.27	#DIV/0!	0.63

The pretest and posttest results are consistent with the cognitive achievements demonstrated by participants during problem-solving action learning and collaborative learning activities (Figures 4c, 4f, and 4g). In Figure 4f, all participants successfully completed financial accountability tasks related to business trips using the designated application, showcasing their ability to apply learned concepts effectively. Moreover, participants collaboratively solved case study questions on honorarium payments (Figure 4g) and presented their solutions during integrated learning sessions (Figure 4c). These activities highlight the achievement of cognitive objectives, confirming that the integrated learning implementation was effective in enhancing participants' cognitive abilities and their application in practical, real-world scenarios.

Affective aspect of integrated learning outcomes

Affective behaviors were systematically observed, and feedback was collected during collaborative and problem-solving action-learning activities. These affective responses played a crucial role in shaping the learning experience, fostering a positive and supportive environment while enhancing learners' motivation and attitudes toward the process. Participants who demonstrated high levels of engagement and active participation were likelier to collaborate effectively, exhibit strong teamwork, and apply critical thinking skills—all of which significantly improved learning outcomes (Figures 4e, 4h). The strong correlation between affective engagement

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and successful learning outcomes underscores the importance of nurturing motivation and positive attitudes in an integrated learning environment.

The evaluation of affective aspects further highlighted the success of action-learning activities in developing key competencies. Participants displayed strong problem-solving and explanatory skills in addressing input cost and honorarium case studies, reflecting both cognitive mastery and effective collaboration. Additionally, learners adeptly utilized the new application for business trip accountability, demonstrating technical proficiency and adaptability to technological and organizational changes. This dual achievement, combining teamwork, collaboration, and engagement, illustrates the holistic development of learners in real-world contexts. The summative questionnaire results further validated the significance of the affective dimension, including motivation, collaboration, and positive attitudes toward learning, as key contributors to the overall success of the integrated learning approach.

The dimensions of integrated learning quality

In this study, the reliability and validity of the evaluation instruments were analyzed using SPSS 26. Reliability testing was conducted via Cronbach's Alpha to evaluate the internal consistency of questionnaire items. A Cronbach's Alpha value exceeding 0.7 is deemed acceptable, and values above 0.9 indicate excellent reliability (Cohen et al., 2007). The calculated Cronbach's Alpha score of 0.984 in this study demonstrated exceptional internal consistency among the questionnaire items.

For validity, a degree of freedom (df) of 20 and a significance level of 0.05 was applied, resulting in a critical Pearson correlation coefficient (r-table) of 0.4227. The Corrected Item-Total Correlation values ranged from 0.643 to 0.935, confirming that most items were highly related to the measured constructs and demonstrated good validity. Items such as CM4 (0.643), LE3 (0.663), LD2 (0.690), and CM5 (0.699) showed slightly lower correlations but remained acceptable within validity parameters. The summative evaluation questionnaire results are detailed in Table 8, reflecting the quality of integrated learning.

Table 8. Summative evaluation of integrated learning quality

The Dimensions	Var	Questions	N	%	Corrected Item-Total Correlation	Std. Dev	Avg	Quality Criteria
Satisfaction	SA1	The learning materials align with the expectations and needs of the participants.	22	90.91	0.856	0.800	5.45	VH
	SA2	The learning material is well structured and easy to understand.	22	93.18	0.897	0.796	5.59	VH
	SA3	The learning materials are easy to access.	22	90.91	0.840	0.800	5.45	VH
	SA4	The organizer is responsive to participants questions and needs.	22	93.18	0.850	0.666	5.59	VH
	SA5	The instructor has adequate knowledge and experience about the learning topic.	22	93.18	0.729	0.666	5.59	VH
Cognitive	CO1	I understand the learning material related to the Fund Disbursement Plan.	22	86.36	0.736	0.733	5.18	VH
	CO2	I understand the learning material related to the Standard Input Cost and Honorarium.	22	90.91	0.762	0.596	5.45	VH
	CO3	I understand the learning material related to Business Trip accountability.	22	90.15	0.812	0.796	5.41	VH
Learning Experience	LE1	I feel that the learning process and experience were excellent.	22	89.39	0.781	0.790	5.36	VH
	LE2	Communication and interaction throughout the learning process were handled effectively.	22	90.15	0.723	0.666	5.41	VH
	LE3	Collaboration among participants was highly effective.	22	90.15	0.663	0.666	5.41	VH
	LE4	I felt appreciated and cared for during this learning experience.	22	88.64	0.867	0.839	5.32	VH
	LE5	The learning offered a space that encouraged creativity and innovation.	22	91.67	0.799	0.673	5.50	VH
Commitment	CM1	The leaders showed a strong commitment to providing learning opportunities.	22	89.39	0.787	0.790	5.36	VH

