

Visualizing Digital Comics to Improve Teenagers' Awareness of Bullying Issues

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Abstract

Bullying remains a significant problem among teenagers, causing severe psychological impacts on victims. This study aims to educate and build empathy among teenagers toward bullying victims through a digital comic titled *Rough*, published on the Webtoon platform. The research employed the ADDIE development model (Analysis, Design, Development, Implementation, Evaluation), focusing on how visual elements—such as character design, visual style, coloring, paneling, and expressions—enhance the effectiveness of message delivery. Expert validation on media scored 93.66% and material validation reached 94%. A user trial involving 30 high school students resulted in an average effectiveness score of 89.64%. These findings indicate that visualization in digital comics serves as an effective medium to convey bullying issues and foster empathy among teenagers.

Keywords: visualization, digital comics, bullying, teenagers, Webtoon

1. Introduction

Bullying remains a serious and widespread issue in the educational environment, particularly among teenagers. This form of aggressive behavior, whether physical, verbal, social, or cyber is often repetitive and can lead to long-term psychological trauma for its victims. According to the Indonesian Child Protection Commission (KPAI), there were 2,982 reported cases of violence against children in 2021, with more than 1,100 involving physical and psychological abuse [1]. These statistics reflect the urgency of addressing bullying, not only through prevention efforts but also by educating young people using approaches that engage both their logic and emotional awareness.

Teenagers are a vulnerable demographic in bullying dynamics. During adolescence, individuals are in the process of identity formation and emotional development, making them prone to both becoming victims and perpetrators [2]. Socioeconomic disparities, peer pressure, and a lack of parental or school supervision often trigger bullying behaviors. Although the issue has been widely discussed, there is still a gap in educational methods that are capable of fostering deep emotional understanding, especially empathy towards bullying victims [3].

Digital comics have emerged as a powerful and popular medium for delivering both entertainment and educational content. With their ability to combine narrative and visuals, comics can convey complex messages in an accessible and engaging way [4]. Webtoon, as one of the most popular comic platforms among teenagers, offers wide distribution and easy access. *Rough*, the

digital comic designed in this study, addresses bullying through visual storytelling tailored to the emotional and cognitive levels of adolescents. It seeks to function not only as a medium of entertainment but also as an educational tool that builds empathy and moral awareness [5].

Despite the potential of visual media, limited research has explored how visual storytelling elements within digital comics can enhance the delivery of moral or social issues. This study aims to fill that gap by analyzing how visual components—such as drawing style, character expressions, panel layout, and color tones—can improve the effectiveness of communication and promote empathy. By focusing on *Rough*, this research contributes to the development of effective visual communication strategies in educational contexts.

2. Method

This study employed the ADDIE development model as outlined by Dick and Carey (1996), which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation [6]. The focus of this study was specifically directed toward the design and development of visual communication elements. *Analysis*: Data collection through victim interviews and literature reviews on bullying, empathy, and visual media. *Design*: Scriptwriting, character design (semi-realistic style), tone selection (dark palette for angst), setting, and storyboard. *Development*: Visualization process involving sketching, panel layout, linework, coloring, and speech balloons using Clip Studio Paint. *Implementation*: The comic *Rough* was published on Webtoon Canvas, comprising 5 episodes and 140 panels. *Evaluation*: Expert validation (media and content) and Likert-scale user testing with 30 high school students.

3. Result and Discussions

3.1 Visual Storytelling in Digital Comics as a Medium for Social Issues

The *Rough* comic was designed with a strong emphasis on visuals that enhance readability and emotional impact. The semi-realistic art style and dark color palette matched the dramatic and angst-filled narrative. Character expressions clearly conveyed emotional depth, while panel compositions provided dynamic pacing.

3.1.1 Character Design and Emotional Expression

The visual design of characters plays a crucial role in communicating their personality, emotions, and social status to the reader. In visual storytelling, especially in comics, character appearance, including facial features, body posture, and outfit selection—is not merely decorative but deeply functional. Each visual element contributes to how readers interpret and emotionally engage with the character [7]. A well-crafted character design can immediately signal whether a character is timid, aggressive, kind, or dominant—allowing the reader to grasp relational dynamics without needing extensive dialogue or exposition.

