

Instructional Design of Online Training for ECE Educators: A Project-Based and Andragogical Approach

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Abstract: Enhancing Early Childhood Education (ECE) educators' digital media creation skills is crucial for innovative teaching, yet effective, practical professional development often remains a significant challenge. This article presents a detailed instructional design for an online training program, developed as an outcome of a community service initiative with a private ECE institution in Indonesia. This initiative involved its eleven educators, who possessed varied initial digital competencies, and aimed to address their specific needs. The design process employed a systematic needs analysis, integrating project-based learning and established andragogical principles to ensure relevance and practical application for adult learners. The resulting online program features a three-tiered competency structure (Beginner, Intermediate, Advanced), where each level culminates in authentic media creation projects, fostering skills through learner-centered, reflective, and collaborative activities. This theoretically-grounded instructional design offers an adaptable model anticipated to significantly improve ECE educators' digital competencies and creative capacities, thereby enriching children's learning experiences.

Keywords: instructional design, online professional development, early childhood education (ece), project-based learning, andragogy

1. Introduction

The global educational landscape, particularly within Early Childhood Education (ECE), is currently navigating a period of profound transformation, largely propelled by the pervasive influence of digital technologies and the evolving demands for 21st-century competencies in young learners. This digital shift underscores the critical importance of high-quality early learning experiences, which are foundational for children's lifelong development and overall well-being (Bayly et al., 2024). Consequently, ECE systems worldwide are increasingly recognizing the need to adapt and innovate, moving beyond traditional paradigms to embrace pedagogical approaches that effectively integrate digital tools. This adaptation, however, hinges significantly on the digital literacy and preparedness of ECE educators (Farisia et al., 2024), who are pivotal in mediating these new learning environments. The emergence of advanced technologies, including generative artificial intelligence, further accentuates the dynamic nature of this transformation and the continuous need for educators to evolve their practice (Nyaaba & Zhai, 2024).

The strategic incorporation of digital technology into ECE settings offers manifold benefits for enhancing the quality of teaching and learning, making education more interactive, accessible, and engaging for young children. Digital tools and resources can create rich, multimodal learning experiences that cater to diverse learning styles and support various developmental domains, from cognitive and linguistic to socio-emotional growth (Darmawan et al., 2024; Farisia et al., 2024). For instance, digital storytelling, as an application of technology, provides children with unique opportunities to deepen their understanding and engagement with content (Leung et al., 2024). This move towards technology-integrated pedagogy signifies a crucial evolution in educational practice, demanding that ECE professionals are not only consumers but also adept creators and facilitators of digital learning experiences, ultimately aiming to improve the quality of interactions within the learning environment (Pölzl-Stefanec, Barta, & Walter-Laager, 2024).

While technology offers powerful tools, ECE educators remain the indispensable agents in leveraging these resources to foster meaningful learning and development. The effectiveness of any technological integration is profoundly shaped by educators' knowledge, beliefs, and practices (Bayly et al., 2024; Farisia et al., 2024). Educators are tasked with the critical responsibility of selecting, evaluating, adapting, and creating digital content that is pedagogically sound and developmentally

appropriate for young learners (Ha et al., 2024). However, many ECE educators report feeling unprepared for this role, often citing a lack of specific training, insecurity with technology, and limited access to ongoing professional development (Farisia et al., 2024; Leung et al., 2024). This challenge is particularly acute in the Indonesian context, where literature reviews show that gaps in pedagogical competence often arise because many educators lack a relevant educational background and have not received sufficient, continuous training (Melati et al., 2024). This issue is further compounded in remote regions, where limited access to resources and training opportunities hinders the practical implementation of modern, exploratory teaching methods (Sulistiyowati et al., 2025). This highlights an urgent need for high-quality professional development programs that move beyond generic feature lists and are grounded in robust educational theories (Asterhan & Lefstein, 2024).

Digital competency for ECE educators, therefore, extends far beyond basic operational skills; it encompasses a nuanced understanding of how to pedagogically integrate technology and, critically, the ability to *create* bespoke digital learning media. Contemporary analysis suggests this new set of competencies for the digital era includes not only being proficient with technology but also the ability to creatively leverage tools like search engines and artificial intelligence, to collaborate in digital spaces, and to innovate in pedagogical design (Yusuf et al., 2024). The capacity to design and develop original digital content allows educators to tailor learning experiences precisely to their students' unique needs, cultural backgrounds, and specific curriculum objectives, a skill increasingly emphasized in contemporary ECE (Farisia et al., 2024; Kurniawati et al., 2024). Professional development initiatives that focus on such creative capacities, for instance, through activities like educational video generation, have been shown to significantly enhance various teaching competencies (García-Sampedro et al., 2024). This creative empowerment enables educators to move from being passive consumers of technology to active designers of engaging and effective learning environments.

User-friendly design platforms, such as Canva Pro, present a significant opportunity for ECE educators to develop these crucial media creation skills without requiring extensive prior graphic design expertise. Such platforms offer intuitive interfaces, vast libraries of templates and design elements, and collaborative features, thereby democratizing the creation of professional-quality visual learning materials relevant for ECE contexts (Farisia et al., 2024; García-Sampedro et al., 2024). This approach is consistent with findings from other ECE contexts in Indonesia, where educators are already leveraging platforms like Canva to enhance children's creativity and develop innovative learning materials (Imanah & Zulfahmi, 2024). The accessibility and functionality of these tools can empower educators to produce a wide array of innovative media, from interactive presentations and digital storybooks to customized worksheets and informational posters. The selection of such a platform as the core tool for a professional development program is thus a strategic choice, aiming to equip educators with practical and immediately applicable skills for enriching their teaching repertoire. This approach aligns with the need for low-resource, evidence-based PD programs that can be effectively implemented (Mazhar & Sylva, 2025).