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	CM2	The instructor demonstrated a high level of commitment.	22	92.42	0.926	0.671	5.55	VH
	CM3	Adequate time was provided during the learning process.	22	90.15	0.783	0.796	5.41	VH
	CM4	I was motivated and interested in self-learning.	22	90.15	0.643	0.590	5.41	VH
	CM5	Work responsibilities do not interfere with the learning process.	22	83.33	0.699	1.020	5.00	H
Instructional Design	ID1	The learning process provided a theoretical that aligned with practical applications.	22	90.91	0.805	0.800	5.45	VH
	ID2	The learning activities used in this lesson are very interesting.	22	92.42	0.775	0.671	5.55	VH
	ID3	The use of technology in the learning process is very helpful.	22	93.18	0.800	0.666	5.59	VH
	ID4	The variety of presentation materials makes this learning more interesting.	22	93.18	0.788	0.590	5.59	VH
	ID5	The interactive teaching method in this learning is very effective.	22	90.91	0.850	0.800	5.45	VH
Leadership	LD1	Leaders served as excellent role models during the learning process.	22	88.64	0.768	0.780	5.32	VH
	LD2	Leaders also acted as effective facilitators.	22	90.15	0.690	0.666	5.41	VH
	LD3	Good relationships have been established in the learning process.	22	87.88	0.814	0.703	5.27	VH
	LD4	Learners were encouraged to express their opinions.	22	90.91	0.869	0.671	5.45	VH
	LD5	Leaders offered numerous learning opportunities.	22	91.67	0.935	0.802	5.50	VH
Learner-Oriented	LO1	I felt highly motivated while participating in this lesson.	22	89.39	0.824	0.727	5.36	VH
	LO2	My performance improved as a result of this course.	22	89.39	0.817	0.727	5.36	VH
	LO3	This learning experience did not negatively affect my mental health or make me feel unsafe.	22	89.39	0.750	0.727	5.36	VH
	LO4	I feel more confident due to the knowledge I gained from this learning process.	22	90.15	0.883	0.796	5.41	VH
	LO5	I gained useful, practical skills from this learning process.	22	89.39	0.903	0.902	5.36	VH
Average							5.42	VH

Table 9. The highest and the lowest scores of summative evaluation

Var	The highest score	Avg	Var	The lowest score	Avg
SA2	The learning material is well-structured and easy to understand.	5.59	CM5	Work responsibilities do not interfere with the learning process.	5.00
SA4	The organizer is responsive to participants' questions and needs.	5.59	CO1	I understand the learning material related to the Fund Disbursement Plan.	5.18
SA5	The instructor has adequate knowledge and experience about the learning topic.	5.59	LD3	Good relationships have been established in the learning process.	5.27
ID3	The use of technology in the learning process is very helpful.	5.59	LE4	I felt appreciated and cared for during this learning experience.	5.32
ID4	The variety of presentation materials makes this learning more interesting.	5.59	LD1	Leaders served as excellent role models during the learning process.	5.32

Based on the evaluation questionnaire completed by 22 participants, it was revealed that out of 33 indicators, 32 were rated as "very high quality," while one was rated as "high quality." The highest score was

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recorded in five question components, each receiving a rating of 5.59 (SA2, SA4, SA5, ID3, ID4), reflecting high quality. On the other hand, the lowest score was in the component CM5 (5.00), categorized as "high quality," followed by CO1 (5.18), LD3 (5.27), LE4 (5.32), and LD1 (5.32). The specific details of the highest and lowest scores from the summative evaluation are presented in **Table 9.** Furthermore, the satisfaction dimension had the highest average score of 5.54, while the commitment dimension had the lowest average score of 5.35.

Table 10 presents the average scores for each dimension that evaluated the quality of integrated learning. The summative evaluation yielded an aggregate score of 90.29, indicating that the integrated learning is “very high quality.”

