

Digital ecopedagogy-based counseling for cyberbullying prevention among vocational high school students

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ABSTRACT

Cyberbullying has become a growing concern among adolescents in vocational high schools, particularly in Indonesian contexts where conventional counseling often struggles to address online aggression effectively. This study evaluated the effectiveness of digital ecopedagogy-based counseling (DEBC), a structured digital counseling intervention that combines interactive online modules, ecological reflection tasks, peer mentoring, and counselor-guided discussions, in preventing cyberbullying among vocational high school students in South Kalimantan, Indonesia. A quasi-experimental design involved 180 students and six school counselors from three vocational schools, with an eight-week intervention for the experimental group and conventional face-to-face counseling for the control group. Data were collected through pre-test and post-test cyberbullying behavior scales, supported by interviews, focus group discussions, and observations. The experimental group showed significantly greater reductions in cyberbullying behavior ($N\text{-Gain}=0.45\text{--}0.67$, $p<0.05$) than the control group ($N\text{-Gain}=0.12\text{--}0.18$). Qualitative findings further revealed increased empathy, stronger peer support, and more reflective digital decision-making among students. These findings demonstrate that DEBC offers an innovative and scalable counseling model that integrates digital literacy, socio-emotional learning, and ecological reflection to strengthen cyberbullying prevention in vocational school settings.

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1. INTRODUCTION

Cyberbullying has emerged as a major challenge among adolescents in Indonesian vocational high schools, where increased digital connectivity is not always matched by adequate digital literacy and psychosocial support. One of the most pressing concerns is the rise of cyberbullying, a form of aggression that is intentionally and repeatedly carried out using digital tools and platforms [1]. Recent global studies estimate that between 20% and 40% of adolescents have experienced cyberbullying either as victims or perpetrators, indicating that online aggression has become one of the most prevalent forms of peer victimization in the digital era [2]–[4]. Unlike traditional bullying, which is often restricted by time and physical context, cyberbullying has a borderless and continuous nature, it can happen anywhere and at any moment, often under the veil of anonymity. This feature makes it even more psychologically damaging, leading to heightened anxiety, depression, social withdrawal, low self-esteem, and a significant decline in students' academic performance [5]–[7].

In Indonesian vocational high schools, this problem becomes more severe due to the uneven distribution of digital literacy education and counseling services across regions. Adolescents in metropolitan cities may have greater access to resources that help them mitigate online risks, while those in rural and ecologically vulnerable areas, such as the wetland regions of South Kalimantan, face multiple disadvantages. Although internet access has penetrated these communities, digital competence and psychosocial support remain underdeveloped. This paradox creates a situation where adolescents are immersed in global digital culture but lack the protective mechanisms needed to navigate online spaces safely [8], [9]. These young people are therefore simultaneously connected and vulnerable, with exposure to online risks being amplified by the absence of systemic support [10]–[12].

School-based guidance and counseling (G&C) programs are mandated to help students manage personal, academic, and social challenges, including those related to digital behavior [13]–[15]. However, most counseling services in Indonesia are still dominated by conventional, face-to-face practices that were designed for offline environments. These approaches often fail to address the complex interplay of sociocultural, ecological, and technological factors shaping adolescents' lives today [16]–[18]. For example, traditional sessions may overlook the role of digital communities in reinforcing harmful peer norms or neglect the ecological dimensions of students' everyday realities. Consequently, there is a need for new counseling approaches that are both technologically adaptive and culturally grounded. However, empirical evidence comparing innovative digital counseling approaches with conventional face-to-face counseling in vocational school settings remains limited, creating a significant gap in cyberbullying prevention research [19].

In response to this need, digital ecopedagogy-based counseling (DEBC) has been introduced as an innovative model. This approach integrates three interrelated domains: digital literacy, ecological awareness, and sociocultural values embedded in local contexts. Grounded in Freirean ecopedagogy and Bronfenbrenner's ecological systems theory, the model encourages adolescents to critically reflect on the interconnections between their online actions, their immediate communities, and the wider ecological systems that sustain them [20], [21]. The model extends digital safety education by promoting empathy, ethical reflection, and responsible online behavior [22], [23]. Delivered through a digital learning platform, this model also enhances accessibility for students in geographically remote or resource-limited areas.