This article originates from a community service initiative undertaken in collaboration with a private Early Childhood Education institution in Indonesia, aiming to address the identified digital competency needs of its eleven educators. These educators presented with a diverse range of initial digital skills and experiences, highlighting the necessity for a flexible and adaptable training solution. The community service project was motivated by an understanding of the local challenges faced by these educators and a commitment to providing a practical, impactful intervention. The primary output of this engagement, and the focus of this paper, is the detailed instructional design of an online training program centered on the use of Canva Pro for creating educational media, similar to initiatives focused on improving digital literacy through community engagement (Farisia et al., 2024).

This initiative serves as a direct implementation of the *Pengabdian kepada Masyarakat* (Community Service) pillar, a core component of the Indonesian *Tridharma Perguruan Tinggi* (Three Pillars of Higher Education). It represents a strategic effort by Universitas Terbuka, as a higher education institution specializing in open and distance learning, to downstream its academic expertise in instructional design and educational technology. The project creates a symbiotic partnership,

transferring practical, research-informed knowledge to address the specific, real-world digital competency gaps identified within the community partner, thereby providing a tangible solution to enhance the professional capacity of local ECE educators.

Through structured discussions and needs analysis conducted with the partner institution, several specific challenges faced by its ECE educators in digital media development were identified. These included limited time for material creation, a perceived lack of technical skills with modern design software, difficulties in integrating technology effectively into their play-based pedagogy, and insufficient access to tailored professional development (Farisia et al., 2024; Pölzl-Stefanec & Feierabend, 2025). This mirrors challenges observed in other Indonesian regions, where studies have found that even among generally competent ECE educators, the specific area of technology and communication utilization often remains a key weakness requiring targeted improvement (Putri et al., 2024). Such obstacles are not uncommon in the ECE sector and can significantly hinder educators' ability to produce engaging, high-quality learning resources (Bayly et al., 2024; Leung et al., 2024). These findings underscored the critical need for a targeted training program that was not only skill-focused but also addressed educators' confidence and practical application within their specific teaching context, moving beyond traditional training methods that often fail to meet adult learner needs (Bahrani, 2024).

The instructional design of the proposed online training program is deliberately anchored in two robust pedagogical frameworks: project-based learning (PBL) and andragogy. The rationale for PBL stems from its proven efficacy in fostering active, inquiry-based learning and enabling participants to develop skills through the creation of authentic, tangible products relevant to their professional practice (García-Sampedro et al., 2024; Pan et al., 2024; Mohammadi, 2024). Simultaneously, the application of andragogical principles ensures that the training respects ECE educators as adult learners, leveraging their existing experiences, addressing their immediate professional needs, fostering self-direction, and orienting learning towards practical problem-solving (Bahrani, 2024; Darmawan et al., 2024; Rodrigo et al., 2024; Sánchez-Doménech & Cabeza-Rodríguez, 2024; Witcher & Sasso, 2024). This combination is deemed particularly suitable for an online environment, offering flexibility while promoting deep learning and practical skill acquisition (Kohnke et al., 2024; Pölzl-Stefanec, Barta, & Walter-Laager, 2024).

Therefore, the primary purpose of this article is to present and meticulously describe the instructional design of this specialized online training program focused on Canva Pro for ECE educators. The specific objectives are to detail the program's three-tiered competency structure, elucidate how project-based learning and andragogical principles are woven into its modules and activities, describe the planned online media and strategies, and outline the integrated assessment methods. By doing so, this article aims to offer a replicable and adaptable model for professional development, responding to the call for more theoretically grounded and effective training initiatives in the field of early childhood education (Asterhan & Lefstein, 2024; Elek et al., 2024). This detailed exposition of the design is intended to provide a clear blueprint for other practitioners and researchers.

The significance of this work lies in its potential to contribute a well-documented, theoretically-informed instructional design to the ECE professional development literature, a field often described as undertheorized (Elek et al., 2024) and in need of robust, evidence-informed models (Asterhan & Lefstein, 2024; Bayly et al., 2024). By addressing the specific need for digital media creation skills among ECE educators through an accessible online format, this training design offers a practical pathway to enhance teaching quality and, by extension, enrich children's learning experiences. This article will proceed by detailing the Method used in the design of the training program, followed by the Results and Discussion which will elaborate on the specifics of the training design and its pedagogical underpinnings, and will conclude with a summary of contributions and recommendations for future directions. This structure aims to provide a comprehensive understanding of the training design and its potential impact.

2. METHOD

The community service activity detailed in this article was implemented through a systematic instructional design process aimed at achieving the primary objective of developing a comprehensive and effective online training program for Early Childhood Education (ECE) educators at a private institution in Indonesia. The execution of this community service was structured into several distinct phases. The initial phase involved establishing the partnership and conducting an in-depth needs analysis through structured discussions with the eleven participating educators and institutional management to precisely map their existing competencies and challenges. This was followed by the collaborative design and development phase, where the university team formulated the instructional blueprint, incorporating feedback from the partner institution to ensure relevance and practicality. The culmination of the project was the finalization and handover of the primary output: the complete instructional design for the online training program, which is the focus of this article. The final phase involved preparing for the subsequent implementation and planning the framework for a comprehensive evaluation of the program's future impact.

This process commenced with an in-depth needs analysis, conducted via structured discussions with the eleven participating educators and institutional management, to precisely identify their existing digital competencies, challenges in media creation, and specific professional development aspirations. Following this analysis, clear instructional objectives and a multi-level competency framework were meticulously formulated, guiding the subsequent development of all training content, the selection of appropriate online delivery strategies, and the design of project-based assessments. The core methodological approach was the deliberate integration of project-based learning, to ensure practical skill application, and andragogical principles, to cater to the learning characteristics and motivations of adult educators, thereby shaping a relevant and engaging learning experience.