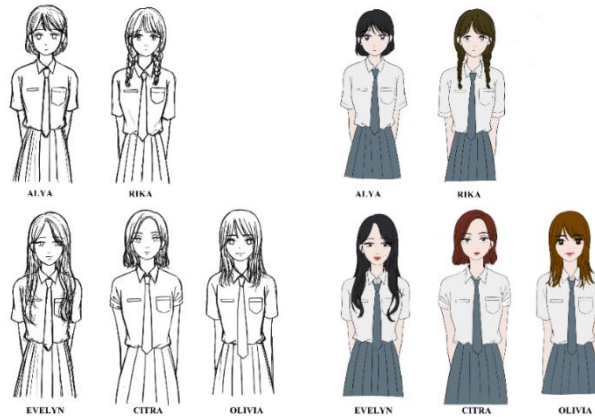


Figure 1. Characters on Webtoon *Rough* (2025)

In *Rough*, the protagonist Alya is visually designed to reflect vulnerability and emotional suppression. Her outfit consists of loose-fitting, neutral-colored clothing that blends into the background, suggesting a desire to remain unnoticed. Her body posture is inward and protective, with downward gazes and hunched shoulders. These visual cues are purposefully used to evoke empathy from readers and reinforce her role as a bullying victim. Over the course of the story, subtle changes in Alya’s expression and stance mirror her emotional journey, helping readers feel connected to her transformation.

Antagonists like Evelyn and her group are also designed with strong visual contrasts. Their confident body language, bold facial expressions, and trendy appearances create an immediate distinction between aggressor and victim. Through recurring visual motifs—such as Evelyn’s piercing gaze or domineering posture—the comic builds a consistent portrayal of social dominance. This dichotomy is important for storytelling because it positions characters in clearly defined moral spaces, allowing readers to form judgments and emotional reactions organically.

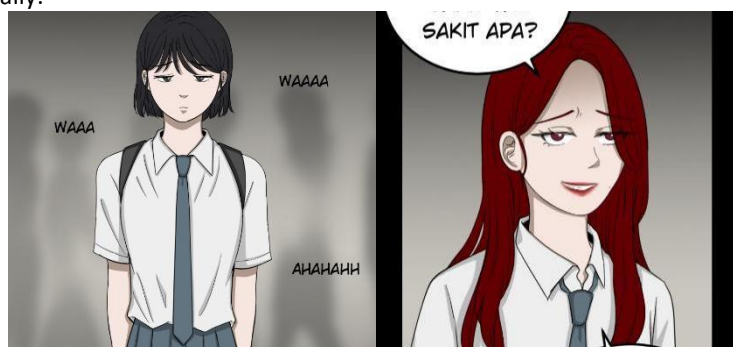


Figure 2. Protagonist and Antagonist on Webtoon *Rough* (2025)

The use of facial expressions and micro-expressions throughout the comic amplifies emotional engagement. Sadness, fear, rage, and guilt are rendered through expressive eyes, furrowed brows, trembling lips, and other nuanced details. These facial cues work as a visual language, bypassing textual explanation and

directly conveying emotional states to the reader. As a result, character design in *Rough* is not only aesthetic but narrative-driven.

3.1.2 Panel Composition and Narrative Rhythm

Panel layout and composition are fundamental to controlling the pacing and mood of a comic. In *Rough*, panel sizes and placements are deliberately varied to match the emotional intensity of each scene [2]. Wider panels are used to slow down time and emphasize moments of solitude or reflection, such as when Alya is seen sitting alone in the classroom. In contrast, narrow vertical panels depict fast-paced, high-stress moments, such as when she is chased or physically assaulted by her peers. This visual pacing regulates how the reader absorbs emotional and narrative information.

Panel transitions, known in comics theory as "closure" are also employed effectively to suggest the passage of time and psychological shifts [8]. For instance, a sequence showing Alya entering the school, then cutting to her being isolated in class, visually narrates the progression of her internal experience without needing explanatory text. This spatial arrangement of panels mimics cinematic techniques like cuts and transitions, allowing for sophisticated visual storytelling that feels fluid and immersive.

