

Implementation of EdTech SB-TraFo App 5.0 for Bullying Prevention and Student Character Strengthening at SMAN 6 Bengkulu Tengah

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Abstract

Background: Bullying is a significant issue in Indonesian schools, including SMAN 6 Bengkulu Tengah, with 32 recorded cases in 2024. This indicates a weakness in character education and the limited use of technology to address the problem. The student body's composition, with a majority of male students and parents working long hours, exacerbates the issue.

Aims: This community service program aims to enhance anti-bullying awareness and strengthen students' character through the Stepwise Behavioral Transformation (SB-Trafo) App. The program seeks to provide a proactive and transformative solution using educational technology (EdTech) to support the gradual behavioral transformation of students.

Methods: The program consisted of five stages: (1) preparation and socialization, (2) character strengthening and anti-bullying classes, (3) SB-Trafo App training, (4) digital character literacy workshops for teachers and parents, and (5) establishment of the School Character Care Team (TSPK) for sustainability. A participatory and transformative approach actively engaged students, teachers, and parents.

Results: The outcomes demonstrated significant improvements: students' understanding of core character values increased by 84%, participation in digital reflection activities reached 82%, and bullying cases decreased by 37% within three months. Additionally, 90% of teachers and parents gained competence in digital character literacy, and over 80% of students used the SB-Trafo App consistently.

Conclusion: The program successfully created a more empathetic, collaborative, and safe school environment. The integration of behavior-reflective EdTech proved effective in supporting sustainable character education and fostering synergy between technology, education, and human values in developing resilient young generations for the digital era.

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INTRODUCTION

Education serves as the main instrument in shaping a nation's generation that is not only academically intelligent but also possesses integrity, morality, and strong character (Ajeng, 2024; Fauzi & Irawan, 2025). In Indonesia, character education has become a fundamental aspect of the national education system as mandated in Law No. 20 of 2003. Nevertheless, the practical implementation of character education in schools still faces significant challenges, particularly in ensuring the internalization of empathy, self-control, and social responsibility among secondary school students (Anisah, 2023; Sihabudin & Kuswara, 2025). These weaknesses create conditions in which negative social behaviors may develop and persist. Educational transformation in the digital

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era requires schools to integrate technological innovation with character development programs (Prihatin & Sutangsa, 2025).

One concrete manifestation of insufficient character education is the increasing incidence of bullying, both in conventional forms (physical and verbal) and in digital spaces through social media (Drakatos et al., 2023; Sari, 2023). Bullying behaviors reflect deficiencies in social awareness, empathy, and emotional regulation, key components of character education that are often underdeveloped before targeted interventions are implemented (Hayyin et al., 2025; Jenkins et al., 2016). This situation was clearly observed at SMAN 6 Bengkulu Tengah as the partner school. Based on counseling teacher' (BK) reports and school records, between January and December 2024 the school documented 32 bullying cases, consisting of 18 verbal, 9 physical, and 5 cyberbullying incidents. These recurring cases indicate that bullying at the partner school was not an incidental issue, but rather a structural problem closely related to weak character internalization prior to the program.

The condition at SMAN 6 Bengkulu Tengah was further influenced by student demographic characteristics. The student population is dominated by male students (68%), a group that tends to show higher levels of dominant and aggressive behavior when socio-emotional regulation skills are insufficiently developed (Dresden et al., 2018; Mutiakandi & Sari, 2024). From a sociological perspective, male adolescents are more likely to engage in competitive and confrontational interactions, particularly in environments where character education does not systematically address empathy and conflict management skills (Godzierz et al., 2024; Smith & Rose, 2011). Such conditions increase the risk of persistent and systemic bullying within the school environment (Cosma et al., 2022; H. R. Puspitasari et al., 2025).

In addition, the socioeconomic background of students' families also contributed to the partner's problems. Most parents work as plantation and factory laborers with long working hours and relatively low educational attainment, which limits their ability to provide intensive moral guidance and behavioral supervision at home (Heryanto, 2017; Kundu et al., 2024). Parents with limited time and educational resources often face difficulties in consistently supporting their children's character development (Puhii et al., 2024). Consequently, the school becomes the primary environment for character formation. However, prior to this community service program, SMAN 6 Bengkulu Tengah lacked a structured, preventive, and sustainable character education system, causing behavioral deviations such as bullying to continue and escalate (Menesini & Salmivalli, 2017; Unang et al., 2025).

