

"Integration of Artificial Intelligence in Social Media Content Production Workflow to Improve Efficiency and Productivity: A Case Study of the Publication Team at SMP Islam Al Azhar 12 Rawamangun"

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Abstract.

The integration of Artificial Intelligence (AI) into the social media management of educational institutions has become critical amid limited human resources (HR) and increasingly high content-volume demands. This study aims to analyze the integration of AI into the content production workflow, measure its effectiveness on time efficiency and productivity, identify technical and non-technical obstacles, formulate optimization strategies, and recommend an automation system for the critical New Student Admission (PMB) period. Using a qualitative approach with a case study design at SMP Islam Al Azhar 12 Rawamangun, data were collected through in-depth interviews with five key informants (purposive sampling), participant observation, and documentation study. The results show that a five-member publication team with a multidisciplinary background (Mechanical Engineering Education, Fashion Design Education, Sociology, and Communication Science) manages six digital platforms with a workload of at least 20–25 pieces of content per week. The use of AI tools such as Gemini, ChatGPT, Claude, Canva, CapCut, and Wix Studio has proven to ease workload, accelerate the acquisition of visual assets, and improve the aesthetic quality of content. Nevertheless, conventional time savings remain relatively moderate (15–30 minutes per piece of content) because manual finishing (human-in-the-loop) is still required. The main obstacles encountered include AI daily-quota limitations, content spikes when school activities coincide (content bottlenecks), and the absence of a fully automated workflow system. This study recommends an AI-CRM-based automation architecture to optimize the school's social media performance, particularly during the PMB period.

Keywords: Artificial Intelligence, Production Efficiency, Educational Social Media, Content Workflow and New Student Admission (PMB).

I. INTRODUCTION

The development of Artificial Intelligence (AI) technology has revolutionized the way organizations produce and distribute digital content, including in the education sector [1]. Social media has become the primary communication platform for educational institutions to build a positive image and interact with stakeholders, particularly parents and prospective students [2]. However, school publication teams face substantial challenges in consistently producing high volumes of content with limited human resources [3]. Prior research indicates that the use of AI tools can improve content-production efficiency and visual quality [4]. Nevertheless, the practical implementation of AI within the context of secondary-school publication teams in Indonesia remains limited and has not been extensively explored [5].

Therefore, a preliminary study at SMP Islam Al Azhar 12 Rawamangun was conducted to reveal a real picture of the problems encountered in the field (In-Depth Interview Results, 2026). The school's publication team consists of five people with multidisciplinary backgrounds who have 2–3 years of work experience and are responsible for producing at least 20–25 pieces of content per week (In-Depth Interview Results, 2026). The content produced covers documentation of school activities captured by a photographer/videographer, which the production team then processes within 15–30 minutes for simple content (In-Depth Interview Results, 2026). The publication team manages six social media platforms—Instagram, TikTok, Facebook, YouTube, Google Business, and the school Website—with a daily posting frequency except for YouTube, and follower engagement that continues to grow each month (In-Depth Interview Results, 2026). This workload increases drastically whenever several school activities take place simultaneously, causing content to "pile up" while the limited staff struggle to handle the volume (In-Depth Interview Results, 2026).

Consequently, the team has tried various tools to speed up content production, such as Canva, CapCut, and Wix Studio, but the use of AI has not yet been systematically integrated into the content production workflow (In-Depth Interview Results, 2026). The publication team has good knowledge of AI and has previously used tools such as Gemini, ChatGPT, and Claude, primarily for creating graphic and video assets (In-Depth Interview Results, 2026). Initial findings indicate that the publication team holds a positive perception of AI because it helps ease workload and simplifies asset acquisition (In-Depth Interview Results, 2026). However, this optimism is confronted by various practical constraints. AI implementation still faces technical obstacles in the form of daily usage limits and requires manual final touches to ensure content quality remains optimal (In-Depth Interview Results, 2026). Although the use of AI has not produced significant time savings (around 15–30 minutes per piece of content), the team still experiences increased productivity and better content quality (In-Depth Interview Results, 2026). In addition, there is not yet an automation system specifically for the New Student Admission (PMB) process, which is the critical period with the highest content volume (In-Depth Interview Results, 2026).

Based on the identified problems and opportunities, this study is designed to explore in depth how AI integration can improve the efficiency and productivity of the publication team. This study analyzes: (1) the current process of AI integration into the content production workflow, (2) the effectiveness of AI use in improving the team's time efficiency and productivity, (3) technical and non-technical obstacles in AI implementation, (4) strategies for optimizing AI use to handle high workloads, and (5) recommendations for an automation system that can be applied, particularly for the PMB period (In-Depth Interview Results, 2026). The contribution of this research is expected to provide practical insights for other schools facing similar challenges in managing social media with limited human resources [6]. The findings can inform educational-institution policy in optimally integrating AI technology and developing training programs for school communication teams [7]. Ultimately, this research contributes to the literature on AI implementation in the Indonesian education context and demonstrates how technology can support school operations in the digital era [8].