The primary outcome of this community service engagement is the fully developed instructional design for the online training program, the success of which is measured through both qualitative and descriptive means. Qualitatively, the relevance, coherence, and potential effectiveness of the design were evaluated through feedback solicited from educational design experts and the management of the partner ECE institution, serving as critical tools for assessing its suitability and potential acceptance. Descriptively, the tangible output—the detailed training curriculum itself, encompassing syllabi, module content, project specifications, and assessment plans—provides a clear measure of the design's completeness and readiness for implementation. The level of achievement for this design-focused community service is determined by the successful creation of this robust training model and its perceived potential to foster positive changes in educators' attitudes towards technology and their practical digital media creation skills. It is anticipated that these enhancements in educator capacity will, in turn, contribute positively to the socio-cultural learning environment for children; a comprehensive evaluation of these attitudinal and broader socio-cultural impacts on the target community is planned following the full implementation of the training program.

3. RESULTS & DISCUSSION

This section delineates the core output of the community service initiative: the comprehensive instructional design for an online training program tailored to enhance the digital media creation skills of Early Childhood Education (ECE) educators. Following the methodology outlined previously, which emphasized a needs-driven, project-based, and andragogically-informed approach, the subsequent discussion will present the specific structural and pedagogical components of this training program. The presentation will encompass the tiered competency framework, the nature of the culminating projects for each level, and a detailed mapping of sub-competencies to their respective online learning media, instructional strategies, and assessment methods. Furthermore, this section will critically discuss the integration of project-based learning and andragogical principles within the design, analyze its anticipated benefits and potential implementation challenges for ECE educators, and explore the broader implications of this training model for the professional development landscape in early

childhood education. The aim is to provide a transparent and thorough exposition of the training design, thereby offering a practical and theoretically grounded framework for future initiatives.

3.1 The Detailed Instructional Design of the Online Training Program

Following the outlined methodology, this section presents the detailed instructional design of the online training program developed to enhance the digital media creation skills of Early Childhood Education (ECE) educators. The program is structured to systematically build competencies using a specific user-friendly graphic design platform, taking into account the varied initial digital literacy levels of the participating ECE educators from the private Indonesian institution (Farisia et al., 2024 ; Bayly et al., 2024). The overall architecture of the training is tiered, progressing through Beginner, Intermediate, and Advanced levels, each designed to be completed sequentially, fostering sustained engagement and a gradual mastery of skills (Mazhar & Sylva, 2025 ; Yang, Rao, & Sun, 2024). This multi-level approach ensures that learning is scaffolded, allowing educators to build confidence and proficiency progressively.

The comprehensive structure of the training program, including the core competency, specific sub-competencies, and the culminating project name for each of the three levels, is presented in Table 1. This table serves as a roadmap for the training, illustrating the learning journey from foundational knowledge to advanced application and pedagogical integration. The design emphasizes a clear progression where the skills and knowledge acquired at each level directly prepare educators for the increasing complexity of tasks and projects in subsequent levels. Such a structured yet flexible progression is crucial for adult learners engaging in online professional development (Kohnke et al., 2024 ; Pölzl-Stefanec, Barta, & Walter-Laager, 2024).

Tabel 1. Competency Structure and Project Overview

Level	Core Competency	Sub-competencies	Project Name
Beginner	Create foundational ECE visual media using Canva Pro and core design principles.	1. Operating the Canva Pro interface and essential features relevant to creating basic visual media kits. 2. Applying visual design principles (color, typography, layout) effective for ECE learning media. 3. Designing an informative and visually engaging ECE theme poster as a core component of the media kit. 4. Developing at least two types of creative and functional children's worksheets aligned with the media kit's theme. 5. Creating a thematic flashcard set (min. 8 cards) and managing the export of the entire basic visual media kit in appropriate formats.	Designing a Basic ECE Visual Media Kit
Intermediate	Develop interactive ECE presentations and video assets using advanced Canva Pro techniques.	1. Planning a logical narrative flow and content structure for an interactive ECE learning presentation. 2. Designing visually appealing and communicative presentation slide layouts that effectively support narrative content delivery. 3. Applying basic animation techniques to graphic elements and text to enhance presentation dynamics and engagement. 4. Implementing simple interactivity features (e.g., inter-slide navigation, basic action buttons) within the presentation flow. 5. Designing various professional and thematic graphic assets (opening titles, lower thirds, closing screens) to support educational video production. 6. Managing the entire presentation and video asset design project, including technical finalization and preparation for classroom use simulation.	Developing an Interactive Presentation & Classroom Video Assets
Advanced	Design an integrated ECE media campaign with Canva Pro, including pedagogical integration.	1. Conceptualizing and structuring the narrative for a multi-page ECE e-book as a core part of a thematic campaign. 2. Designing the e-book's visual layout, integrating graphics, and ensuring readability and appeal for young children. 3. Designing an effective and concise educational infographic to convey key campaign information to parents. 4. Planning the storyboard and visual-audio asset	Designing an Integrated Thematic Learning Media Campaign

Level	Core Competency	Sub-competencies	Project Name
		requirements for short video production supporting the thematic campaign.	
		5. Producing a short video (1-2 minutes) using Canva's editing features, integrating graphic assets, animated text, and audio elements.	
		6. Formulating a comprehensive implementation plan and pedagogical integration strategy for the entire media package within the learning campaign.	
		7. Conducting a formative evaluation of the developed media package's quality and coherence, and reflecting on the creative process and its potential impact on ECE learning.	

The Beginner Level, consisting of approximately four sessions, focuses on "Create foundational ECE visual media using Canva Pro and core design principles." Sub-competencies at this stage cover an introduction to the platform's interface and essential features, understanding and applying basic visual design principles relevant to ECE, and hands-on creation of fundamental media types such as thematic posters, simple worksheets, and flashcards. The culminating project for this level is "Designing a Basic ECE Visual Media Kit," which allows educators to synthesize these initial skills into a practical set of classroom resources, addressing common challenges ECE educators face in producing engaging materials (Kurniawati et al., 2024 ; Leung et al., 2024). This foundational stage is critical for building confidence and ensuring educators are comfortable with the core functionalities of the design tool before moving to more complex tasks.