Another critical issue faced by the partner school is the suboptimal use of technology for character education. Although students were highly engaged with digital media, technology was mainly used for entertainment rather than as a tool to foster character values or monitor behavioral development. Teachers also do not yet have access to digital systems that could support early detection of behavioral risks or facilitate collaboration with parents. This gap is particularly problematic given the evidence that educational technology can enhance students' self-awareness, emotional control, and reflective learning when applied purposefully (Abas et al., 2025; Giglio et al., 2018; Hariyono et al., 2024; Syukri et al., 2024). Moreover, digital storytelling and reflective environments have been shown to help students better understand social issues such as bullying and their consequences.

Given these concrete challenges faced by SMAN 6 Bengkulu Tengah, this community service program was designed as a dedicated response to the partner's needs rather than a purely theoretical initiative. The program integrates character education, experiential learning, and a stepwise behavioral transformation-based EdTech application to address bullying and strengthen students' socio-emotional competence. By involving students, teachers, and parents in a structured and reflective process, the program aims to provide a practical and sustainable solution tailored to the real conditions of the partner school.

METHOD

The implementation of this community service program focused on addressing two main interrelated issues at SMAN 6 Bengkulu Tengah, namely:

1. The low internalization of character values and the prevalence of bullying cases (in the field of character and socio-emotional education), and

2. The suboptimal utilization of technology to support character building and social awareness (in the field of digital literacy and social behavior education).

The activities were carried out in stages during the service period using a participatory-based transformation approach, a change strategy that involves partners as active participants. The implementation consists of five major phases:

