INTEGRATED VISUAL SYSTEM DESIGN FOR ACADEMIC LIBRARIES: AN ACTION STUDY TO IMPROVE BRAND IDENTITY, AUDIENCE UNDERSTANDING AND TEAM **EFFICIENCY**

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Abstract

Academic libraries often face the challenge of visual inconsistency on social media due to the lack of a standardized design system, which can weaken brand identity and communication effectiveness. This study aims to design, implement, and evaluate an integrated visual system to address this issue. The method used was Action Research, conducted in two cycles, adopting the Kemmis and McTaggart model. Data collection was carried out comprehensively through interviews with managers, observations. questionnaires distributed to the audience (n=12). The study resulted in an integrated visual system consisting of a visual guideline (SOP) and a series of design templates in Canva, which was proven to significantly improve the team's workflow efficiency. Audience validation showed a very positive response, with all respondents (100%) stating that the new design was easy to understand, aligned with the brand identity, and visually consistent across all tested indicators. In conclusion, this study contributes by producing a practical and proven sustainable integrated visual system model. This model explicitly offers operational solutions for non-designer teams in library environments, an applicable approach that distinguishes it from previous research.

Systems, Brand Identity, **Keywords**: Visual Information Visualization, Academic Libraries, Action Research

INTRODUCTION

Academic libraries in the digital era face the challenge of transforming from mere collection providers to dynamic information centers integrated with their users' digital ecosystems. Fundamental shifts in information-seeking behavior require library institutions to proactively adopt communication technology to maintain their relevance, a mandate also aligned with Law Number 43 of 2007 concerning Libraries. Utilizing social media is a crucial strategy in this effort, enabling libraries not only to disseminate information but also to build direct interaction and engagement with their core community, namely students.

Among the various platforms available, Instagram stands out as a highly effective medium for academic libraries due to its highly visual nature and user base aligned with student

demographics (We Are Social, 2024). Research shows that visual content significantly outperforms text-based content in generating user engagement on academic library social media. The success of communication on this platform depends heavily on the effectiveness of information visualization, namely the presentation of messages through structured graphic elements (Asgharzadeh, 2022). Visually presented content has been shown to be easier to understand and remember, a crucial factor in capturing the attention of Generation Z, who are accustomed to fast and interactive visual stimulation (Martinez et al., 2021).

A case study of the Bandung Institute of Technology (ITB) Library's Instagram account, @itblibrary, revealed significant challenges in harnessing this potential. Despite being active since 2017 and demonstrating a commitment to continuous design improvement, in-depth observation identified persistent issues related to visual inconsistencies in uploaded content. These issues manifested themselves in the use of shifting color palettes, inconsistent template formats, and varied typography. This inconsistency directly hampered communication effectiveness and made it difficult for audiences to recognize the account's cohesive visual identity.

The primary cause of this inconsistency was the lack of visual guidelines and a standardized template system. Without clear operational standards, the creative process for content creation tended to be intuitive and unstructured. Each post relied on individual design interpretations, resulting in significant visual variation. This situation is exacerbated by operational challenges such as limited human resources and the need to meet upload quantity targets, which often force rushed content production. Consequently, instead of building a strong image, this unsystematic approach results in a fragmented visual display.

The cumulative impact of this visual inconsistency is significant for brand identity in the digital space. A strong brand identity is built through consistent and repetitive visual recognition. When audiences are presented with constantly changing visuals, a brand loses its recognizability, making it difficult for them to distinguish it from the sea of information on social media. This aligns with the view of Bettaieb and Alsobahi (2022), who assert that visual harmony between elements is crucial for strengthening Visual Brand Identity (VBI). This inconsistency directly undermines the library's image as a professional and authoritative source of information, thus preventing Instagram from maximizing its strategic potential for building strong relationships with audiences.