The Intermediate Level, anticipated to span approximately four to five sessions, aims to "Develop interactive ECE presentations and video assets using advanced Canva Pro techniques." This level builds directly upon the foundational skills, introducing educators to the creation of more dynamic content, such as engaging presentations with simple animations and interactivity, and designing graphic assets suitable for short educational videos. Sub-competencies include planning narrative flows, designing appealing slide layouts, applying basic animation, implementing simple interactivity, and creating video-specific graphics (García-Sampedro et al., 2024). The project, "Developing an Interactive Presentation & Classroom Video Assets," challenges educators to apply these enhanced skills to produce more sophisticated learning materials, further enriching their pedagogical toolkit.

Finally, the Advanced Level, designed for approximately five to six sessions, focuses on "Design an integrated ECE media campaign with Canva Pro, including pedagogical integration." Here, educators consolidate their comprehensive expertise by designing a cohesive package of thematic learning media, potentially including items like a simple e-book, an infographic for parents, and a short video. A crucial component of this level involves formulating a plan for the pedagogical integration of this media package into ECE learning scenarios (Pan et al., 2024). Sub-competencies address e-book conceptualization and design, infographic creation for parent communication, video production planning and execution, and the development of a comprehensive pedagogical implementation strategy, culminating in the project "Designing an Integrated Thematic Learning Media Campaign." This level emphasizes higher-order thinking, creativity, and the strategic application of digital media to achieve specific educational outcomes in ECE settings, reflecting a mature stage of professional development (Ha et al., 2024).

3.2 Elaboration of Instructional Strategies, Online Media, and Assessment Methods

The effective acquisition of digital media creation competencies by Early Childhood Education (ECE) educators within this online training program is facilitated by a carefully curated selection of instructional strategies, diverse online media, and aligned assessment methods. These elements were intentionally chosen to support the program's project-based learning (PBL) core and to adhere to andragogical principles, thereby fostering an engaging, relevant, and practical learning experience for adult professionals (Bahrani, 2024 ; Pan et al., 2024). The following subsections detail these components for each of the three progressive training levels—Beginner, Intermediate, and

Advanced—demonstrating how each sub-competency is addressed through specific learning activities and evaluative measures. This detailed mapping underscores the systematic approach taken to skill development, from foundational understanding to advanced application and pedagogical integration, all within a supportive online environment designed to cater to the needs of ECE educators (Kohnke et al., 2024 ; Pölzl-Stefanec, Barta, & Walter-Laager, 2024).

3.2.1. Beginner Level: Foundational Skills in ECE Digital Media Creation

The Beginner level is designed to build essential digital literacy and fundamental skills in using the Canva Pro platform, establishing a solid foundation for ECE educators, many of whom may have varied initial digital competencies (Farisia et al., 2024). Instructional strategies at this stage focus on guided exploration, direct instruction through clear demonstrations, and immediate application to build confidence and familiarity. Online media include concise video tutorials (screencasts) for interface navigation and tool usage, downloadable PDF quick reference guides, and a curated selection of ECE-specific Canva templates that participants can deconstruct and adapt (Pölzl-Stefanec & Feierabend, 2025). Assessments are primarily formative, comprising interactive interface quizzes, submission of small design tasks for feedback, and peer discussions on applying basic ECE design principles, all culminating in the "Designing a Basic ECE Visual Media Kit" project where initial skills are synthesized. This scaffolded approach ensures that adult learners feel supported as they acquire new technical skills and understand their immediate relevance to their teaching practice (Witcher & Sasso, 2024).

Tabel 2. Beginner Level - Mapping of Sub-competencies to Online Media/Strategies and Assessment Methods

Sub-competency	Media/Strategy	Assessment
1.1 Operating the Canva Pro interface and essential features relevant to creating basic visual media kits.	- Video Tutorials (Screencasts) - Interactive Interface Tour/Simulation - PDF Quick Start Guide - Guided Exploration Tasks	- Interactive Interface Quiz (e.g., hotspots, matching) - Task Completion (Screen Recording/Annotated Screenshots of basic operations)
1.2 Applying visual design principles (color, typography, layout) effective for ECE learning media.	- Micro-learning Videos (Principles with ECE examples) - Infographics (Design Principles Summary) - Curated ECE Media Gallery (Good/Bad Examples) - Design Principles Checklist - Forum for Design Critique	- Design Analysis Submission (Critique of provided media) - Peer Feedback on simple design tasks (Checklist-based) - Rubric evaluation of design principles in Poster Project
1.3 Designing an informative and visually engaging ECE theme poster as a core component of the media kit.	- Step-by-Step Video Tutorial (Poster Creation) - ECE-focused Canva Poster Templates - Examples of ECE Posters - Scaffolded Design Activities - Peer Feedback Forum	- Draft Poster Submission (Peer/Instructor Feedback) - Final Poster Submission (Rubric-Assessed: clarity, ECE relevance, visual appeal, technical execution)
1.4 Developing at least two types of creative and functional children's worksheets aligned with the media kit's theme.	- Video Tutorials (Worksheet Design in Canva) - Canva Worksheet Templates (various types) - Online Gallery of ECE Worksheet Examples - Collaborative Brainstorming (Online Whiteboard)	- Draft Worksheet Submission (one type, for Peer/Instructor Feedback) - Final Worksheets Submission (two types, Rubric-Assessed: creativity, functionality, ECE alignment)
1.5 Creating a thematic flashcard set (min. 8 cards) and managing the export of the entire basic visual media kit in appropriate formats.	- Video Tutorial (Efficient Flashcard Creation) - Screencast (Canva Export Options & Best Uses) - Canva Flashcard Templates - Tip Sheet (Print/Digital Use)	- Sample Flashcard Designs Submission - Short Quiz (Export Formats for ECE uses) - Final "Basic ECE Visual Media Kit" Project Submission (Completeness, Correct Formats, Design Consistency)

