

DEVELOPMENT OF WEB PLATFORM: A DIGITAL SOLUTION FOR SCHOOL BULLYING PREVENTION AND INTERVENTION

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Abstract

This study designed and developed the Berlabu web platform as an interactive digital tool for preventing and addressing bullying in schools. Using the Design-Based Research (DBR) method, the study followed four stages: analysis, design, development, and evaluation. Expert validation from educational technology practitioners, psychologists, and educators resulted in an average score of 3.63, placing the platform in the "very good" category. Trials with elementary school students showed that the platform was easy to use, receiving a 3.6 rating in the "very good" category. Interactive features such as Ask AI and educational videos enhanced students' understanding, while the Report ID feature provided a sense of security in reporting bullying. This is because Berlabu integrates a user-friendly interface, engaging educational tools, and a secure, anonymous reporting system, making it an effective digital solution for bullying prevention and intervention. The platform positively impacts schools by raising students' awareness of bullying, creating a safe space for reporting incidents, and supporting character education through counselling and digital learning.

Keywords: Berlabu web platform, Bullying intervention, Bullying prevention, Digital education, School.

1. Introduction

Bullying remains a persistent issue in schools, negatively affecting students' psychological well-being, academic performance, and social interactions [1]. Traditional prevention strategies, such as teacher-led interventions and school policies, often struggle to provide real-time support and anonymous reporting mechanisms [2-4]. As digital technology becomes an integral part of education, web-based platforms offer innovative solutions for improving bullying prevention and intervention strategies [5-10]. Several studies demonstrated how web platforms enhance bullying prevention and intervention [11-13]. These platforms significantly improve awareness, reporting behavior, and student engagement in bullying prevention programs.

This study developed and evaluated Berlabu, an interactive web platform designed to prevent and address bullying in schools using Design-Based Research (DBR). The research follows the stages of needs analysis, design, development, and evaluation. Berlabu ("Berani Lapor Bully") is a digital platform providing a safe space for students, teachers, and parents to report and handle bullying cases. Key features include educational modules, discussion forums, and a reporting system connecting all stakeholders [2]. Through technology integration and early detection mechanisms, Berlabu minimizes the negative impacts of bullying and fosters collaborative school involvement [1]. The novelty of Berlabu lies in: (i) A holistic, school-wide approach to bullying prevention; (ii) A user-centred design focusing on education and engagement; and (iii) Integrated reporting and early intervention features for immediate action.

2. Literature Review

Figure 1 illustrates the key relationships in developing a web-based platform for school bullying prevention and intervention. At its core, the web-based platform integrates prevention and intervention strategies, enabling students and educators to identify, report, and address bullying effectively. Key components include: (i) Web platform features – enhancing system usability and accessibility; (ii) Educational impact – shaping student character, fostering social awareness, and improving problem-solving skills; and (iii) Technology integration – utilizing AI, blockchain, and big data to enhance bullying detection, reporting, and prevention.

This interconnected system ensures a comprehensive, technology-driven approach to combating bullying in schools. These strategies have been well-documented in previous reports [14-19].

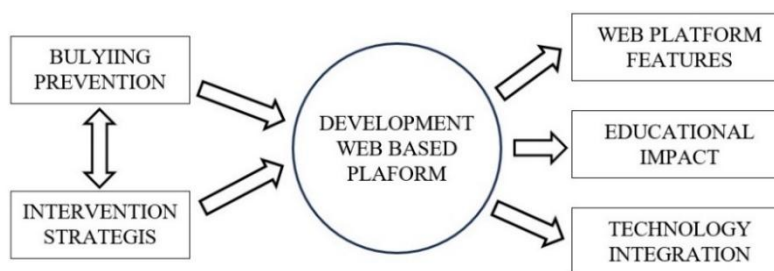


Fig. 1. The relationship between web-based platforms and anti bullying education.

3. Method

This study employed a Design-Based Research (DBR) method with four stages: analysis, design, development, and evaluation. The analysis phase identified application requirements, while the development phase involved validation by educational technology experts, psychologists, and education practitioners. Additionally, a limited trial was conducted in an elementary school in Surabaya to assess usability and effectiveness.