Table 10. Dimension of integrated learning quality

Dimensions	Avg	Percentage %	Quality Criteria
Satisfaction	5.54	92.27	VH
Cognitive	5.35	89.14	VH
Learning Experience	5.40	90.00	VH
Commitment	5.35	89.09	VH
Instructional Design	5.53	92.12	VH
Leadership	5.39	89.85	VH
Learner-oriented	5.37	89.55	VH
Average	5.42	90.29	VH

Feedback and Focus Group Discussion

Observation and feedback collected during the learning sessions functioned as a formative evaluation tool to measure the achievement of learning objectives. These evaluations identified the need for additional material on honorarium accountability, driven by employee transfers and updates to the application used for business trip accountability. This prompted revisions to the Learning Action Plan (RAP). Due to work-related demands, timeline changes in the integrated learning process necessitated further adjustments to the RAP. While the questionnaire results yielded overwhelmingly positive feedback, the reliance on Likert scales raised concerns about potential response bias, where participants' answers may not fully reflect their true opinions or circumstances, possibly distorting the data. To address this, open-ended responses were analyzed and summarized to provide deeper insights. These findings were then explored further in a Focus Group Discussion (FGD) to enhance the validity and depth of the evaluation.

What has occurred, how was the change implemented, and how to ensure future success

Learners expressed high satisfaction with the instructors and organizers, highlighting their responsiveness and excellent learning experience design. The selection of materials, learning media, activities, and supporting technology created a highly engaging and enjoyable environment. Integrating hybrid interactive learning media further enhanced discussions and collaborative sessions, making the experience more dynamic and impactful.

The choice of financial accountability as the learning theme effectively addressed employees' organizational challenges. Adaptability in developing and modifying the Learning Action Plan (RAP) proved beneficial in responding to employee transfers and knowledge gaps encountered during the process. The integrated learning activities were well-aligned with organizational needs, providing a meaningful and relevant experience under the guidance of skilled instructional designers and instructors.

Maintaining adaptability and incorporating regular evaluations will be essential to sustaining the program's effectiveness. Updates to the RAP will help the organization address emerging challenges and ensure alignment with evolving requirements. Feedback mechanisms, such as allowing participants to share insights on areas of improvement, will ensure the program remains responsive and relevant. Moreover, leveraging the

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feedback loop will enable instructors and organizers to identify and address unnoticed issues, fostering continuous improvement in the integrated learning process (Chun & Cennamo, 2022; Mash & Edwards, 2020)

What individual skills improve, and what is the real impact of integrated learning?

Learners demonstrated strong individual capabilities in comprehending cost and honorarium case studies and effectively utilized the business trip accountability application. They successfully implemented new knowledge and technology in alignment with organizational changes, showcasing adaptability and proficiency. Notably, all employees, including senior staff members, could understand and apply the material provided during the integrated learning program. Senior staff members successfully accounted for their business trips using the newly implemented business trip application facilitated by functional officials serving as instructors.

One of the most significant outcomes of the program was the heightened awareness of financial accountability. The finance team gained a deeper understanding of relevant regulations, and all employees demonstrated the ability to apply proper governance practices. These improvements were evident in group discussions and the overall financial accountability process, completed with increased speed and accuracy, as noted by the finance team and relevant officials.

What Improvements are needed for future integrated learning?

Several improvements have been identified for future integrated learning initiatives to enhance their effectiveness. Incorporating real-life case studies that address specific organizational challenges would allow participants to apply theoretical concepts to practical scenarios, increasing the program's relevance and impact. Tailoring action learning case studies and selecting appropriate learning activities can enrich the learning experience. Continuous collaboration between instructional designers, instructors, and participants is essential to ensure the program remains current and effective in addressing current and future organizational needs. Adjustments and additions to learning materials and time allocations have been implemented to meet participants' requirements better.

Managing the learning schedule amidst heavy workloads remains a significant challenge. The integrated learning schedule has been revised multiple times due to work demands, but stricter adherence is necessary to maintain continuity and focus. Suggestions include elaborating detailed schedules for each department and creating a monitoring dashboard to display progress visibly, such as in the office lobby, to ensure accountability and engagement. Additionally, ensuring active participation, particularly from leaders, is critical for the program's success. These challenges, highlighted in open-ended feedback and FGD discussions, underscore the need for careful planning and robust monitoring mechanisms to balance workload demands and active involvement in integrated learning activities.

5. Discussion

The findings of this study demonstrate that integrated learning provides significant advantages over traditional classroom models, particularly in addressing skill gaps and organizational challenges. Integrating learning fosters effective adult professional development by offering flexibility to accommodate participants' needs. The ability to make adjustments during implementation (such as updating learning materials and regulations, accommodating staff transfers, and adapting to new technologies) ensures that learning objectives are met. This approach addresses organizational issues and guarantees learners' understanding of procedures and the completeness and accuracy of financial accountability, forming the foundation of an effective learning process (Chun & Cennamo, 2022).