Furthermore, the layout encourages active reader participation in interpreting the scenes. When panel sequences show a bully reaching out aggressively in one frame and Alya's startled expression in the next, the reader instinctively connects the cause and effect. This form of visual causality builds reader empathy and understanding through inferred storytelling rather than exposition. Thus, panel composition in *Rough* plays a crucial role not just in visual organization but in constructing a psychologically resonant narrative structure.

3.1.3 Color and Tone as Emotional Signifiers

Color plays a central role in setting the emotional tone of each episode in *Rough*. A muted, dark palette dominates scenes involving bullying, contributing to a somber and oppressive mood. Shades of blue, gray, and deep red are used to reflect the emotional weight carried by the characters, particularly Alya. These colors are not arbitrary; they are intentionally chosen to evoke feelings of sadness, fear, and anxiety, reinforcing the emotional atmosphere of the scene [7].

The coloring process plays a vital role in digital comic production, as it serves to establish emotional tone, emphasize visual focus, and strengthen non-verbal narrative delivery. In the Webtoon comic *Rough*, coloring was carried out after the sketching and inking stages, using Clip Studio Paint, a software that supports multi-layer workflows and flexible blending modes.

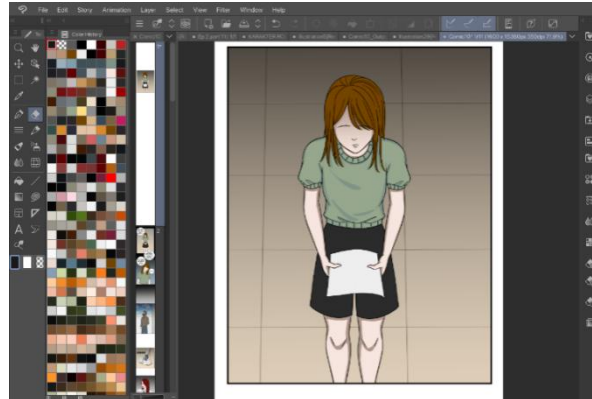


Figure3. Coloring process in the Webtoon comic *Rough* (2025)

The coloring approach follows a tone-based storytelling strategy, where color palettes are selected to match the emotional atmosphere and intensity of each scene. In bullying scenes, the color palette consists of dark and muted tones such as deep blues, grays, and purplish browns to convey depression, fear, and isolation. Gradient shading techniques were applied to enhance dramatic lighting effects, especially on facial expressions and classroom backgrounds, intensifying the overall mood.



Figure4. Reference of Color Palette (Pinterest, 2025)

In contrast, scenes that represent safety or moments of relief such as when Alya finds a supportive classmate shift toward softer, warmer colors like beige or pale yellow. This contrast in palettes provides emotional relief to the reader and also marks the character's psychological progress. It visually communicates hope and emotional transitions, aiding the reader in understanding subtle shifts in the story's tone and pace.

Additionally, lighting is used strategically to highlight emotional tension. Harsh shadows often surround scenes of confrontation, symbolizing psychological entrapment or danger. Meanwhile, scenes that suggest emotional clarity or decision-making are often bathed in more balanced lighting. By manipulating light and color, the comic not only enhances its visual aesthetics but also deepens its emotional storytelling, enabling readers to feel the emotional temperature of each scene instinctively.

3.1.4 Symbolic Visual Motifs and Setting

Symbolic visuals are subtly embedded throughout *Rough* to enrich the narrative with layers of meaning. For example, repeated imagery of school hallways,

empty classrooms, or rain falling outside a window function as metaphors for isolation and vulnerability. These visual motifs reinforce the thematic core of the story without relying on dialogue. Readers pick up on these patterns and begin to associate certain settings or visuals with emotional cues, enhancing their emotional investment in the story.

The school setting itself is rendered with a high degree of familiarity to Indonesian students, uniforms, classroom layouts, and social spaces are all depicted realistically. This localization strengthens reader immersion, making the story feel more immediate and relevant. When the bullying scenes unfold in recognizable locations such as corridors or schoolyards, the reader is more likely to empathize, as the settings mirror their own environments [9]. This familiarity transforms the comic from a fictional experience to a relatable one.