4. Results and Discussion

Figure 2 illustrates Berlabu's core components, including: (i) Educational Features (interactive materials, "Ask AI," and "Movie Time"); (ii) Bullying Task Force Structure, listing trained anti-bullying agents; (iii) Anonymous Reporting System, ensuring safe student participation; and (iv) Social Emotional Space, offering self-reflection and emotional support. The Berlabu web platform is an interactive digital solution for bullying prevention and intervention in schools. It offers key features such as educational modules, discussion forums, anti-bullying task force listings, self-assessments, emotional support spaces, and an anonymous reporting system. The platform integrates technology and social engagement to foster a safer school environment [2]. Berlabu's design aligns with research on digital anti-bullying interventions, emphasizing structured content, anonymous reporting, and interactive learning [20-22]. These components enhance awareness, engagement, and response mechanisms [23-25].

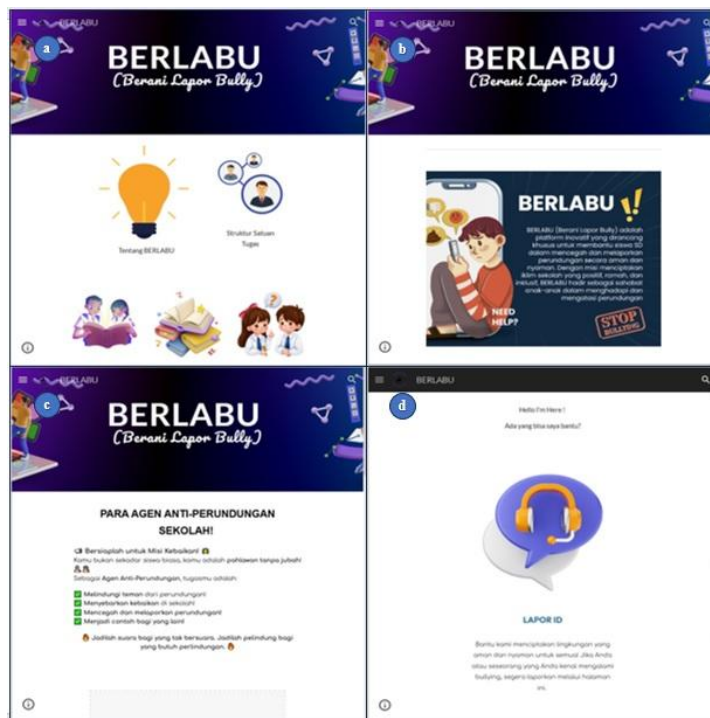


Fig. 2. Berlabu web platform: (a) Menu of material on changes in the state of matter, (b) About Berlabu, (c) List of bullying agent, and (d) Report id.

Several validation and user trials were conducted (Tables 1 and 2): (i) In Table 1, expert validation (educational technology, psychology, and education practitioners) scored an average of 3.63 (Very Good), confirming Berlabu's effectiveness; and (ii) In Table 2, student trials showed an average rating of 3.6 (Very Good) for usability, security, and educational content. Students reported increased awareness and confidence in reporting bullying anonymously.

Key findings were obtained: (i) User-friendly design and clear navigation enhance engagement [26-28]; (ii) AI integration and interactive tools personalize learning [29-33]; and (iii) Anonymity features encourage proactive reporting [34-40]. Overall, Berlabu successfully combines educational resources, AI-driven learning, and social-emotional support to create a safer and more participatory school environment [41-47].

Table 1. Berlabu web platform validation result.

Validation Test	Average Score	Category
Educational expert	3.90	Very good
Psychology expert	3.70	Very good
Education practitioner	3.30	Very good
Average	3.63	Very good

Table 2. Result of trial of anchoring to elementary school students.

Aspect	Average Score	Category
Appearance and navigation	3.8	Very good
Educational video content	3.6	Very good
Ask AI feature	3.7	Very good
Clarity of material and language	3.5	Very good
Reporter security and anonymity	3.4	Very good
Average	3.6	Very good

5. Conclusion

The web platform is an effective digital solution for bullying prevention and intervention in schools. It integrates educational content, interactive AI-driven features, an anonymous reporting system, and social-emotional support, creating a safe and engaging environment for students, teachers, and parents. Expert validation and student trials confirm its usability, effectiveness, and impact on bullying awareness and reporting. By combining technology and education, Berlabu empowers students to recognize, report, and prevent bullying, fostering a safer school culture. This platform serves as a scalable model for implementing anti-bullying initiatives in digital learning environments.

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