The flexibility inherent in integrated learning aligns with David Merrill's instructional design principles, which emphasize the activation of existing knowledge to facilitate the demonstration, application, and integration of new knowledge for solving real-world problems (Merrill, 2002). This adaptability not only enhances

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the achievement of learning goals but also ensures the success of the learning process by aligning with best practices in instructional design. By focusing on responsiveness to learners' needs and organizational contexts, integrated learning is a robust model for achieving improved outcomes and fostering long-term professional growth (Elshami et al., 2021; Faizah et al., 2022).

Research and development in instructional design, leveraging the Backward Design framework alongside the implementation of integrated learning through ADDIE and the Dick and Carey model, empower novice instructional designers to craft learning experiences that meet learners' needs, align with organizational policies, and adapt to flexible requirements. This integrated approach addresses the limitations of the ADDIE model noted in the literature, such as lengthy analysis stages and lack of flexibility, by streamlining the instructional design process with Backward Design to ensure a timely launch of learning programs. Simultaneously, it incorporates the detailed procedural guidance of the Dick and Carey model to provide a comprehensive structure for the development process (Adeoye et al., 2024; Candiasa, 2022; Deng et al., 2024; Jensen et al., 2017; Nalbantoğlu & Bümen, 2024).

This combination accelerates the development timeline and enhances the robustness and replicability of integrated learning programs within government agencies. By balancing strategic planning with detailed execution, this methodology offers novice instructional designers a practical and effective framework for implementing high-quality, adaptive, and learner-centered programs.

The selection of learning activities for integrated learning at BDKPKU effectively combined self-regulated learning, collaborative learning, and problem-solving action learning to achieve educational goals. Self-regulated learning gave participants an initial understanding of financial accountability, as a foundation for subsequent collaborative and problem-solving activities. This approach supported the concept of freedom to learn, allowing participants the autonomy to engage in independent study (Muljana & Luo, 2023; Sutarni et al., 2021). While self-regulated learning requires strong participant motivation for successful implementation (Mahbuba, 2023; Sangsawang, 2020; Spatioti et al., 2022), both formative and summative evaluations demonstrated that participants remained motivated and engaged throughout the process.

Collaborative learning and problem-solving action learning enhanced learning objectives by fostering participant interaction and knowledge sharing. These methods leveraged participants' existing knowledge, enabling them to solve real-world workplace challenges collaboratively while fostering a sense of community (Kraiger & Ford, 2021; Michelsen & Groβ, 2024; Winaryati et al., 2020). The results of pretests and posttests confirmed knowledge improvement, with participants completing case studies and utilizing new technology for business trip accountability. These findings highlight the cognitive and affective benefits of integrated learning and its significant impact on addressing real-world organizational issues. Consistent with prior studies (Chaisri, 2024; Keerthirathne, 2020), implementing integrated learning in government agencies effectively enhanced the skills required for practical applications, underscoring its value as a strategic approach to professional development.

The success of learning activities at BDKPKU was significantly supported by organizers and instructors who played pivotal roles in facilitating the integrated learning process. According to social learning theory (Bandura, 1971), competent instructors are crucial for modeling behaviors and skills, as participants learn through observation and interaction. Social constructivism theory (Vygotsky) further underscores the importance of social interaction, where instructors and leaders act as facilitators to encourage dialogue and collaboration (Chun & Cennamo, 2022).

The quality of integrated learning outcomes, particularly in financial accountability, is strongly influenced by well-structured, diverse, and comprehensible learning materials, alongside skilled instructors and organizers and the integration of technology. Instructors must possess digital literacy, enabling them to create digital learning resources, effectively communicate in both physical and virtual spaces, lead engaging learning experiences, evaluate diverse teaching methods, and support students in achieving their educational goals (Ally,

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2019; Mulang, 2021). Effective facilitation in an integrated learning environment involves asking thought-provoking questions, listening actively to clarify learners' ideas, providing constructive feedback, understanding group dynamics, employing creative problem-solving tools, reflecting on past experiences, and adapting to diverse learning processes (O'Hara et al., 2004).