3.2.2. Intermediate Level: Crafting Interactive Presentations and Video Assets

Building upon the foundational skills acquired, the Intermediate level aims to enhance ECE educators' capabilities by introducing more advanced Canva Pro techniques for creating dynamic and interactive learning materials. Instructional strategies emphasize greater autonomy in design

exploration, problem-solving through "design makeover" challenges, and peer collaboration in planning narrative structures, such as through storyboard reviews (García-Sampedro et al., 2024). Online media include advanced tutorials on Canva's layout, animation, and simple interactivity features, alongside curated ECE-specific presentation templates and examples of well-executed video assets to inspire and guide learners (Mohammadi, 2023 regarding online modalities). Assessment at this stage involves the submission of sample interactive presentation segments and draft video assets for formative feedback, culminating in the "Developing an Interactive Presentation & Classroom Video Assets" project. This project requires educators to synthesize their skills in structuring narratives, designing communicative slides, applying animations, implementing basic interactivity, and creating professional video graphics, all of which are assessed through a comprehensive rubric focusing on both technical execution and pedagogical effectiveness (Bayly et al., 2024 for elements of KSDI).

Tabel 3. Intermediate Level - Mapping of Sub-competencies to Online Media/Strategies and Assessment Methods

Sub-competency	Media/Strategy	Assessment
2.1 Planning a logical narrative flow and content structure for an interactive ECE learning presentation.	- Video Lecture (ECE Storytelling & Presentation Structure) - Digital Storyboard Templates - Exemplar ECE Presentation Outlines/Storyboards - Guided Storyboard Creation Activity	- Storyboard/Outline Submission (Peer/Instructor Feedback) - Rubric Assessment (Narrative & Structure in Final Presentation)
2.2 Designing visually appealing and communicative presentation slide layouts that effectively support narrative content delivery.	- Advanced Canva Layout Tutorials (Video) - ECE-focused Canva Presentation Templates - "Slide Makeover" Challenge - Discussion Forum (Slide Design Critique)	- Sample Slide Designs Submission (Peer/Instructor Feedback) - Rubric Assessment (Visual Design & Communication in Final Presentation)
2.3 Applying basic animation techniques to graphic elements and text to enhance presentation dynamics and engagement.	- Video Tutorials (Canva Animation Features) - Examples of ECE-appropriate Animations - Animation Experimentation Tasks (Sandbox)	- Screen Recording (Demonstrating appropriate animation use on a sample slide) - Rubric Assessment (Effectiveness of Animation in Final Presentation)
2.4 Implementing simple interactivity features (e.g., inter-slide navigation, basic action buttons) within the presentation flow.	- Video Tutorial (Canva Interactivity: Linking Slides, Buttons) - Showcase of Simple Interactive ECE Presentations - Guided Practice (e.g., creating a simple choice-based path)	- Interactive Presentation Segment Submission (Demonstrating a working feature) - Rubric Assessment (Functionality & intuitiveness of Interactivity in Final Presentation)
2.5 Designing various professional and thematic graphic assets (opening titles, lower thirds, closing screens) to support educational video production.	- Video Tutorials (Designing Video Assets in Canva) - Canva Video Asset Templates (ECE Thematic) - Gallery of ECE Video Branding Examples	- Draft Video Asset Submission (e.g., opening title) for Peer/Instructor Feedback - Final Video Asset Set Submission (Rubric-Assessed: design, consistency, suitability)
2.6 Managing the entire presentation and video asset design project, including technical finalization and preparation for classroom use simulation.	- Project Finalization Checklist (Technical & Design) - Video (Organizing Canva Projects/Folders) - Guide (Online Presentation/Sharing Techniques)	- Project Management Self-Assessment Checklist - Submission of all technically sound final project components - Brief Presentation Simulation (Video/Live walk-through of interactive presentation)

3.2.3. Advanced Level: Integrating Media into Comprehensive ECE Learning Campaigns

The Advanced level represents the culmination of the training program, where ECE educators consolidate their comprehensive Canva Pro expertise to design and plan the pedagogical integration of an entire thematic learning media package. Instructional strategies at this level promote higher-order thinking, sophisticated project management, creativity in synthesizing multiple media types (e-

books, infographics, short videos), and a deep focus on the pedagogical "why" and "how" of media use in ECE campaigns (Pan et al., 2024). Online media include advanced tutorials on multi-page document design (e-books), infographic creation for parent communication, Canva's video editing functionalities, and resources on developing pedagogical integration plans (Leung et al., 2024 on TPACK). The assessment framework for this level emphasizes both the quality of the produced media and the coherence of the integration strategy, primarily through the "Designing an Integrated Thematic Learning Media Campaign" project. This includes formative feedback on e-book structures, infographic drafts, and video storyboards, leading to summative evaluations of the complete media package and the pedagogical plan, alongside a significant self-reflection component on the creative process and its anticipated impact (Ha et al., 2024 ; Mazhar & Sylva, 2025).