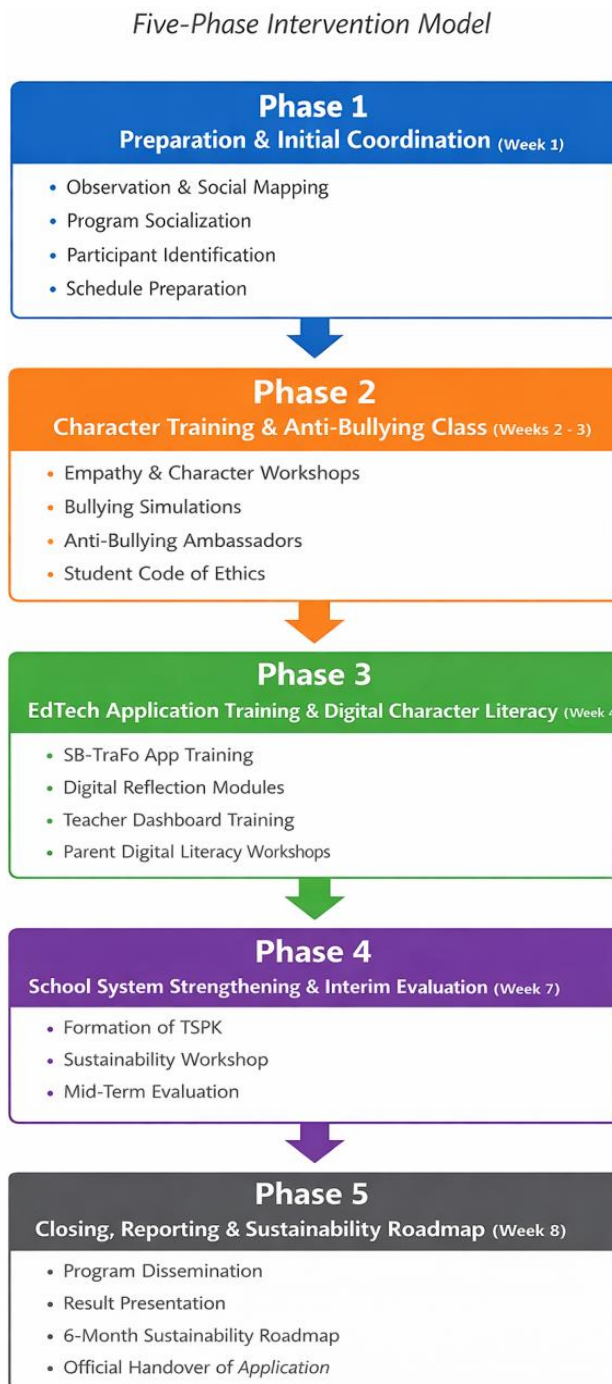


Figure 1. Five-Phase Intervention Model

This community service program was implemented at SMAN 6 Bengkulu Tengah, Bengkulu Province, Indonesia, from January to March 2025. The program was conducted over an eight-week period and adopted a participatory transformation approach that actively involved students, teachers, and parents in every stage of the intervention.

The implementation began with a preparation phase aimed at identifying the main problems related to bullying behaviors and character education within the school. Initial observations and social

mapping were conducted in collaboration with the school principal and counseling teachers to understand the characteristics of students and the patterns of bullying incidents occurring in the school environment. During this stage, the service team also conducted program socialization sessions involving teachers, students, and parents to introduce the objectives, expected benefits, and implementation stages of the program. Students from grades X and XI were identified as the primary participants, and an activity schedule was arranged to align with the school's academic calendar.

The second phase focused on strengthening character education and anti-bullying awareness among students. Workshops on empathy, social responsibility, honesty, and tolerance were conducted using experiential learning methods. Students participated in role-play simulations and group discussions based on real bullying cases. These activities encouraged students to reflect on their social interactions and develop greater awareness of the consequences of bullying behavior. In addition, anti-bullying student ambassadors were selected from each class to serve as peer role models and agents of behavioral change within the school.

The third phase involved the introduction and training of the Stepwise Behavioral Transformation (SB-TraFo) App. During this stage, students created digital reflection accounts and participated in guided training sessions on how to use the application modules. The application includes interactive simulations, reflective journals, and automated behavioral feedback designed to support students in evaluating their attitudes and social interactions. Teachers were also trained to use the monitoring dashboard to track student reflection data and identify early signs of behavioral risks. Parents were involved through digital literacy workshops that introduced strategies for guiding children's responsible use of technology at home.

The fourth phase focused on strengthening the school system to ensure program sustainability. A School Character Care Team (Tim Sahabat Pendidikan Karakter/TSPK) was established, consisting of teachers, homeroom advisors, and student representatives. This team was responsible for monitoring character development activities and facilitating regular reflection sessions among students. Mid-program evaluations were conducted through questionnaires, group discussions, and analysis of digital activity data from the SB-TraFo App.

The final phase involved program evaluation, reporting, and the development of a sustainability roadmap. Program outcomes were presented in an open school forum involving teachers and parents. The SB-TraFo App and its operational guidelines were officially handed over to the school to ensure continued use beyond the program period. A six-month character development roadmap was also formulated to guide the implementation of reflective activities and behavioral monitoring within the school.

Location and Time of Implementation

This community service program was conducted at SMAN 06 Bengkulu Tengah, Bengkulu Province, Indonesia, from January to March 2025. The activities were implemented over an eight-week period, aligned with the school's academic schedule to ensure active participation from students, teachers, and parents.

Participants

The program involved multiple stakeholders as active participants:

1. Students: 100 students from grades X and XI
2. Teachers: 12 teachers (including counseling teachers and homeroom teachers)
3. Parents: 60 parents/guardians
4. School management: Principal and vice-principal representatives

Through involvement from the beginning to the end of the program, the partner was encouraged to integrate this initiative into a sustainable school character education system.

Program Evaluation & Sustainability

Evaluation Approaches:

1. Formative (During Implementation):
 - a. Observation of class dynamics
 - b. Character value comprehension questionnaires
 - c. EdTech app usage data (active time, completed modules)
2. Summative (End of Program):
 - a. Tests of understanding of character values
 - b. Written reflections and student interviews
 - c. Teacher and principal evaluation reports
3. Digital Tracking:
 - a. Each student has an app account with usage history.
 - b. Data were analyzed to identify behavior change trends.

