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POST-PANDEMIC CURRICULUM ADAPTATION IN THE DIGITAL LEARNING ERA

ADAPTASI KURIKULUM PASCA-PANDEMI DI ERA PEMBELAJARAN DIGITAL

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Abstrak

Pandemi COVID-19 membawa perubahan besar dalam praktik pendidikan dan mempercepat pemanfaatan pembelajaran digital di berbagai jenjang. Memasuki era pascapandemi, adaptasi kurikulum menjadi kebutuhan penting agar pembelajaran tetap relevan, fleksibel, dan selaras dengan perkembangan teknologi. Penelitian ini bertujuan mengembangkan model konseptual adaptasi kurikulum pada era pembelajaran digital menggunakan kerangka desain pembelajaran ADDIE, yang mencakup tahap Analyze, Design, Develop, Implement, dan Evaluate. Penelitian ini menggunakan metode Research and Development (R&D) melalui analisis literatur dan telaah ahli untuk menyempurnakan model adaptasi yang dikembangkan. Hasil penelitian menunjukkan bahwa adaptasi kurikulum pascapandemi memerlukan integrasi literasi digital, strategi pembelajaran berpusat pada peserta didik, asesmen berbasis teknologi, serta fleksibilitas pembelajaran bauran. Model berbasis ADDIE yang dihasilkan memberikan kerangka sistematis bagi pendidik dan pengembang kurikulum dalam menyesuaikan komponen kurikulum agar lebih mendukung lingkungan belajar digital. Penelitian ini berkontribusi pada penguatan inovasi kurikulum dan memberikan rekomendasi praktis bagi peningkatan perencanaan pembelajaran di era digital pascapandemi.

Kata Kunci: Adaptasi Kurikulum; Pembelajaran Digital; Pendidikan Pascapandemi

Abstract

The COVID-19 pandemic significantly transformed educational practices and accelerated the adoption of digital learning across all levels of schooling. As institutions transition into the post-pandemic era, curriculum adaptation is essential to ensure that learning remains relevant, flexible, and aligned with technological advancements. This study aims to develop a conceptual model for curriculum adaptation in the digital learning era using the ADDIE instructional design framework, which consists of the Analyze, Design, Develop, Implement, and Evaluate phases. The research employed a Research and Development (R&D) approach supported by literature analysis and expert review to refine the proposed adaptation model. The findings indicate that curriculum redesign in the post-pandemic context requires the integration of digital literacy, learner-centered strategies, technology-enhanced assessments, and flexible blended learning. The ADDIE-based model developed in this study provides a systematic structure to guide educators and curriculum developers in modifying curriculum components to better support digital learning environments. This research strengthens curriculum innovation efforts and offers practical recommendations for improving instructional planning in the post-pandemic digital era.

Keywords*: Curriculum Adaptation; Digital Learning; Post-Pandemic Education*

INTRODUCTION

The COVID-19 pandemic has brought significant changes to educational systems around the world. Schools and universities were required to shift abruptly from conventional face-to-face instruction to online and technology-assisted learning (Dhawan, 2020). This transition highlighted many challenges, including limited digital literacy among teachers and students, unequal access to technological resources, and the lack of curriculum structures that support flexible digital learning environments (Firman & Rahayu, 2020). As educational institutions enter the post-pandemic era, they are expected to design learning experiences that remain relevant, flexible, and aligned with technological advancements (Kim & Park, 2021). Therefore, adapting the curriculum to accommodate digital learning has become an important priority for schools and policymakers.

Several studies have explored issues related to digital readiness, online learning implementation, and the effectiveness of technology-integrated instruction. Research indicates that successful digital learning depends on digital competence, effective instructional design, and appropriate curriculum alignment (Bond, 2021). Additional studies note challenges such as student disengagement, digital inequality, and the absence of structured frameworks for supporting digital learning practices (Adedoyin & Soykan, 2020). These findings demonstrate that pre-pandemic curriculum structures were not adequately designed to support technology-enhanced learning, making curriculum adaptation a necessity in the current educational landscape (Panigrahi et al., 2021).

Despite these findings, few studies propose curriculum adaptation models that use systematic instructional design frameworks. Existing literature generally focuses on describing challenges or evaluating online learning practices rather than providing structured approaches for developing post-pandemic curriculum components (Bond, 2021). This creates a gap, particularly in how curriculum developers can apply instructional design models to redesign learning frameworks for digital environments. The ADDIE instructional design model Analyze, Design, Develop, Implement, Evaluate offers a systematic and comprehensive framework that can guide curriculum redesign in the post-pandemic era.