Objects within the setting are also employed symbolically. For instance, a broken name tag, a scattered notebook, or an erased drawing are not just props but narrative tools that symbolize destruction of identity, psychological distress, or broken self-esteem. These details invite the reader to engage in interpretive reading, where meaning is co-constructed visually [7]. Thus, setting and symbolism work together to enhance both the realism and emotional depth of the narrative.

3.2 Visual Elements and Teenagers' Awareness of Bullying Issues

3.2.1 Validation and Reader Response

Validation by subject matter experts and direct feedback from teenage readers both played key roles in evaluating the effectiveness of the comic's visual elements in raising awareness of bullying issues. Media validation conducted by an animation expert resulted in a score of 93.66%, with a notable emphasis on the strength of visual storytelling. The content was also reviewed by a psychology expert, who gave it a 94% score, emphasizing the relevance and emotional resonance of the comic.

The media expert praised the comic's ability to communicate emotional tone through character design, color, and panel layout. Suggestions included minor improvements to hand gestures and scene clarity, which were implemented and led to a more impactful presentation of key moments. These changes ensured that emotional cues were conveyed more strongly to readers.

The psychology expert further emphasized that Alya's visual transformation throughout the story mirrored psychological stages of trauma and recovery. From posture and expression to coloring and setting, the visual elements reflected the inner growth of the protagonist. This alignment between visual design and emotional narrative was seen as a valuable approach for educating teens about the psychological effects of bullying [5].

In the reader testing phase, 30 tenth-grade students were surveyed using a Likert-scale questionnaire. Results showed that 93.33% of respondents found the story easy to follow, 93.33% said it helped them better understand bullying victims, and 93.33% felt the message was clearly delivered. The average effectiveness score reached 89.64%, indicating strong reader engagement and comprehension.

These findings confirm that visual elements, when strategically designed can function beyond aesthetic appeal. They act as facilitators of awareness, helping teenagers emotionally and cognitively process the complex topic of bullying through a medium they enjoy and understand.

3.2.2 Emotional Impact to Reader

Beyond comprehension and awareness, the emotional impact of the comic was evident in the readers' reflections and feedback. Many students expressed a strong emotional connection to Alya's experiences, particularly during scenes of isolation, public shaming, and inner conflict. This emotional resonance is essential not only in fostering awareness but also in cultivating empathy a key educational goal of this project.

Visual storytelling techniques such as close-up panels, expressive facial features, and dynamic lighting contributed greatly to these emotional responses. Students reported feeling "angry," "sad," and "worried" while reading key bullying scenes. These reactions suggest that the comic successfully brought readers closer to the emotional experiences of a bullying victim.

The strategic use of color and lighting further intensified the emotional tone. Muted and cold colors dominated moments of tension, while warmer hues were used in scenes of support and resolution. Several students mentioned feeling "relieved" when the story transitioned to brighter scenes, showing how visual mood can guide emotional interpretation.

Some students also shared that the comic reminded them of real-life situations involving themselves or their friends. This level of personal identification indicates that the comic succeeded in creating a reflective experience. By seeing themselves or their peers in the characters, readers were prompted to re-evaluate their own behavior and social environments.

In conclusion, the emotional response generated by the comic's visual narrative went beyond information delivery. It created an immersive and empathetic experience, which is essential in shifting teenage perspectives on bullying. Through visual empathy, the comic *Rough* helped raise not only awareness but also emotional intelligence among its readers.

Conclusions

The visualization in *Rough* digital comic effectively communicates the issue of bullying to teenagers in a way that is emotionally engaging and easily understood. Visual style, panel composition, character expression, and color tone all significantly contribute to building atmosphere and reinforcing the moral message. Expert validation and user testing indicate strong effectiveness. These results show that well-designed visual communication strategies can be a powerful educational tool. Future studies may explore the long-term impact of visually-based educational comics or develop print and motion comic adaptations for broader use.

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