Program Sustainability:

1. The application was handed over to the school free of charge with complete guidelines.
2. The internal facilitator team (TSPK) will receive SOPs for continued implementation.
3. Lecturers and the service team maintained post-program communication (remote monitoring for 3 months).

Table 1. Team Roles and Responsibilities

Name	Role	Responsibilities
Team Leader	Academic lead and module designer	Develop training content, supervise implementation, and monitor program progress
Member 1	EdTech training coordinator	Design student and teacher training, guide app use
Member 2	Reflection and evaluation facilitator	Lead group discussions, evaluate social impact, analyze qualitative data
Student 1 & 2	Field facilitator assistants	Guide student groups, assist data input and observation
Student 3	Application operator and documentation officer	Prepare training tools, manage student accounts, and compile app usage data

Potential Credit Recognition (SKS) for Students

Student involvement in this program is designed to be recognized as off-campus learning, following the *Merdeka Belajar – Kampus Merdeka (MBKM)* policy.

Table 2. Student Activity Mapping to MBKM Program Types and Credit Recognition (SKS)

Student Activity	MBKM Program Type	Recognized Credits (SKS)
Student training facilitation	Technology-Based Thematic Community Service (KKN)	3 SKS
Assistance in app usage	Community-Based Social Project	2 SKS
Documentation, evaluation, field reflection	Applied Independent Project	2 SKS
Writing reports and scientific articles	Collaborative Research	1 SKS

Students were also encouraged to compile a portfolio-based reflection report, which will serve as part of the academic assessment by the supervising lecturer.

RESULTS AND DISCUSSION

Results

The community service program produced significant improvements in three main aspects: character development, educational technology utilization, and the strengthening of the school's internal system. Before the program was implemented, the school recorded 32 bullying cases in one academic year. After the intervention, the number of reported cases decreased to 20 incidents within three months, representing a reduction of approximately 37%. A more detailed analysis showed that the decrease did not occur uniformly across all types of bullying. Verbal bullying experienced the most significant decline, decreasing from 18 cases to 10 cases. Physical bullying cases decreased from 9 to 6 cases, while cyberbullying incidents showed a smaller reduction from 5 to 4 cases.

Guidance and counseling teachers reported that the monitoring dashboard of the SB-TraFo App helped them identify early behavioral indicators through students' reflection journals and emotional self-assessments. This digital monitoring system enabled teachers to conduct early interventions through counseling sessions and reflective discussions before conflicts escalated into more serious bullying incidents. In addition to reducing bullying behavior, the program also improved students' understanding of character values. Based on pre-test and post-test evaluations, students' comprehension of five core character values, empathy, responsibility, honesty, tolerance, and courage to reject bullying, increased by 84%. Students also demonstrated stronger participation in reflective discussions and peer mentoring activities.

The integration of the SB-TraFo App significantly enhanced the use of educational technology in the school. Approximately 80% of students consistently used the application modules during the program period. Through these modules, students regularly completed digital reflection journals and participated in simulations designed to strengthen emotional regulation and conflict resolution skills. Furthermore, the program successfully strengthened the institutional support system for character education. The School Character Care Team (TSPK) was established and began conducting routine reflection activities and monitoring behavioral reports. Teacher and parent participation also increased significantly, with 90% of workshop participants demonstrating improved understanding of digital character literacy and responsible technology use.

Aspect 1 - Strengthening Character and Anti-Bullying Awareness

Initial Problem:

Before the program, the school faced a high incidence of bullying (32 cases per year), low empathy among students, and the absence of a systematic character-building mechanism. The existing guidance process was reactive and not yet integrated into the learning activities.

Implementation Steps:

1. Character Reflection and Empathy Workshop
 - a. Attended by 100 students from grades X and XI.
 - b. Covered topics including empathy, social responsibility, tolerance, honesty, and courage to reject bullying.
 - c. Included bullying case role-play sessions and a self-reflection quiz.
2. Anti-Bullying Class and Social Simulation
 - a. Implemented using experiential learning and visual storytelling methods.
 - b. Students analyzed real case videos, held discussions, and developed a *Student Social Code of Ethics*.
3. Formation of Anti-Bullying Student Ambassadors
 - a. Fifteen students were selected as character ambassadors to serve as role models and behavior change agents in their respective classes.