The novelty of this study lies in proposing a curriculum adaptation model based on the ADDIE framework specifically tailored for digital learning. Unlike previous research that primarily addresses online learning challenges, this study introduces a structured approach to applying each phase of ADDIE to redesign curriculum components aligned with digital learning needs.

Based on this background, the research problem is formulated as follows: *How can the ADDIE instructional design model guide curriculum adaptation in the post-pandemic digital learning era?* The purpose of this study is to develop a conceptual curriculum adaptation model using the ADDIE framework to support educators, curriculum designers, and schools in planning learning experiences suited to post-pandemic educational demands.

LITERATURE REVIEW

The literature review presents a systematic explanation of previous studies related to curriculum adaptation and digital learning in the post-pandemic era. This section also outlines the theoretical foundations and key concepts that support the development of the ADDIE-based curriculum adaptation model. The theories included here consist of qualitative descriptions and

conceptual frameworks that are relevant to the problem being studied. Each reference cited is listed both within the text and in the reference section.

Curriculum Adaptation Concepts

Curriculum adaptation refers to the process of modifying curriculum components to meet learners' needs, learning environments, and technological developments. In the post-pandemic era, curriculum adaptation has become essential due to major changes in learning modalities, particularly the shift from face-to-face instruction to technology-based learning. Kim & Park (2021) emphasizes that a curriculum must accommodate flexible learning structures and support students' digital literacy. This requires revisiting learning objectives, selecting relevant content, and designing adaptive instructional strategies. Furthermore, Firman and Rahayu (2020) explain that curriculum adaptation ensures the continuity of effective learning under conditions requiring digital support. Thus, curriculum adaptation is a strategic response to changes in the educational landscape shaped by the digital era.

Digital Learning in the Post-Pandemic Era

Digital learning utilizes information and communication technologies as the main medium for instruction. Dhawan (2020) notes that digital learning provides flexibility but also presents challenges related to digital competence and access to devices. In the post-pandemic context, digital learning is no longer considered an emergency alternative but a permanent part of modern education systems. Bond (2021) highlights that integrating technology into instruction must be conducted systematically to enhance learning quality. Teachers and students must also improve their digital literacy to fully benefit from learning platforms Hodges et al. (2020). Therefore, curriculum structures should be redesigned to incorporate digital learning components that ensure effective implementation.

Challenges and Opportunities in Curriculum Transformation

Curriculum transformation toward digital learning involves several challenges. Panigrahi et al. (2021) identify common issues such as digital inequality, limited technological skills among educators, and the varying readiness of schools. Despite these challenges, the digital era also offers significant opportunities for curriculum innovation, including the use of digital learning resources, project-based learning supported by technology, and personalized learning experiences. Bond (2021) stresses that responsive and dynamic curriculum design is required to maximize the potential of technology-enhanced learning. When challenges are addressed effectively, curriculum transformation can improve learning quality and expand students' access to meaningful learning experiences.

The ADDIE Model in Curriculum Development

The ADDIE model is a widely used instructional design framework for developing curricula, learning materials, and instructional programs. The model consists of five stages: Analyze, Design, Develop, Implement, and Evaluate. In the Analyze stage, learning needs and learner characteristics are examined. The Design stage involves developing learning objectives, instructional strategies, and learning resources. The Develop stage produces curriculum materials or prototypes ready for testing. The Implement stage applies the developed curriculum in actual or simulated learning contexts. Finally, the Evaluate stage assesses the effectiveness and quality of the curriculum product

(Branch, 2009). Due to its structured and flexible nature, ADDIE is highly suitable for curriculum adaptation in the post-pandemic digital learning era. This model allows schools to build responsive and technology-oriented curricula while ensuring continuous improvement through systematic evaluation.

METHODS

This study employed a Research and Development (R&D) approach to develop a conceptual curriculum adaptation model for the post-pandemic digital learning era. The development process followed the ADDIE instructional design framework, consisting of the Analyze, Design, Develop, Implement, and Evaluate phases (Branch, 2009). The ADDIE model was selected because it provides a systematic structure for curriculum development and allows flexible adjustments at each stage.

The research procedure began with the Analyze phase, which involved identifying key issues in post-pandemic learning, reviewing curriculum needs, and examining challenges reported in previous studies on digital learning. Literature from national and international journals was reviewed to identify core problems such as digital literacy gaps, technology integration requirements, and curriculum misalignment in digital learning environments (Bond, 2021; Dhawan, 2020; Firman & Rahayu, 2020). This phase produced a list of curriculum components requiring adaptation.

The Design phase focused on outlining the structure of the adapted curriculum model. This included formulating learning objectives suitable for digital learning environments, selecting essential competencies, planning instructional strategies, and determining assessment approaches supported by digital tools. All design decisions were aligned with the findings from the analysis phase and supported by curriculum development literature.