Instructors' strong facilitation skills are essential for guiding learners while empowering them to acquire knowledge independently. This approach has been instrumental in ensuring the quality and success of integrated learning at BDKPKU, as evidenced by previous studies (Abuhassna et al., 2024; Haryati, 2018; Nurdiansyah et al., 2023; Tapilouw, 2020).

Aligned with the learning objectives, participants demonstrated a solid understanding of financial accountability's theoretical and practical aspects. This included expertise in fund disbursement planning, standard input cost honorarium management, business trip accountability, and a thorough grasp of tax policies. These achievements highlight the strategic advantages of integrated learning in addressing the practical needs of government agencies. A well-structured strategic learning environment bolstered the success of integrated learning. Dimensions of the program, including Satisfaction, Cognitive Outcomes, and components of the strategic learning environment such as Learning Experience, Commitment, Instructional Design, Leadership, and Learner-Centered Focus, collectively indicate that the program was executed with very high quality.

Despite the overall effectiveness and quality of the integrated learning program, certain areas require further attention. Challenges include managing the workload of regular job responsibilities, fostering positive relationships among employees through appropriate recognition during training, and reinforcing leadership's role as a model throughout the learning process. Previous studies (Broek et al., 2023; Gravani, 2012) have emphasized that time constraints and workload demands are persistent challenges in learning implementation. Addressing these issues requires a strong commitment from both leadership and employees to ensure the successful completion of each learning cycle, including integrated learning programs (Al-Hadrami et al., 2024; Els & Meyer, 2021, 2024; Giovanni et al., 2024; Rabiul et al., 2022)

Positive employee relationships and appropriate recognition play a crucial role in motivating learners to actively engage in discussions, ask questions without hesitation, and feel secure, thus fostering a safe and supportive learning environment (Broek et al., 2023; Keerthirathne, 2020; Muljana & Luo, 2023; Prashanti & Ramnarayan, 2020). A comfortable and inclusive learning space significantly enhances satisfaction (Zhao et al., 2021), while dedicating sufficient time to integrated learning activities is critical for success (Mash & Edwards, 2020). Establishing a safe, equitable, and effective learning environment requires continuous reflection on factors influencing learner engagement and motivation, ensuring that barriers to participation are addressed (Prashanti & Ramnarayan, 2020).

Leadership commitment is another vital component in the success of integrated learning. Leaders who serve as role models and actively participate in learning can inspire learners to fully engage and commit to their development (Mash & Edwards, 2020; Morze et al., 2021; Pedler & Abbott, 2008). Such leaders ensure adherence to learning schedules and encourage active participation from all learners. By fostering collaboration and empowerment, leaders help bridge organizational knowledge gaps and cultivate an agile, resilient, and sustainable learning culture (Eacott, 2015; Giovanni et al., 2024; Hagerer et al., 2020). Their involvement and dedication contribute to integrated learning initiatives' overall success and sustainability.

6. CONCLUSION

This study introduces a novel integration of the ADDIE, Dick and Carey, and Backward Design models for designing, implementing, and evaluating integrated learning within government agencies. Combining these models offers a structured, adaptive, and systematic framework to meet evolving regulations, policies, and competency needs. ADDIE ensures a comprehensive implementation process, Dick and Carey provide detailed stages with formative and summative evaluations, and Backward Design aligns each learning activity with clear end goals. This integrated methodology bridges the gap between theory and practice, enhancing learning

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effectiveness while supporting accountability and performance quality in government institutions, making this study a strategic guide for public sector training. Evaluation results confirm that integrated learning significantly improves participants' cognitive and affective competencies. Cognitive assessments using the N-Change approach and activities like self-regulated, collaborative, and problem-solving action learning demonstrated enhanced comprehension and practical skills application. Affective evaluations, through observations and focus group discussions, highlighted increased motivation, engagement, and collaboration among participants. The dimensions of the strategic learning environment (satisfaction, cognitive impact, learning experience, commitment, instructional design, leadership, and learner orientation) reflected the program's quality and relevance. To sustain its impact, future initiatives must emphasize strong leadership commitment, active participation, and effective management of learning schedules in demanding work environments while maintaining high standards across all dimensions of integrated learning.

7. LIMITATIONS

The main limitation of this study is the sample size, as the quantitative analysis included only 22 BDKPKU employees. Qualitative methods and data triangulation were employed to enhance the reliability and validity of the findings. However, future research should include multiple institutions to improve the generalizability of the results and offer a broader perspective on the effectiveness of integrated learning across diverse organizational settings. This approach would provide a deeper understanding of how integrated learning can be adapted and optimized in varying contexts

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