These challenges in visual management are not isolated phenomena. Previous studies in other academic libraries in Indonesia have identified similar issues related to design inconsistencies stemming from a lack of guidance (Risdiyanto and Ganggi 2023). Internationally, many libraries have recognized the importance of building a cohesive visual brand system through a collaborative process. While some studies have offered solutions such as designing a Graphic Standard Manual (Kadafi, 2024), developing an information media system (Pranoto, 2020), or creating basic content through Action Studies (Nurulauni, 2024), these solutions often lack a focus on sustainable, practical implementation for non-designer staff. Furthermore, the importance of visual guidance for enhancing digital content understanding has been empirically proven. Therefore, there remains a gap in providing a working model that not only produces guidance but also ensures that the solution is practical, easy to adopt, and proven sustainable in a resource-constrained work environment.

To address these challenges and gaps, this study applied an action research approach to design, implement, and evaluate an integrated visual system applicable to the Bandung Institute of Technology (ITB) Library. This system consists of a comprehensive visual guide and a series

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of ready-to-use design templates, collaboratively designed. Therefore, this article aims to describe the process and results of this action research study. This research offers a practical model that can be replicated by other academic libraries to improve visual consistency, ultimately contributing to strengthening brand identity, audience understanding, and team efficiency.

Information Visualization in the Context of Social Media

Information visualization is a strategic approach to message presentation that utilizes various graphic elements to present data effectively and interactively (Asgharzadeh, 2022). This approach is particularly crucial on social media platforms, which can be defined as internetbased applications that enable the creation and exchange of content by users (Kaplan & Haenlein, 2010). On platforms like Instagram that demand quick attention, the success of this method lies in its ability to transform complex data into a more digestible visual format (Ware, 2004; Yanti et al., 2024). Information presented visually tends to be more memorable than plain text, thus facilitating more impactful and effective communication (Interaction Design Foundation, (2025)

Fundamental Elements in Visual Design

The success of an information visualization is determined by the harmonious arrangement of visual design elements. Color is the first crucial element that functions to communicate identity, build emotional associations, and effectively create a brand image (Anggraini & Nathalia, 2016). Psychologically, colors like blue have been shown to evoke perceptions of trust and professionalism (Elliot & Maier, 2014), making the choice of color palette a strategic decision. The second element is typography, where the use of sans-serif fonts is highly recommended for readability on digital screens (Anisya, 2013). The third element is graphic elements, such as geometric shapes from the Bauhaus design principles, which serve to create an organized and aesthetic visual structure (Lupton and Miller, 2000). Finally, layout serves as a framework that integrates all these elements into a cohesive composition. Cohesive.

Design Principles for Effective Communication

The arrangement of visual elements is governed by the principles of Visual Communication Design (DKV) to achieve effective communication goals. According to Anggraini and Nathalia (2016), these principles serve as the foundation for creating harmonious works. The principle of balance is used to evenly distribute visual weight. Furthermore, the principle of rhythm, through the repetition of elements, creates a consistent visual flow. The principle of emphasis is applied to highlight key information as the center of attention. Finally, all these principles are tied together by the principle of unity, where harmony between elements ensures the overall design feels unified and uncluttered (Anggraini & Nathalia, 2016). The application of these principles is key to producing functional content that supports audience understanding (Jin, 2013).

Brand Identity and the Role of Visual Guidelines

The ultimate goal of implementing consistent design is to build a strong brand identity. Brand identity is not a naturally formed image, but rather a consciously planned concept designed to shape the desired perception. In the digital space, this identity is predominantly expressed through Visual Brand Identity (VBI), which is everything the audience can see about

a brand (Bettaieb & Alsobahi, 2022). The key to building a strong VBI is consistency, which has been proven to build trust and brand recognition (Dang, 2018). To achieve this, professional practice in visual branding recommends creating a visual style guide. This guide, which includes structured design templates, is an effective solution to support online brand promotion activities (Al Hag and Surya Patria, 2022).