During the Develop phase, a draft version of the curriculum adaptation model was created. The draft incorporated elements such as digital literacy development, blended learning strategies, learner-centered activities, and technology-based assessment components. The model was refined through expert judgment using qualitative reviews from curriculum development lecturers. Feedback obtained from these experts was used to revise and strengthen the structure and internal coherence of the model.

The Implement phase in this study was conceptual due to its academic scope. Implementation was conducted through hypothetical scenario testing, where the adapted model was applied to simulated classroom conditions. This step provided insights into the practicality and potential application of the model in real educational settings.

The final phase, Evaluate, involved assessing the feasibility and clarity of the curriculum adaptation model. Evaluation focused on internal validation, including the consistency among curriculum components, alignment with digital learning principles, and responsiveness to post-pandemic educational needs. Revisions were made based on evaluation findings to improve the clarity, coherence, and usability of the model.

The data in this study were analyzed qualitatively using content analysis techniques. Literature findings, expert feedback, and model components were synthesized to produce a comprehensive ADDIE-based curriculum adaptation framework. Overall, the procedure ensured

that each ADDIE phase contributed to the development of a coherent, systematic, and applicable model.

RESULTS AND DISCUSSION

Output of the Analyze Phase

The Analyze phase generated a list of curriculum issues that emerged in the post-pandemic learning context. Key problems identified include limited digital literacy among students and teachers, insufficient technology integration in instructional practices, and misalignment between existing curriculum structures and digital learning needs. The analysis also revealed a need for flexible instructional strategies and technology-based assessments to support blended learning environments.

These findings reinforce previous studies, which highlight similar challenges in digital learning environments. Dhawan (2020) and Bond (2021) reported that digital readiness and access are central factors influencing the effectiveness of online learning. The alignment between the present study and previous literature indicates that curriculum adaptation must address foundational issues in digital competence and instructional design. This strengthens the argument that curriculum revision is essential for sustaining learning continuity in the post-pandemic era. However, this study advances prior research by organizing curriculum problems more systematically through the ADDIE analytical process, offering clearer groundwork for subsequent development stages.

Output of the Design Phase

The Design phase produced a structured outline for the adapted curriculum model. The design included revised learning objectives, updated essential competencies for digital literacy, blended learning strategies, and technology-enhanced assessment formats. These elements were organized into a coherent curriculum structure that supports synchronous and asynchronous learning.

Compared with existing research, the design outcomes align with recommendations from Panigrahi et al. (2021), who emphasize the importance of blended learning and competency-based approaches in the digital era. While previous studies identified broad elements needed for digital curriculum transformation, this study contributes a more systematic design structure based on the ADDIE framework. The curriculum components developed here offer practical value because they are directly linked to needs identified in the Analyze phase, creating consistency between problem identification and curriculum planning.

Output of the Develop Phase

In the Develop phase, a draft model of the adapted curriculum was created. The model consisted of four main components: (1) digital literacy enhancement, (2) learner-centered instructional strategies, (3) blended learning pathways, and (4) technology-based assessment tools. This draft was reviewed by curriculum development experts, whose qualitative feedback was incorporated to refine the model's structure and internal coherence.

Expert feedback strengthened the validity of the developed model and ensured that each component aligned with principles of curriculum design in digital environments. The refinement process also aligns with literature emphasizing the importance of expert review in R&D-based

curriculum development (Branch, 2009). Unlike earlier studies that focus primarily on identifying issues, this study advances the field by producing a conceptual model that synthesizes instructional theory, digital learning needs, and expert validation. Thus, the Develop phase findings demonstrate a more mature and applicable output compared with previous conceptual studies.

Conceptual Implementation Scenario

Because this study is conceptual, the Implement phase used hypothetical classroom scenarios to test the practicality of the adapted curriculum. The implementation simulation illustrated how learning objectives, instructional activities, and assessments would function in a blended digital environment. The model showed strong potential for application in real settings, particularly in enhancing engagement and improving digital learning readiness.

The conceptual implementation aligns with recommendations from Bond (2021), who emphasizes the need for practical models that can transition smoothly into digital or hybrid learning environments. While previous studies often lacked concrete application models, this study contributes a structured simulation that demonstrates how curriculum components can be integrated into digital learning practices. This provides additional novelty compared with studies that remain purely descriptive.

Evaluation Findings

The Evaluate phase focused on internal validation of the model. The assessment demonstrated that the curriculum structure is consistent, relevant, and responsive to the needs of post-pandemic learning. Revisions were made to clarify learning outcomes, strengthen assessment criteria, and integrate more explicit digital literacy indicators.