Previous studies have reported promising outcomes from the implementation of digital ecopedagogy in educational contexts. Its application among vocational high school students in South Kalimantan, for example, demonstrated reductions in cyberbullying incidents and improvements in student engagement with peers and counselors. Quantitative analyses showed significant gains in students' awareness levels (N-Gain ranging from 0.42 to 0.65), while qualitative findings highlighted increased empathy, stronger peer mentoring, and more meaningful counselor–student interactions [24]. This study seeks to address that gap by systematically investigating the effectiveness of digital ecopedagogy in preventing cyberbullying among adolescents in vocational schools. Specifically, it aims to explore to what extent the model reduces the frequency and severity of cyberbullying incidents, how its results compare with those of conventional face-to-face counseling, and which contextual factors, such as counselor engagement, peer support, or cultural adaptation, facilitate or hinder its success. By framing these questions, the research pursues multiple objectives: i) to provide empirical evidence of the model's impact; ii) to compare its outcomes with existing counseling practices; and iii) to identify enablers and barriers that influence its implementation in school settings.

The contribution of this research is expected to be threefold. Theoretically, it advances the discourse on digital ecopedagogy by situating it within the field of G&C, demonstrating its relevance as both a pedagogical and counseling framework. Practically, it provides actionable insights for school counselors, particularly those working in remote or underserved areas, on how to adopt innovative strategies that resonate with students' sociocultural and ecological realities. At the policy level, the findings offer evidence-based recommendations for educational stakeholders and decision-makers to design supportive infrastructures, invest in counselor training, and promote adaptive, inclusive, and sustainable counseling practices. By bridging theory, practice, and policy, this study aspires to contribute to building safer digital environments for adolescents while enhancing the holistic mission of school counseling in the digital age.

The novelty of this study lies in the development and empirical testing of a DEBC model that uniquely integrates ecological metaphors rooted in South Kalimantan wetland culture, structured peer mentoring, socio-emotional reflection, and counselor-guided digital literacy modules within a single cyberbullying prevention framework for vocational high school students. Unlike previous cyberbullying interventions that primarily focus on digital safety awareness or isolated counseling strategies, this study offers a culturally contextualized, ecologically grounded, and scalable counseling model specifically designed for rural and underserved vocational school settings. This integrative framework not only targets the reduction of cyberbullying behavior but also advances students' digital citizenship, empathy, ecological consciousness, and sustainable ethical decision-making in online environments.

2. METHOD

This study applied a quasi-experimental design with a mixed-methods approach, allowing both quantitative and qualitative data to be gathered in order to evaluate the effectiveness of digital ecopedagogy in preventing cyberbullying among vocational high school students. The research was carried out in three vocational schools located in the wetland regions of South Kalimantan, Indonesia, namely State Vocational High School 1 Pelaihari, State Vocational High School 2 Banjarmasin, and State Vocational High School 1 Sungai Tabuk. These schools were selected purposively because of their ecological location, accessibility to digital technologies, and the prevalence of reported cyberbullying cases. A total of 180 students from grades 10 and 11 participated in the study. Because students were nested within three schools, school-level consistency was monitored throughout the study by comparing intervention patterns across sites. Given the limited number of school clusters, school-level descriptive comparisons were used instead of multilevel modeling. Student participants were recruited using cluster convenience sampling through intact classroom groups, while the three school sites were selected through purposive sampling based on ecological context, digital accessibility, and documented cyberbullying prevalence. This approach was chosen to preserve the natural school schedule and reduce disruption to ongoing counseling services. Participants were assigned by intact class groups within each school into an experimental group and a control group to maintain the natural school setting and reduce disruption to counseling schedules. This class-based assignment also minimized contamination between intervention and control conditions.

The intervention was delivered over eight consecutive weeks through a school-supported digital platform accessible via smartphones and computers. Each weekly session lasted 60–90 minutes and consisted of structured digital learning tasks, reflective journaling, case-based cyberbullying analyses, ecological metaphor activities, peer mentoring discussions, and counselor-guided feedback. The intervention consisted of four main components: i) digital literacy modules on online ethics, privacy, and cyberbullying reporting; ii) ecological reflection tasks using wetland-based metaphors to connect online actions with social consequences; iii) socio-emotional learning exercises focusing on empathy and emotional regulation; and iv) peer mentoring tasks to strengthen safe communication and collaborative problem-solving. Counselors in the experimental group guided students in exploring the relationship between their online behaviors, cultural values, and ecological awareness, whereas counselors in the control group delivered traditional face-to-face counseling sessions focused primarily on behavioral advice.