Visual Design and User Experience

In addition to building a brand, implementing good design principles also aims to create a positive User Experience (UX). According to Wiryawan (2011), UX can be defined as a person's perception and response resulting from using a product or system, including the level of satisfaction and comfort in interacting with it. The foundation of good UX is usability, which has several key components, including: learnability (the system's ease of learning), efficiency (the speed of completing tasks), and satisfaction (the user's subjective satisfaction) (Wiryawan, 2011).

Furthermore, to achieve superior UX, a design approach must be user-centered (Human-Centered Design - HCD), where a deep understanding of user needs and preferences is the primary reference point in every design decision (Wijaya et al., 2025). Research on public service platforms shows that the implementation of HCD, which produces elements such as intuitive navigation and clear visual hierarchies, has been shown to significantly improve usability scores and user satisfaction (Wijaya et al., 2025). In this context, the visual system designed in this study is seen not only as an aesthetic improvement but also as a deliberate intervention to enhance the audience's user experience in interacting with library content.

RESEARCH METHOD

This research employed a qualitative method with an Action Research approach. This approach was chosen because of its participatory nature and focus on developing practical knowledge to solve problems directly in the field (Coghlan & Brannick 2015, cited in Yaumi & Damopolii 2016). The research procedure specifically adopted the cyclical model of Kemmis and McTaggart (1988), chosen for its dynamic nature and orientation toward continuous improvement. The research was conducted in two iterative cycles, each consisting of four stages: planning, action, observation, and reflection, allowing for refinement of solutions based on field findings.

The first cycle focused on problem diagnosis and initial solution development. In the planning phase, researchers conducted archival content observations and in-depth interviews with managers to identify core issues, namely visual inconsistencies and workflow inefficiencies. The action phase then realized the design of the first version of the visual system, which included design concepts (color palette, typography, Bauhaus style) and six categories of initial design templates in Canva. During the observation phase, the effectiveness of this initial solution was evaluated through two methods: distributing questionnaires to 12 audience members and conducting evaluative interviews with the administrators. The reflection phase of the first cycle concluded that although the initial solution was highly positive, the administrators provided crucial feedback for improvement, namely the need for more template variations and more detailed layout guidelines.

The second cycle was designed as a refinement phase that directly addressed the reflection results from the first cycle. The planning phase of this cycle focused on formulating

actions to address the administrators' feedback. In the action phase, the researchers made three main improvements: (1) adding two new template variations for the Holiday content category, (2) designing six new templates specifically for the carousel format, and (3) refining the visual guide by adding a precise grid-based layout system. The observation phase of the second cycle involved submitting the final, refined product to the administrators for review. The final reflection phase indicated that all input had been successfully implemented, and the final product was deemed to have met all requirements, thus deeming the research cycle complete.

Data collection and analysis used a mixed technique. Qualitative data from interviews were analyzed using thematic analysis to extract key findings. Quantitative data were collected through questionnaires distributed to 12 account followers. The selection of a purposive sample of 12 individuals was based on the principles of qualitative research and case studies, where the goal is not statistical generalization, but rather to gain in-depth understanding and substantive feedback for the evaluation and design improvement process within the Action Review cycle. The effectiveness of the intervention was then measured based on two primary success criteria: improved Information Visualization Quality (measured by questionnaires) and improved Content Production Efficiency (measured by interviews).

RESULT AND DISCUSSION

The results of this study were obtained through an Action Research approach implemented in two cycles. Data collection was conducted comprehensively through observations of the @itblibrary Instagram account, in-depth interviews with managers, and questionnaires distributed to the audience. The collected data then served as the basis for each action stage, and was analyzed reflectively to evaluate the impact of the intervention and ensure the resulting solution fully addressed needs.

Initial Problem Overview in Visual Content Production

The problem identification process was a fundamental initial step in this research to map the actual conditions of the @itblibrary Instagram account management team. The problem investigation was conducted using two qualitative methods: direct observation of the account's content archive and in-depth interviews with the Coordinator of Cooperation Services and Public Relations responsible for the account. Observations allowed researchers to study historical patterns of information delivery and identify visual inconsistencies, while interviews provided direct insight into workflows, operational challenges, and perceived needs of the managers. The combination of these two methods yielded a holistic understanding of the existing problem.