II. METHODS

This study uses a qualitative approach with an exploratory case study design to obtain an in-depth understanding of the phenomenon of AI integration into the social media production workflow.

Research Design and Location

The research was conducted at SMP Islam Al Azhar 12 Rawamangun, East Jakarta. This location was purposively selected because the institution is one of the private secondary schools that actively adopts generative AI in its digital publication operations.

Research Informants

Research informants were determined using a purposive sampling technique, involving five key informants comprising one coordinator (supervisor) and four staff members with functional role divisions: digital marketing, graphic designer, photographer/videographer, PMB admin, web developer, and video editor. All informants had 2–3 years of work tenure and active experience using AI tools in school content production.

Data Collection and Analysis

Data were collected through three main techniques to facilitate data triangulation:

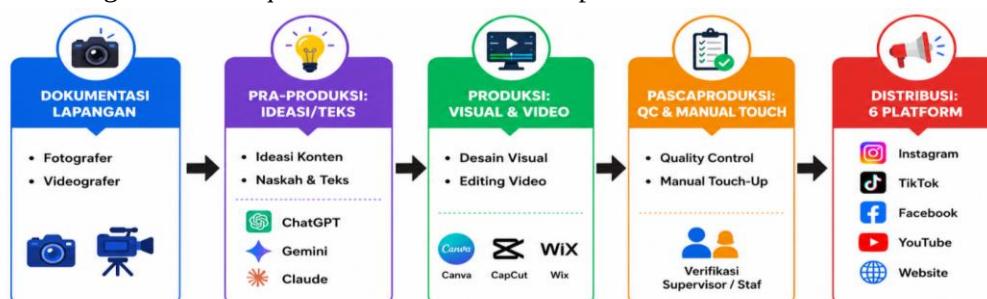
1. **In-Depth Interviews:** Using a semi-structured guide lasting 45–60 minutes per session to explore in-depth information regarding the team's profile, workload, tools used, content evaluation, and technical/non-technical obstacles.
2. **Participant Observation:** Directly observing the team's work workflow during field documentation, tool-based production (Canva, CapCut, Wix), and publication across six social media platforms.
3. **Documentation Study:** Analyzing monthly engagement metric reports, the content calendar (20–25 pieces of content/week), and archives of high-performing Reels-based content.

Data were analyzed using the thematic analysis technique of the Miles, Huberman, and Saldaña model [9], which includes data reduction, data display, and conclusion drawing. Source triangulation was applied to ensure the validity of empirical findings.

III. RESULT AND DISCUSSION

Team Profile and Mapping of the Existing Content Production Workflow

Based on the results of in-depth interviews and observation, social media management at SMP Islam Al Azhar 12 Rawamangun is carried out by a five-person publication team (one coordinator and four staff). This team composition has a structural uniqueness because it is supported by multidisciplinary educational backgrounds—namely Mechanical Engineering Education, Fashion Design Education, Sociology, and Communication Science—with 2–3 years of active work tenure. Task distribution is divided into the areas of digital marketing (ad setting), graphic design, photography/videography, PMB admin, web development, and video editing. This heterogeneous composition is noteworthy in itself: rather than hiring specialists trained specifically in digital media, the school appears to have organically assembled a team whose complementary academic backgrounds happen to map onto the functional needs of a modern content operation—an arrangement that, while seemingly accidental, has produced a resilient and adaptable unit capable of covering the full range of tasks required to sustain six active platforms.



The daily content-production workflow runs systematically through five stages:

1. **Documentation Stage:** The photographer/videographer covers school activities.
2. **Pre-Production Stage:** The team develops ideas and scripts with the assistance of large language models (ChatGPT, Gemini, Claude).
3. **Production Stage:** Creation of graphic and video assets using Canva, CapCut, and Wix Studio, which are considered very easy to operate for producing quick drafts.
4. **Post-Production Stage:** Because AI output is not yet perfect, manual final touches (human-in-the-loop) are carried out to ensure alignment of message, ethics, and aesthetics.
5. **Distribution Stage:** Content is disseminated across six main platforms (Instagram, Facebook, YouTube, TikTok, Google Business, and the Website), with a specific arrangement in which YouTube is uploaded periodically, while Instagram and TikTok are filled with content daily (predominantly in Reels format).

