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Integrating Artificial Intelligence in the Workplace: An Instructional Design Perspective

Dr. Jiwak Raj Bajracharya

In today's world, Artificial Intelligence (AI) has emerged as an effective assistive technology for enhancing the quality and efficiency of task accomplishment across workplaces, regardless of sector. As highlighted by Wilkens (2020), the integration of AI can significantly improve the quality of work by increasing accuracy and reducing human error. Similarly, Bajracharya (2021) argued that just as technology integration has contributed to effective teaching and learning, AI integration holds comparable potential across diverse professional contexts. Therefore, the debate is no longer about whether AI should be integrated into the workplace; rather, there is an urgent need to develop effective Instructional Design (ID) strategies that facilitate meaningful AI integration while minimizing extraneous cognitive load.

Instructional Design (ID) is a systematic and procedural approach to designing and developing instruction based on contextual needs (Bajracharya, 2019). It ensures ease of use and practical applicability, making it highly relevant for integrating AI into workplace practices. Among the various ID models and frameworks, the ADDIE model can be considered particularly suitable due to its generic and macro-level structure, which allows application across diverse contexts and disciplines.

**Dr. Jiwak Raj Bajracharya is the Editor-in-Chief of NJMSR and Research & MBA Director at Global College International, holding a PhD from International Christian University, Japan under the Mitsubishi Research Fellowship.*

*Editorial Email: jiwak@gci.edu.np

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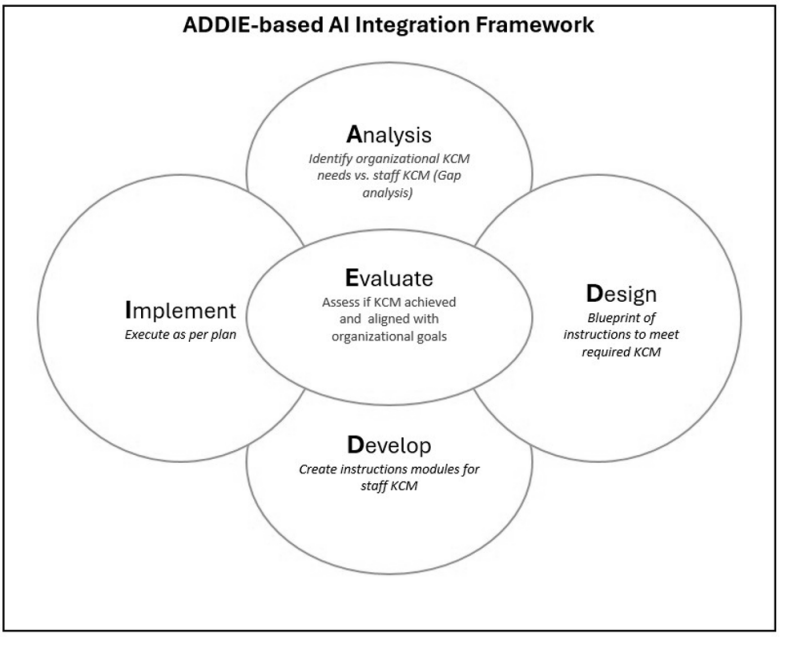
ADDIE is an acronym for Analysis, Design, Development, Implementation, and Evaluation. In the analysis phase, multiple dimensions are explored to conduct a needs assessment, identify performance gaps, and define clear objectives. Based on this, the design phase focuses on structuring instructional strategies, where peer review, expert consultation, and validation of instructional blueprints are essential before proceeding further. The development phase involves creating necessary materials, media, tasks, and assessment instruments aligned with the design specifications. Following development, the implementation phase ensures the execution of the instructional plan in real workplace settings. Finally, the evaluation phase uses various tools, developed during the design and development stages, to assess effectiveness, with findings informing continuous improvement.

Although AI integration is increasingly essential in modern workplaces, both employers and employees often face dilemmas in developing context-specific instructional strategies that align with organizational goals. While numerous studies have focused on developing AI tools for specific skills, there remains a significant gap in research on designing and developing instructional frameworks within organizations themselves, particularly through Human Resource (HR) or Learning and Development (L&D) departments. Specifically, there is a need to identify the key Knowledge, Competencies, and Mindsets (KCM) required from existing staff members to effectively leverage AI for organizational success. Therefore, this study proposes a preliminary framework based on the ADDIE instructional design model to support organizations in developing feasible, relevant, and context-sensitive instructional strategies for AI integration.

Figure 1

ADDIE-based AI Integration Framework



Note. ADDIE-based AI Inetegration Framework consisted of five major phases and its key functions as oulined below:

- *Analysis*: Identify organizational KCM needs vs. staff KCM-gap analysis
- *Design*: Blueprint of instructions to meet required KCM
- *Develop*: Create instructions modules for staff KCM
- *Implement*: Execute as per plan
- *Evaluate:* Assess if KCM achieved and aligned with organizational goals

As illustrated in Figure 1, organizations can implement the proposed ADDIE-based AI Integration Framework to achieve their goals by systematically analyzing employees' Knowledge, Competency, and Mindset (KCM). This analysis can be conducted through surveys, focus group discussions (FGDs), staff meetings, and performance appraisals to identify existing gaps.

Following gap identification, department heads and supervisors collaborate with managers, experts, and senior staff to determine the essential KCM and define targeted instructions. These instructions are then developed using ap-

propriate AI tools, carefully selected based on contextual relevance and learning objectives. This development phase is critical, as the effectiveness of AI integration depends on aligning tools with desired KCM outcomes. Subsequently, the designed interventions are implemented and evaluated through both formative and summative approaches, with evaluation integrated across all ADDIE phases.

As a preliminary framework, the ADDIE-based AI Integration Framework requires further validation. It emphasizes the core principles of ADDIE while guiding the strategic selection of diverse AI tools to design feasible and context-specific instructional solutions. Ultimately, the framework aims to reduce extraneous cognitive load in selecting AI tools and enhance employees' KCM in the workplace for achieving organizational goal.

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