Observations of the @itblibrary content archive revealed a primary problem: persistent and significant visual inconsistencies. Although the management team has demonstrated a commitment to improving the design annually, the end result has yet to demonstrate a unified visual identity. This inconsistency is clearly manifested in fundamental elements such as the use of color palettes, typography choices, and the implementation of different layouts, even within similar content categories such as posts about holidays. This condition was confirmed by the manager who stated, "There is no uniformity in the design of the content. The content we create is basically designed in the form of the ITB library identity, such as the ITB logo...". This lack of uniformity directly hinders the effectiveness of communication and makes it difficult for the audience to recognize a cohesive visual identity for the library account.



Figure 1: Example of Inconsistency in Visual Content Design for Holidays (Source: Personal Documentation)

Further analysis identified that the underlying cause of these inconsistencies was not a lack of effort, but rather the absence of a standardized visual guide and template system. Without clear design operational standards, the creative process for content creation tended to be intuitive and unstructured. The management team, lacking formal graphic design training, was forced to rely on their own tastes and random references from templates available in the Canva app. This was openly acknowledged by the manager: "In our unit, there are no specific guidelines for content creation. We just adapt the graphics to make it look attractive, because we're not graphic design experts." This unsystematic approach inherently resulted in fragmented visual output.

This lack of a standardized system was exacerbated by various operational challenges faced by the management team. Limited human resources, with account management largely handled by a single coordinator juggling multiple other responsibilities, created high work pressure. The pressure to meet annual upload quota targets, known as contribution cards, also often forced the production process to be rushed. The coordinator explained, "With the contribution cards, we were really overwhelmed... Sometimes we created impromptu content to meet the target figure." This combination of the lack of a guidance system and operational pressures resulted in inefficient workflows and inconsistent visual output.

Visual System Design and Its Impact on Audience Understanding

To address the identified inconsistencies, this research proceeded to the action phase by designing an integrated visual system. This design was not carried out unilaterally, but collaboratively, involving input from management to ensure the resulting solution aligned with the institution's needs and identity. The process began with the development of a fundamental design concept, which served as the visual foundation for all future products and was based on the principles of Visual Communication Design (DKV).

The concept design began with the determination of a color palette aimed at establishing a strong brand identity foundation. Dark blue (HEX #004391), synonymous with the Bandung Institute of Technology (ITB) logo, was chosen as the primary color to maintain institutional consistency. This palette was then enriched with secondary and accent colors (light blue and yellow) chosen using Goethe's theory of color harmony to create good visual contrast and enhance readability (Herdani, 2023). Furthermore, the typography selection focused on optimizing readability on digital screens, where the combination of the sans-serif font Gotham

for the title and Montserrat for the body text was chosen to create a clear visual hierarchy (Anisya, 2013). Finally, the overall design concept adopted the minimalist and functional Bauhaus style (Lupton and Miller, 2000), and was strengthened by the integration of the ITB

mascot "Roga", to project a professional, modern, yet friendly image.

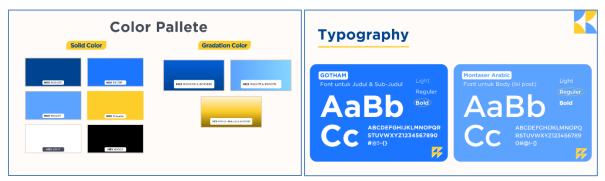


Figure 2: Visual System Foundation (Color Palette and Typography)
(Source: Personal Documentation)

Based on this conceptual foundation, the main product is a series of ready-to-use design templates on the Canva platform. These templates are not created generically, but are specifically classified into six content categories identified during the planning stage: Service Information, Holidays/Major Events, Greetings, Event Posters, Activity Documentation, and Education (Trivia). Each template is designed with a consistent structure (header, footer, and content area) yet remains flexible to be adapted according to the information needs of each category, ensuring that every post has the same visual "fingerprint."