Evaluation results support the idea that systematic instructional design leads to stronger curriculum coherence. This finding aligns with previous research stressing the importance of continuous evaluation in curriculum development (Branch, 2009). The improvements made during this phase distinguish the model from earlier frameworks that did not incorporate structured validation steps. The final model offers clearer guidance for educators seeking to adapt curricula to digital learning contexts.

Tabel 1. Curriculum Components Identified During the Analyze Phase

No	Curriculum Component	Description
1	Digital Literacy	Limited competence in using digital tools
2	Instructional Design	Need for flexible digital learning strategies
3	Technology-Based Assessment	Lack of tech-supported evaluation methods
4	Curriculum Alignment	Misalignment between curriculum & digital needs

Source: Researcher's synthesis, 2024

This table summarizes the curriculum problems identified through literature analysis and supports the rationale for curriculum adaptation.

Discussion

The development of the curriculum adaptation model through the ADDIE framework resulted in several key insights that contribute to post-pandemic curriculum innovation. The

analysis and synthesis from each ADDIE phase provide a meaningful interpretation that aligns with, supports, and extends the findings of previous research.

The first major insight relates to the curriculum gaps identified during the Analyze phase, which include limited digital literacy, insufficient technology integration, and the misalignment between existing curricula and digital learning needs. These challenges are consistent with the observations reported by Dhawan (2020) and Bond (2021), who highlight digital readiness as a determining factor for effective online learning. However, the present study strengthens these findings by organizing the challenges into structured curriculum components, offering a more systematic basis for curriculum redesign. This structured problem mapping represents an advancement over earlier descriptive research.

The design-related findings also show strong alignment with previous studies suggesting the importance of blended learning and student-centered approaches in digital environments (Panigrahi et al., 2021). While earlier research often discusses these needs at a conceptual level, the current study extends this understanding by translating them into specific curriculum elements such as digital literacy competencies, flexible learning pathways, and technology-enhanced assessment strategies. This contributes practical clarity to the literature by demonstrating how design principles can be operationalized through the ADDIE framework.

Expert feedback incorporated during the Develop phase further validates the curriculum model and highlights the significance of iterative refinement in curriculum development. Previous research acknowledges the need for expert judgment in R&D-based educational projects, yet rarely details how feedback modifies the design. In contrast, this study demonstrates how expert review enhanced the internal coherence and applicability of the model, thus providing a more robust development process.

Another key contribution emerges from the conceptual implementation scenario. While prior studies typically remain theoretical in describing curriculum transformation, this research offers a simulated application that illustrates how the curriculum model can operate within a blended learning environment. This practical visualization provides educators with a clearer understanding of implementation feasibility and strengthens the practical relevance of the model. This step contributes additional novelty by bridging the gap between theoretical curriculum design and classroom-level application.

Lastly, the evaluation phase demonstrates that systematic assessment is crucial to ensuring the alignment and usability of curriculum components. This finding supports the instructional design perspective proposed by Branch (2009), who emphasizes continuous evaluation for model improvement. However, the present study extends this notion by applying evaluation criteria specifically tailored to post-pandemic digital learning demands, such as digital literacy indicators and blended learning coherence. This enhances the specificity and contextual relevance of the evaluation process.

Overall, the discussion highlights that this research not only confirms previous findings but also contributes new insights through the systematic application of the ADDIE model. The integration of analysis, expert judgment, conceptual implementation, and targeted evaluation demonstrates the model's potential to guide curriculum adaptation in the post-pandemic digital

learning era. These contributions represent meaningful additions to the literature and offer practical guidance for future curriculum development initiatives.

CONCLUSION

The purpose of this study was to develop a conceptual curriculum adaptation model for the post-pandemic digital learning era using the ADDIE instructional design framework. The findings demonstrate that the curriculum adaptation process must address key challenges related to digital literacy, technology integration, and instructional flexibility. Through the systematic application of the Analyze, Design, Develop, Implement, and Evaluate phases, this study produced a coherent framework that aligns curriculum components with the demands of digital learning environments.

The results suggest that curriculum adaptation requires not only the incorporation of digital tools but also the restructuring of learning objectives, instructional strategies, and assessment practices to support blended and technology-enhanced learning. The involvement of expert review and conceptual implementation further strengthens the feasibility and practical relevance of the proposed model. Overall, this study contributes a structured and adaptable model that can guide educators, curriculum designers, and institutions in modifying curriculum elements for post-pandemic learning needs.

Recommendations

Future research may extend this study by conducting empirical implementation and testing the model in real classroom settings to measure its effectiveness. Educational institutions are also encouraged to improve teacher digital competence and provide adequa te technological infrastructure to support the model's application. Additionally, policymakers should consider integrating digital literacy and blended learning principles into curriculum standards to ensure long-term sustainability in the digital learning era.

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