Results and Outcomes:

1. Student understanding of character values increased by 84%, based on pre- and post-test results.
2. Bullying cases decreased by 37% within three months after the training (from 32 to 20 cases).
3. A reflective culture emerged, students began conducting weekly group discussions on social experiences and conflict resolution.
4. A *social safe zone* was established within the school, agreed upon by all students and teachers.

Aspect 2 - Optimization of Educational Technology (EdTech) for Character Development

Initial Problem:

Technology use in the school was mainly limited to entertainment and social media. Teachers lacked a digital system to monitor student behavior, and there was no integration between technology and character education.

Implementation Steps:

1. SB-TraFo App Training for Students
 - a. Each student created an account and accessed the *Stepwise Behavioral Transformation* modules, which included social simulations, digital reflection journals, and AI-generated feedback.
 - b. Training was conducted over two weeks, facilitated by the community service team and counseling teachers.
2. Teacher Training on Monitoring Dashboard

Teachers and homeroom advisors learned how to interpret digital reflection data, identify behavioral indicators, and perform early interventions through the reflective messaging feature.
3. Digital Literacy Workshop for Teachers and Parents

Focused on digital parenting, online interaction ethics, and strategies to guide children in using educational technology responsibly.

Results and Outcomes:

1. 80% of students actively used the SB-TraFo App consistently throughout the program.
2. Five key positive behavioral indicators improved significantly: (1) Increased empathy, (2) Stable emotional control, (3) Non-violent communication, (4) Social responsibility, and (5) Digital honesty.
3. 90% of teachers and parents understood digital character literacy concepts and implemented three home monitoring strategies: screen-time supervision, weekly reflection, and online activity control.
4. Publication of a *Student Digital Reflection Report* and an *EdTech Application User Guide*, both of which were registered for intellectual property (HKI) and assigned ISBNs.

Through this technological application, the school's character development system became more data-driven, interactive, and sustainable.

Aspect 3 - Strengthening the School System and Program Sustainability

Initial Problem:

There was no internal school structure dedicated to sustaining character education. Anti-bullying efforts were still temporary and depended solely on the counseling teachers' initiatives.

Implementation Steps:

1. Formation of the School Character Care Team (TSPK)
 - a. Consisting of 12 members: 5 teachers, 4 students, and 3 homeroom advisors.
 - b. The team received training in leadership, empathetic communication, and management of character education activities.
2. School Change Facilitator Workshop
 - a. Developed a six-month roadmap for strengthening school character.
 - b. Established Standard Operating Procedures (SOP) for reflective, EdTech-based activities.
3. Program Evaluation and Dissemination
 - a. Conducted an open school forum involving parents and the community.
 - b. Program results were published through the University of Bengkulu's LPPM channel and local media (TVRI and RRI).

Results and Outcomes:

1. Formation of an active *School Character Care Team (TSPK)* managing weekly reflection activities and monitoring app usage.
2. Development of a six-month *School Character Roadmap* to ensure sustainability.
3. Increased participation of teachers and students in social reflection activities, with an average follow-up attendance rate of 92%.
4. Strengthened collaboration between school and family in maintaining a safe and inclusive school environment

Table 3. Recapitulation of Activity Outcomes

No	Program Aspect	Implemented Solution	Target Indicators (Methods)	Achieved Results (Results)	Achievement Status
1	Character & Anti-Bullying Strengthening	Empathy workshops, social simulations, anti-bullying ambassadors	≥ 80% of students understand at least 5 core character values; ≥ 30% reduction in bullying cases within 3 months	Character understanding increased by 84% ; bullying cases reduced by 37%	Target achieved
2	Educational Technology Utilization (EdTech)	SB-TraFo App training, teacher dashboard, digital literacy workshops	≥ 80% of students actively use at least 4 app modules; ≥ 90% of teachers and parents understand digital character literacy	80% of students actively used the app; 90% of teachers and parents demonstrated digital character literacy competence; 5 positive behavioral indicators improved	Target achieved
3	School System Strengthening	Formation of TSPK, character roadmap, sustainability forum	Establishment of an active School Character Care Team (TSPK); routine monitoring and reporting system	Active TSPK established; monthly character monitoring reports implemented; ongoing reflection activities sustained	Target achieved

Program Impact and Sustainability

Overall, this community service program successfully addressed the partner's core problems through an integrated approach combining technology and character development.