This five-stage pipeline reflects a workflow that has matured through practical trial and error rather than formal design, yet it already embodies the essential logic of an AI-augmented content operation: human judgment anchors the beginning (documentation) and the end (quality control), while AI tools are concentrated in the middle stages where speed and scale matter most. This distribution of labor is consistent with the human-in-the-loop model increasingly observed in AI-assisted creative industries, where machines accelerate ideation and asset generation but final accountability for tone, accuracy, and institutional image remains firmly in human hands.

Workload, AI Effectiveness, and Content Productivity

The publication team is required to meet a minimum quantity target of 20 to 25 pieces of content per week to serve its primary audience, namely parents and prospective parents of students. The greatest challenge arises when several school activities occur simultaneously, causing material to pile up. The limited number of staff makes handling high content volume a significant challenge.

The adoption of AI tools (Gemini, ChatGPT, Claude, Canva, CapCut) has made a tangible contribution to operational smoothness. Although direct time savings are moderate (around 15–30 minutes

per simple piece of content) and have not produced a drastic change in overall time efficiency, the presence of AI has had a positive impact on **improving content quality and variety**. Based on periodic evaluation, Reels-format content that utilizes engaging talent has proven to generate good engagement. The team maintains high-performing content patterns and discontinues content types that receive a poor public response.

It is worth elaborating on why the time savings observed here are more modest than what is often promised in broader discourse on generative AI productivity gains. The 15–30-minute figure applies specifically to simple content pieces; it does not capture the disproportionately larger time savings AI likely delivers on more complex assets, such as multi-slide carousels, promotional videos, or PMB-related materials requiring iterative drafting. Moreover, because the team operates under a human-in-the-loop model rather than a fully automated one, every AI-generated draft still passes through a verification and refinement stage, which caps the theoretical maximum efficiency gain regardless of how fast the underlying AI tools become. This suggests that the productivity benefit of AI in this context is better understood not purely as a matter of raw time saved, but as a qualitative uplift: content that previously might not have been attempted at all—due to time or skill constraints—now becomes feasible, and content that would have taken longer to reach an acceptable aesthetic standard now reaches that standard faster. In other words, AI functions less as a stopwatch-reducing device and more as a capability multiplier, expanding what a five-person team can realistically produce within a fixed time budget.

Technical and Non-Technical Obstacles in AI Implementation

The analysis results show that AI adoption is not free from various operational obstacles:

Technical Obstacles:

- **Daily Limitations:** The limited quota of free access to AI tools frequently makes things difficult for the team when workload volume is peaking.
- No major hardware-related technical constraints were found; however, the stability of external AI systems significantly affects work speed.

Non-Technical Obstacles:

- **Activity Schedule Spikes (Content Overload):** When school activities overlap, the capacity of the five staff members becomes overwhelmed in filtering and editing material, even with AI assistance.
- **Need for Manual Touches:** AI output cannot be published directly; it must go through manual verification and refinement to ensure alignment with the image of an Islamic educational institution.

Taken together, these two categories of obstacles point to a single underlying tension: AI tools in this context accelerate *drafting* far more effectively than they accelerate *decision-making and finalization*. Daily quota limits are, in effect, a rationing mechanism imposed by external vendors that the team has no control over, and they interact badly with the unpredictable, bursty nature of school activity schedules—precisely the moments when the team most needs unrestricted AI capacity. Meanwhile, the requirement for manual, values-aligned finishing reflects a legitimate institutional concern rather than a mere workflow inefficiency: content published under the name of an Islamic school carries reputational weight that AI systems, trained without specific awareness of the institution's values and community expectations, cannot yet be trusted to safeguard unsupervised. Any future automation strategy, therefore, must treat quota management and human oversight as two separate problems requiring two separate solutions, rather than assuming that solving one will resolve the other.

Strategies for Optimizing AI Utilization

To address the obstacles above, this study formulates optimization strategies through three main approaches:

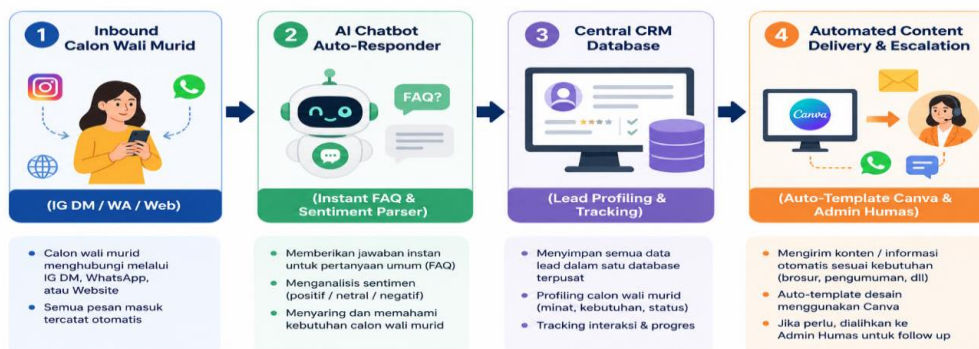
1. **Cross-Functional Collaboration:** Maximizing the synergy of the team's multidisciplinary backgrounds (Mechanical Engineering, Fashion Design, Sociology, Communication) in operating AI modules suited to specific tasks (e.g., Sociology for audience analysis, Fashion Design for visual aesthetics/Canva).
2. **Periodic Evaluation Based on Engagement Metrics:** Using monthly analytics data as the basis for formulating subsequent AI prompts so that the resulting content remains relevant to parent preferences.