Students in the experimental group completed weekly structured learning tasks, including short case-based modules, reflective journals, scenario analyses, peer-response activities, and guided discussions facilitated by school counselors. Each task required students to analyze cyberbullying situations, reflect on ethical consequences, and propose responsible digital responses. The digital platform also enabled peer feedback and counselor monitoring to support active participation and sustained engagement throughout the intervention period. In contrast, students in the control group received conventional face-to-face counseling services consisting of psychoeducational sessions, problem-sharing discussions, and counselor advice using standard school counseling procedures without the digital ecopedagogical components. The implementation of the DEBC follows a structured framework designed to integrate digital literacy with ecological values. The detailed operational steps, thematic focus, and activities for each session are systematically presented in Table 1.

Table 1. Weekly structure of the DEBC intervention

Week	Focus	Student activities	Counselor role
1	Orientation	Cyberbullying introduction, baseline reflection	Explain norms and platform
2	Online ethics	Case analysis module	Facilitate discussion
3	Ecological reflection	Wetland metaphor task	Guide reflection
4	Emotional regulation	Reflective journaling	Provide feedback
5	Peer mentoring	Peer-response discussion	Moderate interaction
6	Reporting skills	Help-seeking simulation	Reinforce reporting pathways
7	Digital responsibility	Scenario-based decisions	Monitor progress
8	Consolidation	Final reflection and action plan	Summarize learning

As indicated in Table 1, the intervention is divided into eight distinct stages, moving from fundamental digital awareness to advanced reflection on online behavior. This structured approach ensures that students not only understand the technical aspects of cyberbullying but also develop a deep-seated ethical responsibility towards their digital environment. Before the intervention began, the six school counselors participated in a structured orientation workshop on the DEBC protocol, including platform navigation, session objectives, facilitation strategies, and ethical response procedures for cyberbullying disclosures. To maintain intervention fidelity, weekly session checklists and counselor reflection logs were used to ensure that all core components were implemented consistently across the three schools.

Quantitative data were collected using a validated cyberbullying scale administered before and after the intervention. The data provided information on the frequency and intensity of cyberbullying incidents and helped measure changes in students' behaviors. The cyberbullying Scale consisted of items measuring online harassment, humiliation, exclusion, and harmful digital message sharing using a 5-point Likert scale ranging from 1 (never) to 5 (very often). Prior to use in this study, the instrument was reviewed for contextual relevance in Indonesian vocational schools. The original scale has demonstrated good internal consistency, with a reported Cronbach's alpha of 0.89 in previous validation studies. The use of this instrument is further supported by previous validation studies in adolescent school contexts, including the bullying and cyberbullying scale for adolescents (BCS-A) developed by Thomas *et al.* [25] and its Indonesian adaptation by Santhoso *et al.* [26] which demonstrated good construct validity and satisfactory reliability among Indonesian adolescents. This evidence strengthens the contextual suitability of the cyberbullying scale for vocational high school students in South Kalimantan.

For the analysis, descriptive statistics were used to summarize student responses, and paired-sample t-tests together with analysis of variance (ANOVA) helped determine significant differences between pre-test and post-test results in both groups. Prior to the intervention, independent-sample t-test analysis confirmed that there were no statistically significant baseline differences between the experimental and control groups ($p>0.05$), indicating comparable initial cyberbullying behavior levels across groups. The N-Gain score was calculated to assess the magnitude of behavioral change resulting from the intervention. Interview, focus group, and observation data were used as supporting descriptive evidence to enrich interpretation of the quantitative findings, particularly regarding student empathy, peer interaction, and reflective digital behavior changes observed during the intervention. Ethical considerations were strictly observed. Informed consent was obtained from students, parents, and school administrators. Participants were guaranteed confidentiality and were informed of their right to withdraw at any time. To ensure student well-being, counseling support was also made available for participants who might have experienced discomfort during the study. Students who reported distressing cyberbullying experiences during the intervention were immediately referred to the school counseling team for follow-up support and, where necessary, parental consultation. To improve the transparency and replicability of the quasi-experimental procedure, the phases of intervention and assessment are summarized in Figure 1.