Figure 3: Comparison of New, Consistent Templates (Source: Personal Documentation)

The success of this visual system design was then quantitatively validated from an audience perspective. The evaluation was conducted through a questionnaire distributed to 12 account followers to gauge their perceptions of the new design. The evaluation results demonstrated very strong validation, with all aspects of the design deemed successful in

meeting expectations. As summarized in Table 1, the majority of indicators, such as ease of understanding information and alignment with brand identity, received 100% approval from respondents, significantly exceeding the 90% success indicator established at the beginning of the study.

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No.	Rated aspect	Positive Response Results
1.	Easy-to-understand information	12 dari 12 (100%)
2.	Good color contrast and easy to read	12 dari 12 (100%)
3.	Typography is comfortable and professional	12 dari 12 (100%)
4.	Balanced and uncluttered layout	12 dari 12 (100%)
5.	Graphic elements support the message	12 dari 12 (100%)
6.	Color choices align with ITB's brand identity	12 dari 12 (100%)
7.	Design feels consistent with the brand	12 dari 12 (100%)

Table 1: Summary of Audience Design Evaluation Survey Results (n=12)

Further discussion indicates that this positive audience response can be attributed to the conscious application of Visual Communication Design principles in the design. As explained by Anggraini and Nathalia (2016), Visual Communication Design aims to inform and even change audience behavior through structured visual language. The application of the principle of asymmetrical balance to the event poster template, for example, directly contributed to the 100% of respondents stating that the layout was balanced. Similarly, the application of the principle of unity through the use of a harmonious color palette and typography was the basis for 100% of respondents who felt the design was consistent with the brand identity. This confirms that a theoretical and structured design approach is key to achieving effective and easily understood visual communication for the audience.

Implementation of the Visual Guide and Improved Team Efficiency

Efforts to ensure the sustainability and ease of adoption of the new visual system were realized through the design of a second product, an information visualization guide. The purpose of this guide is to serve as a practical design Standard Operating Procedure (SOP), ensuring that anyone managing the account can maintain long-term visual consistency. To maximize ease of use, the guide is designed in an interactive slide booklet format using the Canva app, a platform the management team is already very familiar with and thus requires no new technical learning curve.



Figure 4: Cover and Example Pages of the Information Visualization Guide

As a result of the reflection process in the first cycle, this guide was then refined in the second cycle of research with the addition of a grid-based layout system. This addition directly addresses input from managers who previously felt confused in determining the precise positioning of graphic elements. The grid guide provides a structured visual framework with clear measurements, effectively eliminating intuition and "guessing" from the design process. According to Anggraini and Nathalia (2016), a grid system can answer a designer's confusion when it comes to placing images or measuring the width of graphic elements. Furthermore, this grid system is also key to maintaining long-term visual consistency, where a designer can create a systematic way to maintain consistency in repeating the composition that has been created (Anggraini & Nathalia, 2016).

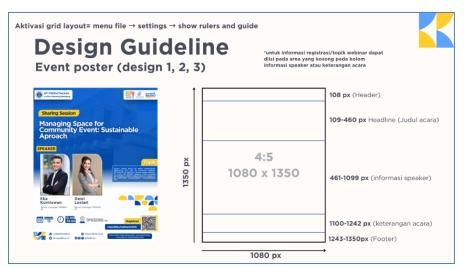


Figure 5: Example slide from the visual guide demonstrating the application of a grid system to layout.

The implementation of this integrated system, consisting of templates and guides, has proven to have a significant impact on the efficiency of the team's workflow. Prior to the intervention, the workflow was often inefficient due to the lack of standards, forcing the team to adapt to random templates from Canva and work under the pressure of quantity targets. Based on evaluative interviews, the Service Coordinator confirmed that the content production process after the new system was implemented was significantly faster and simpler. The team's workflow fundamentally changed, from designing from scratch to simply replacing text and images in ready-made templates. He stated, "It really helps us in creating various e-posters, because the structure (in the guides) is consistent, so it's not messy, the colors aren't jumbled, so it's consistent."