Tabel 4. Advanced Level - Mapping of Sub-competencies to Online Media/Strategies and Assessment Methods

Sub-competency	Media/Strategy	Assessment
3.1 Conceptualizing and structuring the narrative for a multi-page ECE e-book as a core part of a thematic campaign.	- Video Lecture (ECE E-book Narrative & Structure) - E-book Planning & Outline Templates (Digital) - Exemplar ECE E-books (Canva/other) - Collaborative Concept Mapping (Online Tool)	- E-book Concept & Detailed Outline Submission (Peer/Instructor Review) - Rubric Assessment (Narrative Structure in Final E-book Project)
3.2 Designing the e-book's visual layout, integrating graphics, and ensuring readability and appeal for young children.	- Advanced Canva Tutorials (Multi-page Document Layout) - ECE E-book Design Templates (Canva) - Style Guide (ECE Fonts, Illustrations) - Peer Design Critique Sessions	- Sample E-book Page Spreads Submission (Peer/Instructor Feedback) - Rubric Assessment (Visual Design, Layout, Readability of Final E-book)
3.3 Designing an effective and concise educational infographic to convey key campaign information to parents.	- Video Tutorial (Infographic Design for Parent Communication) - Canva Infographic Templates (Parent-focused) - Examples of effective ECE Parent Infographics - Guided Infographic Drafting	- Draft Infographic Submission (Peer/Instructor Feedback on clarity & design) - Final Infographic Submission (Rubric-Assessed: effectiveness for parents)
3.4 Planning the storyboard and visual-audio asset requirements for short video production supporting the thematic campaign.	- Video Lecture (Planning Short ECE Videos) - Detailed Video Storyboard Templates (Visual, Audio, Text cues) - Resource List (Royalty-free ECE music/sounds) - Storyboard Pitch & Feedback Session	- Detailed Video Storyboard & Asset List Submission (Peer/Instructor Review) - Rubric Assessment (Storyboard Feasibility & Completeness in Final Project)
3.5 Producing a short video (1-2 minutes) using Canva's editing features, integrating graphic assets, animated text, and audio elements.	- Advanced Canva Video Editing Tutorials (Timeline, Audio, Animation) - Showcase of ECE Videos made with Canva - Online Q&A/Troubleshooting Forum (Video Editing)	- Draft Video Segment (e.g., 30 seconds) Submission (Peer/Instructor Feedback) - Final Video Submission (Rubric-Assessed: technical quality, creativity, ECE appropriateness)
3.6 Formulating a comprehensive implementation plan and pedagogical integration strategy for the entire media package within the learning campaign.	- Pedagogical Integration Plan Template - Video Lecture (Aligning Media with ECE Curriculum & Pedagogy) - Case Studies (Successful ECE Media Integration) - Collaborative Plan Development	- Draft Implementation Plan Submission (Instructor Feedback) - Final Pedagogical Integration Plan Submission (Rubric-Assessed: clarity, coherence, practicality)
3.7 Conducting a formative evaluation of the developed media package's quality and coherence, and reflecting on the creative process and its potential impact on ECE learning.	- Self & Peer Evaluation Rubrics/Checklists - Guided Reflection Prompts (Written/Video Journal) - Virtual Project Showcase/Gallery Walk	- Active Participation in Peer Evaluation of Projects - Final Self-Reflection Submission (Written or Video) - Capstone Project ("Media Campaign") Presentation

3.3. The Central Role and Implementation of Project-Based Learning (PBL)

Project-Based Learning (PBL) serves as a cornerstone of the instructional design for this online training program, chosen for its efficacy in fostering active knowledge construction and practical skill application among adult learners, particularly in a professional development context (Pan et al., 2024 ; Mohammadi, 2023). Instead of focusing solely on discrete tool-specific tutorials, the training situates learning within the context of creating authentic Early Childhood Education (ECE) digital media projects, thereby making the acquisition of Canva Pro skills immediately relevant and purposeful for the participating educators (García-Sampedro et al., 2024). This approach encourages educators to move beyond passive reception of information, engaging them as active creators and problem-solvers as they work towards tangible outputs designed for their own classrooms. The PBL framework is intended to empower these ECE educators, transforming them into confident producers of innovative teaching materials (Kurniawati et al., 2024).

The three culminating projects—"Designing a Basic ECE Visual Media Kit" (Beginner), "Developing an Interactive Presentation & Classroom Video Assets" (Intermediate), and "Designing an Integrated Thematic Learning Media Campaign" (Advanced)—are central to the learning experience at each respective level. The sub-competencies detailed in Table 1 are carefully sequenced and scaffolded to incrementally build the knowledge and technical skills required for the successful completion of these projects. For instance, educators at the Beginner level first master basic Canva Pro operations and ECE design principles before applying them to create posters, worksheets, and flashcards for their kit. Similarly, the Intermediate level project requires the integration of skills in narrative planning, slide design, animation, and video asset creation, all of which are taught progressively through dedicated sub-competencies. This structured scaffolding is essential for managing cognitive load and building learner confidence, especially in an online environment where educators are navigating new digital tools and creative processes (Leung et al., 2024). The Advanced level project then demands a synthesis of all previously acquired skills, pushing educators to engage in higher-order thinking as they plan and execute a multifaceted media campaign with pedagogical considerations (Pan et al., 2024).

The adoption of PBL is anticipated to yield numerous benefits for the ECE educators participating in this online training, aligning well with andragogical principles for adult learning (Bahrani, 2024 ; Darmawan et al., 2024). Primarily, PBL ensures that learning is highly contextualized and directly applicable, as educators develop media they can use in their ECE settings, which significantly enhances motivation and engagement (Rodrigo et al., 2024). This hands-on approach promotes deeper learning and superior skill retention compared to more passive instructional methods (Mohammadi, 2023). Beyond proficiency with the design platform, the project-based tasks are also designed to cultivate essential 21st-century skills such as critical thinking, creative problem-solving, planning, and project management (Pan et al., 2024). Furthermore, if elements of peer feedback and collaborative brainstorming are incorporated, as suggested in the online strategies (Farisia et al., 2024), PBL can also foster valuable communication and teamwork competencies (García-Sampedro et al., 2024).