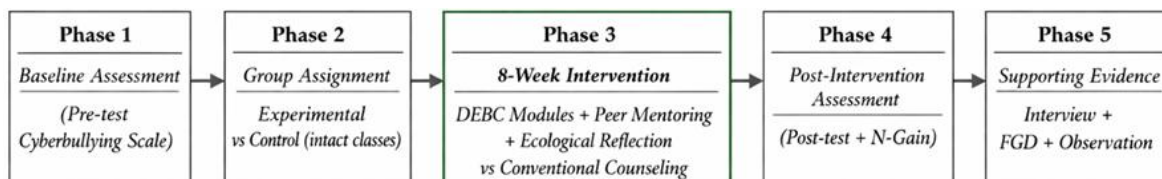


Figure 1. Schematic phases of the DEBC intervention and assessment procedures

3. RESULTS AND DISCUSSION

3.1. Results

The implementation of DEBC over an eight-week period in three vocational high schools in South Kalimantan produced significant and measurable outcomes. Quantitative analysis revealed a substantial decline in the frequency and intensity of cyberbullying behaviors among students in the experimental group compared to those in the control group. Students who participated in the digital ecopedagogy intervention demonstrated improved awareness of online ethics, enhanced emotional regulation, and a stronger willingness to report cyberbullying incidents. The detailed comparison of pre-test and post-test scores between the experimental and control groups is presented in Table 2. The results indicate that students in the experimental group experienced a notable improvement in their post-test scores across all three vocational schools.

Table 2. Pre-test and post-test results

School	Group	Pre-test mean	Post-test mean	N-Gain	Significance (p)
State Vocational High School 1 Pelaihari	Experimental	72.8	85.6	0.45	<0.05
State Vocational High School 1 Pelaihari	Control	73.1	75.4	0.12	>0.05
State Vocational High School 2 Banjarmasin	Experimental	71.2	87.1	0.59	<0.05
State Vocational High School 2 Banjarmasin	Control	70.9	73.5	0.14	>0.05
State Vocational High School 1 Sungai Tabuk	Experimental	70.4	88.5	0.67	<0.05
State Vocational High School 1 Sungai Tabuk	Control	71.0	74.2	0.18	>0.05

As shown in Table 2, the experimental group demonstrated a substantial increase in post-test scores compared with the control group in all three schools. The N-Gain values in the experimental group ranged between 0.45 and 0.67, indicating moderate to high effectiveness, whereas the control group showed only minimal improvement with N-Gain values between 0.12 and 0.18. Statistical testing further confirmed that the differences between the experimental and control groups were significant ($p < 0.05$). The differences in mean scores between the two groups are visually illustrated in Figure 2, which presents the comparison of pre-test and post-test results across the three vocational schools.

The figure clearly shows that students in the experimental group experienced a much greater increase in post-test scores after participating in the DEBC program. In contrast, the control group exhibited only slight improvements after receiving conventional counseling services. To further evaluate the effectiveness of the intervention, the N-Gain values for both groups are compared in Figure 3.

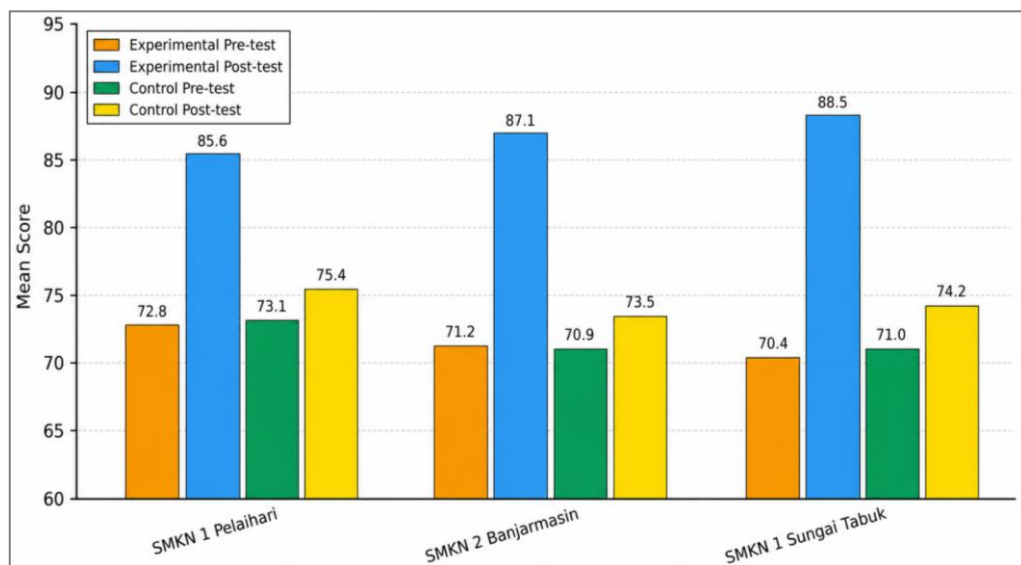


Figure 2. Pre- and post-test mean scores for experimental and control groups across three vocational schools. DEBC yielded larger gains than conventional counseling (all experimental post-tests > control post-tests)