3. **Increased Access Capacity:** Switching to paid subscription models to mitigate daily-limit constraints on key AI tools.

Beyond these three strategies, the findings also point toward a fourth, implicit opportunity: formalizing the informal cross-disciplinary matching that already occurs organically within the team. Because staff with a Sociology background naturally gravitate toward audience-facing prompt design, and staff with a Fashion Design background naturally gravitate toward visual polish, documenting and institutionalizing these informal specializations—rather than leaving them to emerge by chance—could shorten onboarding time for future team members and make the team's AI competency less dependent on any single individual's tacit knowledge.

Recommendation for Content Workflow Automation During the PMB Period

The New Student Admission (PMB) period is identified as a critical phase in which the volume of inquiries and content needs reaches its peak. Given the high workload of the PMB admin and publication team, this study recommends an **Integrated AI-CRM-Based Automation Architecture**.



The recommended automation system includes:

- **Implementation of a Smart AI Chatbot:** Automating answers to routine questions about fees, curriculum, and registration requirements on Instagram and WhatsApp channels without waiting for manual admin responses.
- **Integration of Dynamic Templates for PMB:** Connecting the registrant database with an automatic generator (such as Canva API integration) to accelerate the creation of publication materials specifically for prospective students in real time.

The rationale for prioritizing the PMB period specifically, rather than pursuing full workflow automation across all six platforms simultaneously, rests on a straightforward cost-benefit logic: PMB represents a bounded, predictable, high-volume, high-repetition period during which a large share of admin time is spent answering structurally similar questions from different parents. This repetitiveness makes it an ideal candidate for chatbot automation, since the marginal cost of building and training a chatbot is quickly recovered given the volume and predictability of queries during this window, whereas applying the same investment to the more varied, activity-driven content produced during the rest of the school year would yield a much lower return. A phased rollout—beginning with PMB-specific automation before expanding to broader workflow automation—would therefore allow the school to validate the AI-CRM architecture's reliability and community reception under a contained, high-stakes but time-limited scenario before committing further resources to system-wide automation.

IV. CONCLUSION

The integration of Artificial Intelligence (AI) into the social media content production workflow at SMP Islam Al Azhar 12 Rawamangun has proven to help a five-person, multidisciplinary publication team manage six digital platforms while meeting a target of at least 20–25 pieces of content per week. Although conventional time savings remain in the range of 15–30 minutes per piece of content and still require manual final touches (human-in-the-loop), AI effectively improves productivity, format variety (such as Reels), and visual aesthetic quality. The main obstacles encountered include AI daily-quota limitations and workload

spikes when school activities coincide. This study recommends strengthening periodic evaluation, cross-disciplinary collaboration, and the implementation of an AI-CRM-based automation architecture to optimize content management, particularly during the critical New Student Admission (PMB) period.

Beyond these specific findings, the case of SMP Islam Al Azhar 12 Rawamangun offers a broader lesson for resource-constrained educational institutions navigating the current wave of generative AI tools: meaningful productivity gains do not necessarily require large investments in bespoke automation systems, but can instead emerge from thoughtfully integrating widely available consumer-grade AI tools into an existing human workflow, provided that institutions remain clear-eyed about where human oversight is non-negotiable. The moderate, rather than transformative, time savings reported here should not be read as a limitation of AI itself, but as a reflection of the current stage of integration—informal, tool-by-tool, and not yet supported by dedicated workflow infrastructure. As the school moves toward the recommended AI-CRM architecture, particularly for the PMB period, it is reasonable to expect that the efficiency gains will compound: not because AI will require less human oversight, but because a purpose-built system can route routine, low-risk tasks fully to automation while reserving human attention for the judgment calls—message alignment, ethical review, and aesthetic finishing—that this study identifies as irreducibly human. Future research could usefully track this transition longitudinally, measuring whether the anticipated efficiency gains materialize once a formal AI-CRM system is implemented, and whether the cross-disciplinary "informal specialization" strategy identified in this study can be formalized into a replicable training model for other resource-constrained school publication teams across Indonesia.

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