3.4. Application of Andragogical Principles Throughout the Training Design

The instructional design of this online training program for Early Childhood Education (ECE) educators is fundamentally shaped by established andragogical principles, recognizing that adults learn most effectively when their unique characteristics as learners are addressed (Bahrani, 2024 ; Knowles, 1984, as cited in Darmawan et al., 2024). This theoretical framework guided the selection of content, the structuring of learning activities, the choice of online media, and the design of assessment methods, all with the aim of fostering a learner-centered environment that respects the educators' autonomy, experience, and professional goals (Rodrigo et al., 2024 ; Witcher & Sasso, 2024). By consciously embedding these principles, the training strives to move beyond mere information transmission towards empowering educators with applicable skills and a deeper understanding of digital media creation relevant to their practice, aligning with contemporary views on effective teacher professional development (Zhang et al., 2024). The ultimate objective is to create a learning

experience that is not only instructional but also motivational and transformative for the participating ECE professionals.

A core tenet of andragogy, the learner's "need to know" why they are learning something, is addressed by ensuring all training content and activities are directly relevant to the ECE educators' professional context and the challenges they face (Sánchez-Doménech & Cabeza-Rodríguez, 2024). The focus on creating ECE-specific media using a practical tool like Canva Pro directly responds to an identified need for more engaging and innovative teaching resources (Farisia et al., 2024 ; Kurniawati et al., 2024). Learning objectives for each module and session are explicitly linked to the practical tasks and the culminating projects, ensuring that participants understand the immediate applicability of the skills being taught. Furthermore, the training's orientation towards problem-centered learning is manifested in the project-based assignments, where educators tackle real-world design challenges, such as creating a thematic media kit or an interactive presentation, thus learning by doing and solving problems relevant to their daily work (Bahrani, 2024 ; Pan et al., 2024).

The design also profoundly respects the adult learner's self-concept and the crucial role of their prior experiences (Rodrigo et al., 2024 ; Sánchez-Doménech & Cabeza-Rodríguez, 2024). Educators are treated as self-directed individuals capable of managing their own learning, particularly through the asynchronous components of the online training which allow for flexibility in pacing and scheduling (Kohnke et al., 2024 ; Pölzl-Stefanec & Feierabend, 2025). Opportunities for choice, such as selecting themes for their projects (within the ECE context), further foster this autonomy. The program is designed to encourage participants to draw upon their existing knowledge of child development and classroom practice, integrating these experiences with the new digital skills they acquire. Collaborative activities and peer feedback sessions (Farisia et al., 2024) are structured to value each participant's contribution, reinforcing their identity as capable professionals and active contributors to the learning community.

The training design addresses adult learners' readiness to learn and their intrinsic motivation by focusing on immediately applicable skills that promise to enhance their professional competence and job satisfaction (Ha et al., 2024 ; Bahrani, 2024). The "readiness to learn" is heightened because the training directly tackles the practical challenges of creating high-quality ECE materials. The project-based outputs provide tangible evidence of their learning and skill acquisition, which can be a powerful internal motivator (García-Sampedro et al., 2024). Moreover, reflective activities are incorporated, encouraging educators to consider the impact of their newly created media on children's learning and their own teaching practice (Mazhar & Sylva, 2025), thus connecting the learning experience to their professional values and aspirations for improving educational outcomes. The supportive and collaborative online environment, facilitated by clear guidance and constructive feedback, is also intended to bolster motivation and sustained engagement throughout the program (Cadima et al., 2025).

3.5. Anticipated Benefits, Potential Challenges, and Mitigation Strategies for Implementation

The instructional design of this online training program, grounded in project-based learning and andragogical principles, is anticipated to yield significant benefits for the participating Early Childhood Education (ECE) educators, while also acknowledging potential challenges inherent in online professional development. A primary anticipated benefit is a marked enhancement in the educators' digital literacy, specifically their competence and confidence in using design software like Canva Pro to create a diverse range of engaging and developmentally appropriate learning media (Farisia et al., 2024 ; Kurniawati et al., 2024). This empowerment in content creation is expected to translate into increased teacher self-efficacy (Bayly et al., 2024 ; Feierabend et al., 2024), fostering more innovative and responsive teaching practices (Ha et al., 2024). Furthermore, the andragogical and project-based nature of the training, emphasizing relevance and practical application, is designed to boost learner engagement, motivation, and long-term skill retention (Bahrani, 2024 ; García-Sampedro et al., 2024), ultimately leading to the production of higher quality educational resources that can enrich children's learning experiences (Pölzl-Stefanec, Barta, & Walter-Laager, 2024).

Despite these anticipated benefits, the implementation of this online training program may encounter several challenges, particularly given the context of the eleven ECE educators at the private Indonesian institution with varied initial digital competencies. A key challenge is managing the diverse levels of existing digital literacy among participants; some may require more foundational support, while others might progress more rapidly (Farisia et al., 2024 ; Bayly et al., 2024). Time constraints for busy ECE professionals also pose a significant hurdle to consistent participation and engagement in an extended online program (Pölzl-Stefanec & Feierabend, 2025). Furthermore, ensuring equitable access to reliable internet and appropriate technological devices for all participants is a critical consideration, especially in diverse settings (Darmawan et al., 2024 ; Yıldırım, 2024). Maintaining learner motivation and facilitating effective online collaboration and peer interaction throughout the program also requires deliberate strategies to overcome the potential isolation of online learning (Kohnke et al., 2024 ; Mohammadi, 2023).

To address these potential challenges, several mitigation strategies have been integrated into the training design and its proposed delivery. The program's tiered structure (Beginner, Intermediate, Advanced) inherently caters to different skill levels, allowing for a scaffolded learning journey. This is complemented by clear, step-by-step video tutorials, downloadable guides, and the provision of templates, which are particularly beneficial for those newer to digital design (Kohnke et al., 2024). The predominantly asynchronous delivery model offers flexibility, enabling educators to manage their learning around their professional and personal commitments (Pölzl-Stefanec & Feierabend, 2025). To foster engagement and community, the design incorporates regular opportunities for interaction through discussion forums, peer-feedback on project drafts, and optional synchronous Q&A or workshop sessions (Farisia et al., 2024 ; Cadima et al., 2025). Finally, clear communication channels for technical and pedagogical support will be established, alongside continuous efforts to ensure all learning tasks are perceived as directly relevant and beneficial to the educators' daily practice, thereby reinforcing intrinsic motivation (Bahrani, 2024).