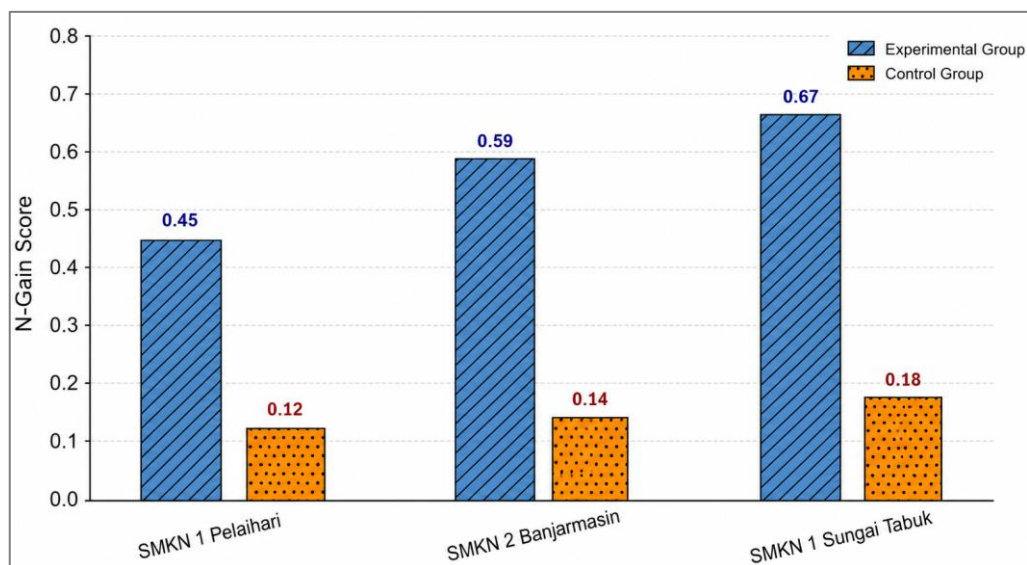


Figure 3. Comparative N-Gain scores of the experimental and control groups across three vocational schools

As illustrated in Figure 3, the experimental group achieved moderate to high effectiveness levels across the three schools, while the control group remained in the low effectiveness category. These findings demonstrate that the DEBC model produced significantly greater behavioral improvements than conventional counseling approaches. Qualitative data further supported these results. Focus group discussions and interviews revealed that students in the experimental group developed greater empathy toward their peers, increased openness in sharing digital experiences, and displayed more reflective thinking regarding the consequences of their online behavior. Counselors reported stronger engagement with students, attributing this to the interactive features of the digital learning platform and the incorporation of ecological metaphors that resonated with students' lived experiences.

In contrast, students in the control group often described conventional counseling as less engaging and more directive, with limited opportunities for peer collaboration. Peer mentoring elements in the experimental group fostered a supportive environment in which students felt safer to discuss sensitive issues related to cyberbullying. The qualitative findings also indicate that specific DEBC components contributed to distinct outcomes. The digital literacy activities strengthened students' awareness of online ethics and reporting behavior, ecological metaphor tasks promoted reflective thinking about the consequences of harmful online actions, and peer mentoring components enhanced empathy, openness, and a stronger sense of safety in discussing cyberbullying experiences. These findings demonstrate that the intervention had consistent positive effects across different school contexts, while conventional approaches showed little to no measurable impact. This reinforces the robustness of the model and its superiority over traditional counseling in addressing cyberbullying.

3.2. Discussion

These outcomes appear to have emerged through a process of guided digital reflection, peer-supported dialogue, and counselor-facilitated meaning making, which together strengthened students' ethical awareness and socio-emotional regulation in online environments. The findings of this study provide compelling evidence that digital ecopedagogy is an effective and innovative framework for preventing cyberbullying among adolescents in vocational high schools. Unlike many single-focus interventions, the approach in this research combined digital literacy, ecological awareness, and socio-emotional learning, creating a multidimensional strategy that not only reduced harmful behaviors but also reshaped students' attitudes toward digital citizenship [27]–[30]. The integration of ecological metaphors proved especially powerful, as students were able to draw parallels between ecological damage and toxic digital behaviors. This cognitive linkage helped them to think more deeply about the consequences of their online actions, encouraging reflective thinking, long-term ethical awareness, and greater sensitivity to the interconnectedness of human and environmental well-being. The present findings echo previous research by Alzamil [22] and Hossain [23], who demonstrated that ecopedagogical strategies foster critical consciousness and ethical responsibility among students in digital contexts.