These findings indicate that the success of the research lies not only in improving aesthetic quality but also in creating a sustainable operational solution. The combination of ready-to-use templates and clear visual guides effectively transformed the team's workflow from being intuitive and inefficient to being more systematic. This solution directly meets the research's success indicators of production efficiency and ease of use. Thus, the designed integrated visual system not only successfully strengthens brand identity and audience understanding, but also empowers internal teams with efficient tools and working methods to maintain quality consistency in the future.

The findings of this study can be further discussed through the two main theoretical frameworks requested by the reviewers: brand management and user experience design. First, from a brand management perspective, the success of the visual system in creating consistency can be interpreted as an effective implementation of the brand identity dimension. The strategic

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choice to consistently use the institutional blue color, the library building background, and the "Roga" mascot embodies the brand as organization and brand as symbol dimensions (Andersson and Otterheim, 2003). This consistency has proven successful in rebuilding a cohesive visual identity, which, according to Wardhana (2024), is the foundation for increasing brand recognition and loyalty. The 100% positive response from the audience to the indicator of consistency with the ITB brand identity serves as empirical evidence of the successful implementation of this theory.

Second, the positive impact felt by the audience and the management team can be analyzed through the lens of User Experience (UX) Design. For the audience (external users), the ease of understanding information and visual comfort reflected in the survey results indicate the achievement of high usability, a core component of UX (Wiryawan, 2011). This supports other research showing that good visual design elements directly influence user perceptions of the trustworthiness and usability of a library's digital services. Meanwhile, for the management team (internal users), increased workflow efficiency directly improves their user experience. The collaborative Action Review approach used in this study essentially reflects the principles of Human-Centered Design (HCD), where understanding user needs is the primary design guideline (Wijaya et al., 2025).

CONCLUSION

This action research successfully addressed the challenges of visual inconsistency and content production inefficiencies faced by the Bandung Institute of Technology (ITB) Library. Through two research cycles, an integrated visual system was designed and implemented, consisting of design templates aligned with the brand identity and information visualization guidelines that serve as Standard Operating Procedures (SOPs). The evaluation results demonstrated that this system significantly improved audience comprehension, strengthened the library's brand identity through visual consistency, and fundamentally improved the efficiency of the management team's workflow.

The practical implication of this research is the provision of a visual system design model that can be replicated by other academic libraries facing similar challenges, particularly those with limited resources and design expertise. To ensure the sustainability of this solution, it is recommended that institutions conduct regular evaluations of the guidelines and templates, and conduct short training sessions for staff to ensure knowledge is well-distributed and not reliant on a single individual.

The authors acknowledge the limitations of this research. The use of a small audience sample (n=12) in the quantitative evaluation was not intended for statistical generalization, but rather for the purpose of in-depth formative evaluation in the context of Action Review, where qualitative feedback is prioritized for the iterative design improvement process. Therefore, as a recommendation for future research, follow-up studies can validate these findings on a larger scale to quantitatively measure the impact of the visual system on user engagement metrics over a longer period. Such research will provide a more comprehensive theoretical contribution to the development of library science and visual communication.

SUGGESTION

Based on the research findings, the authors propose several practical suggestions for the ITB Library Technical Implementation Unit (UPT) to ensure the sustainability and effectiveness

of this visual system in the future: It is recommended that the management team schedule regular evaluations of the visual guides and design templates. This evaluation can be conducted at least once a year by gathering feedback from the audience or analyzing new design trends, to then make adjustments or add variations to the templates if necessary. It is recommended that the Service Coordinator conduct a short training session for all staff potentially involved in content creation. This training aims to ensure that all parties understand how to use the templates and visual guides correctly, so that the quality and consistency of the design are not dependent on a single person and are maintained even if there is a change in personnel.

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