After the program concluded:

1. The school now has a sustainable digital character reflection platform.
2. The *TSPK* actively conducts routine activities, including behavioral evaluations and mentoring for new students.
3. Counseling teachers and homeroom advisors are now able to perform data-driven early interventions instead of relying solely on manual reports.

The SB-TraFo App has become a permanent educational tool at the school and has been recommended for adoption by other partner schools in the Bengkulu Tengah region.

Discussion

The findings of this program demonstrate that integrating character education with technology-supported reflective learning can effectively reduce bullying behaviors among students. The observed decrease in bullying cases suggests that the intervention addressed key psychological and social factors associated with aggressive behavior, particularly empathy deficits and poor emotional regulation. One important factor contributing to the behavioral change is the reflective learning environment provided by the SB-TraFo App. Through digital reflection journals and interactive simulations, students were encouraged to evaluate their own attitudes and consider the impact of their actions on others. Previous research indicates that reflective learning environments can significantly improve adolescents' moral awareness and emotional regulation. By providing continuous feedback and opportunities for self-evaluation, the application helps students develop greater social responsibility.

Another contributing factor was the establishment of the School Character Care Team (*TSPK*). The presence of peer ambassadors and student mentors creates a positive social influence within the school community. According to Menesini & Salmivalli (2017), peer-based interventions are particularly effective in transforming social norms related to bullying behavior. When students observe their peers actively promoting empathy and respect, a form of constructive social pressure emerges that discourages aggressive actions. Furthermore, the participatory approach adopted in this program strengthens collaboration among students, teachers, and parents. Character education initiatives are more effective when supported by multiple stakeholders rather than relying solely on classroom instruction (W. Puspitasari et al., 2025). The involvement of parents in digital literacy workshops also helped extend character monitoring beyond the school environment, reinforcing consistent behavioral guidance at home.

Overall, the success of this program indicates that a holistic approach combining experiential learning, peer influence, and educational technology can produce sustainable improvements in school climate. The integration of digital monitoring tools with character education activities allows schools to implement more proactive and data-driven strategies for bullying prevention. These findings are consistent with previous research showing that bullying behavior is strongly associated with deficits in social awareness and self-control. Jenkins et al. (2016) and Hayyin et al. (2025) emphasize that low empathy and poor emotional regulation are key predictors of aggressive behavior among adolescents. Similarly, Menesini & Salmivalli (2017) argue that preventive, character-based interventions are more effective than punitive approaches in reducing sustained bullying. The significant decline in bullying cases in this program supports these conclusions and reinforces the central role of character education in bullying prevention.

The improvement in students' character understanding also aligns with studies highlighting the effectiveness of experiential and reflective learning. Silva et al. (2018) and Muhammad & Dzulfikar (2024) found that role-play, social simulations, and guided reflection contribute to deeper moral awareness and prosocial behavior. However, the present program extends these findings by integrating reflective learning with a digital platform that enables continuous self-assessment and

feedback. The main novelty of this program lies in the integration of character education with a stepwise, data-driven EdTech system. Previous studies have shown that digital tools can enhance self-awareness and emotional control (Abas et al., 2025; Hariyono et al., 2024), yet many interventions remain limited to content delivery or short-term activities. In contrast, the SB-TraFo App functions not only as a learning medium but also as a behavioral reflection and monitoring system involving students, teachers, and parents simultaneously. This multi-stakeholder, technology-assisted approach differentiates the program from earlier character education or anti-bullying initiatives that rely primarily on face-to-face sessions.