3.6. Implications of the Training Design for ECE Professional Development

The instructional design for online training in digital media creation detailed in this article holds several important implications for the broader field of Early Childhood Education (ECE) professional development. Firstly, it offers a structured, theoretically-informed model specifically addressing the critical need to enhance ECE educators' digital competencies, a global concern in the current educational era (Farisia et al., 2024 ; Leung et al., 2024). By focusing on a practical tool like Canva Pro and embedding project-based learning (PBL) and andragogical principles, this design provides a concrete example of how professional development can be made directly relevant, engaging, and empowering for adult learners, moving beyond often criticized generic or ineffective traditional PD models (Asterhan & Lefstein, 2024 ; Kohnke et al., 2024). This approach directly contributes to the professionalization of the ECE workforce by equipping educators with tangible 21st-century skills necessary for creating innovative and stimulating learning environments for young children (Pan et al., 2024 ; Kurniawati et al., 2024). The detailed articulation of competencies, strategies, and assessments also serves as a transparent blueprint, which is often lacking in descriptions of PD programs (Mazhar & Sylva, 2025).

Secondly, the adaptable nature of this instructional design suggests its potential for wider replication and modification in various ECE contexts, both within Indonesia and internationally. The three-tiered competency structure, combined with the flexible online delivery model incorporating both synchronous and asynchronous elements (Mohammadi, 2023 ; Pölzl-Stefanec, Barta, & Walter-Laager, 2024), could be tailored to train educators in other digital tools or different ECE-specific pedagogical skills beyond digital media creation. This design directly addresses several identified gaps in current PD offerings, such as the lack of training that is sufficiently practical, individualized, and mindful of adult learning needs (Bahrani, 2024 ; Witcher & Sasso, 2024). Furthermore, by providing a solution that mitigates common barriers to PD participation, such as time and location constraints (Bayly et al., 2024 ; Pölzl-Stefanec & Feierabend, 2025), it promotes greater accessibility to quality professional learning, which is crucial for systemic improvement in ECE (Cadima et al., 2025).

Finally, this work underscores the importance of, and provides an example for, designing ECE professional development that is explicitly grounded in educational theory and responsive to the specific needs of its participants and their working environments. The meticulous integration of PBL and andragogy is a direct response to calls within the literature for more robust, theoretically coherent, and learner-centered PD frameworks in education, a field where such approaches are still developing and often undertheorized, particularly in ECE (Asterhan & Lefstein, 2024 ; Elek et al., 2024). The successful design of such a program, with its clear articulation of learning pathways and outcomes, can inform policymakers and PD providers about effective strategies for upskilling the ECE workforce in essential digital and creative competencies (Nyaaba & Zhai, 2024 ; Yang, Rao, & Sun, 2024). Ultimately, empowering ECE educators through such targeted and well-designed training initiatives has the far-reaching potential to enhance the quality of teaching practices, foster more engaging learning experiences, and positively influence child development outcomes (Pangestika et al., 2024 ; Yang, Park, & Chau, 2024).

4. CONCLUSION

This article has meticulously presented a comprehensive instructional design for an online training program specifically developed to enhance the digital media creation skills of Early Childhood Education (ECE) educators. This design, which emerged from a focused community service initiative with a private ECE institution in Indonesia involving its eleven educators, features a three-tiered competency structure and is anchored in project-based learning and andragogical principles. The primary result of this endeavor is a detailed, theoretically-informed, and implementation-ready training blueprint. The key strengths of this design are its learner-centered and highly practical approach, its explicit tailoring to the identified needs of ECE educators, and the inherent flexibility afforded by its online format, all of which are anticipated to foster greater confidence and creative capacity among participants. Ultimately, this work offers a structured model that addresses a clear need for effective professional development in this vital area.

While the proposed instructional design offers a robust framework, its current status as a pre-implementation blueprint constitutes its main limitation; its empirical effectiveness awaits validation through full-scale execution and rigorous evaluation. The initial design, though conceived with principles of adaptability, was informed by the specific context of a single Indonesian institution, and its broader applicability across diverse settings would naturally require further testing. Furthermore, the identified potential challenges for online implementation, such as varying participant digital literacy and ensuring sustained engagement, remain theoretical until the design is field-tested.

This community service initiative has successfully culminated in the delivery of a complete, theoretically-grounded, and implementation-ready instructional design. The following recommendations are therefore directed to the partner institution and any future implementers, providing guidance on the crucial next phase: the careful technical execution of this design. The primary consideration is establishing a robust and accessible technological foundation for the e-training program. This requires a thorough evaluation and selection of an appropriate Learning Management System (LMS). Options could range from a powerful, open-source platform like Moodle, which offers extensive features for assessment and user management, to a more user-friendly, cloud-based solution such as Google Classroom, which is widely used in the Indonesian education system and offers seamless integration with other productivity tools. The final choice must be guided by the institution's technical capacity, budget, and its ability to support the specific media and project-based assessments detailed in the instructional blueprint.

Beyond the central platform, careful preparation of the broader technological infrastructure and participant facilities is essential for a successful rollout. It is strongly recommended that the institution conduct an audit of the participating educators' access to reliable devices and internet connectivity. To mitigate potential access barriers and ensure equity, the institution should be prepared to provide necessary facilities, such as a dedicated computer lab with a stable internet connection on its premises, where educators can engage with the online modules and complete their

design projects. Furthermore, a clear and accessible technical support system must be established. Designating a specific person or helpdesk protocol to assist educators with platform navigation, software issues, or other technical hurdles is a critical step to prevent frustration and ensure that the learning experience remains focused on pedagogical and creative development. Attending to these infrastructural and support details is vital for implementing the instructional design with high fidelity and realizing its full potential to enhance the digital media creation skills of ECE educators.

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