Furthermore, the establishment of the School Character Care Team (TSPK) addresses a common limitation identified in previous studies, namely, the lack of sustainability and institutional ownership in anti-bullying programs (W. Puspitasari et al., 2025). By embedding character monitoring and reflection within the school system, this program demonstrates that sustainable behavioral change requires both individual-level transformation and organizational support. Taken together, these findings indicate that a holistic intervention combining character education, experiential learning, and educational technology can produce meaningful and sustainable improvements in school climate. These results provide a strong foundation for discussing the practical and theoretical implications of integrating EdTech into character education and bullying prevention efforts.

Implications

1. Practical Implications:
 - a. The successful implementation of the SB-TraFo App 5.0 demonstrates the potential of integrating educational technology with character education to address bullying and enhance students' social-emotional competence.
 - b. The program's holistic approach, involving student empowerment, teacher training, and system reinforcement, can be replicated in other schools.
 - c. The establishment of the School Character Care Team (TSPK) ensures the sustainability of character development efforts.
2. Theoretical Implications:
 - a. This study supports the idea that technology can be effectively used to promote positive behavior change and character development in students.
 - b. The findings contribute to the growing body of literature on the use of EdTech in education, particularly in the context of character education and bullying prevention.

Research Contribution

1. This study provides empirical evidence of the effectiveness of a specific EdTech intervention (SB-TraFo App) in reducing bullying and promoting character development in a school setting.
2. The research identifies key factors that contribute to the success of such interventions, including a holistic approach, active stakeholder involvement, and a focus on sustainability.
3. The findings can inform the design and implementation of similar programs in other schools and communities.

Limitations

1. The study was conducted in a single school, which may limit the generalizability of the findings.
2. The evaluation of the program's impact relied on self-report data, which may be subject to bias.

3. The long-term effects of the program on students' behavior and character development are not yet known.

Suggestions

1. Future research should explore the effectiveness of the SB-TraFo App in other schools and communities, with diverse student populations.
2. Longitudinal studies are needed to assess the long-term impact of the program on students' behavior and character development.
3. Further research should investigate the factors that contribute to the sustainability of EdTech-based character education programs.
4. Schools should consider adopting a holistic approach to character education that integrates technology, teacher training, and community involvement.

CONCLUSION

The implementation of the SB-TraFo App in the community service program at SMAN 6 Bengkulu Tengah demonstrates that integrating educational technology with character education can effectively reduce bullying behavior and strengthen students' socio-emotional competence. The program resulted in a 37% reduction in bullying cases, an 84% increase in students' understanding of core character values, and consistent participation of 80% of students in the digital reflection platform.

The success of the program was supported by several key factors, including the use of reflective digital learning tools, peer-based character ambassadors, and collaboration among teachers, students, and parents. The establishment of the School Character Care Team (TSPK) further ensured the sustainability of character education initiatives within the school. This model provides a practical framework for integrating educational technology with character education to address bullying in schools. With proper adaptation, the approach can be replicated in other educational institutions seeking to create safer, more empathetic, and digitally supported learning environments.

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AUTHOR CONTRIBUTION STATEMENT

HFP was responsible for the conceptualization of the study, development of the methodology, data analysis, and drafting of the manuscript. YPP contributed to the design of the SB-TraFo App, data collection, and review of the manuscript. AP assisted with the implementation of the program, data interpretation, and manuscript revision. BRI and MN provided guidance on the research design, supervised the project, and contributed to the final version of the manuscript, while NB served as the proofreader.

AI DISCLOSURE STATEMENT

The authors utilized Gemini during the preparation of this manuscript solely to enhance clarity, coherence, and grammatical accuracy. All outputs generated by the tool were carefully reviewed, revised, and validated by the authors to ensure academic integrity and alignment with the study objectives. The authors affirm that the research design, data collection, data analysis, and interpretation of results were conducted entirely without the use of artificial intelligence (AI) for

data generation or primary scientific analysis. Full responsibility for the content of this publication rests with the authors.

CONFLICTS OF INTEREST

The authors declare that they have no known competing interests. There are no financial, institutional, or personal relationships that could have appeared to influence the work reported in this study, including the research process, data analysis, manuscript preparation, and publication decisions.

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