The improvement in counselor-student engagement emerged as another significant and multifaceted finding. Counselors consistently noted that the digital platform encouraged students to disclose their problems more openly and honestly than in conventional face-to-face sessions [31]–[33]. This observation aligns with earlier literature that highlights the potential of digital counseling tools in enhancing accessibility, reducing stigma, and fostering rapport between counselors and students [31]. Beyond disclosure, counselors reported that students also developed deeper trust and sought proactive advice, thereby transforming the counseling dynamic into a more collaborative process. In addition, the peer mentoring components built into the intervention empowered students to act as co-creators of safe digital spaces. Through collaborative dialogue, role-modeling, and mutual support, adolescents began to take ownership of building healthier online communities, echoing the principles of participatory learning and collective responsibility emphasized in prior ecopedagogical studies [34]. This collaborative ethos mirrors findings from Sari *et al.* [35] who found that peer-based interventions significantly increase empathy and mutual accountability in digital learning environments.

Compared with traditional counseling, which often focuses narrowly on correcting negative behaviors, digital ecopedagogy offered a more holistic, culturally relevant, and context-sensitive strategy. By embedding counseling processes within ecological and cultural narratives, the model resonated deeply with students from wetland regions, where community ties and environmental values are central to daily life. This cultural adaptation was a critical factor in increasing both acceptance and effectiveness of the intervention, as it connected abstract ideas about digital citizenship with lived experiences that students found familiar and meaningful. Similar to findings from Novitawati and Anggreani [8], the use of local cultural wisdom combined with digital literacy training enriched students' engagement and made the intervention more contextually grounded. Moreover, studies by Widyanty *et al.* [9] and Cabrera *et al.* [17] have also shown that counseling programs integrating socio-ecological perspectives tend to generate more sustainable

behavioral changes compared to conventional approaches. These connections illustrate that digital ecopedagogy situates itself within a broader scholarly consensus emphasizing culturally rooted, ecologically informed strategies for addressing digital-age challenges [20], [21], [23], [36], [37].

The results also carry wide-ranging implications for both policy and practice [7], [19], [38]. At the policy level, these findings suggest that digital ecopedagogical approaches deserve to be integrated into national G&C programs, particularly in ecologically vulnerable areas and in schools with limited counseling resources. Such integration would not only address immediate risks related to cyberbullying but also promote a sustainable model of counseling aligned with broader educational and environmental goals [33], [39]–[41]. On a practical level, the model underscores the importance of equipping school counselors with robust digital competencies, training in ecopedagogical methods, and tools for socio-emotional facilitation. Building these capacities will help counselors to better address online risks and enhance their role as facilitators of transformative digital learning. This is consistent with evidence from Gading [16], who highlighted the inadequacy of purely conventional counseling practices in addressing contemporary digital challenges, and from Hung [20], who emphasized the critical role of ecopedagogy in cultivating critical awareness. The integration of ecological values into digital counseling practice also echoes Monem [21], who argued that education grounded in ecopedagogical principles leads to longer-term behavioral transformation. To support scalability and school-level adoption, a practical implementation checklist is proposed to guide counselors, school leaders, and curriculum teams in integrating DEBC into routine cyberbullying prevention services. Table 3 summarizes the key implementation domains, responsible parties, and monitoring indicators required to support the systematic adoption of DEBC in school-based cyberbullying prevention services.

The results affirm that digital ecopedagogy is more than a temporary solution to cyberbullying; it is a pathway toward cultivating responsible, empathetic, and ecologically conscious digital citizens. The model demonstrates clear potential to change not only student behaviors but also their underlying attitudes and values. This study has several limitations. First, the intervention was conducted in only three vocational high schools within one regional context, which may limit generalizability to broader educational settings. Second, the quasi-experimental design relied on intact class grouping, so contextual differences between schools may still have influenced the outcomes. Third, the eight-week intervention period does not yet allow conclusions regarding the long-term sustainability of behavioral changes. These limitations highlight the need for broader geographic sampling, multi-year follow-up studies, and scalable counselor professional development modules to support wider policy integration. Future research should explore longitudinal impacts to determine the sustainability of these behavioral changes, examine how the approach can be adapted across different cultural and educational contexts, and investigate the scalability of this framework in diverse settings. Such efforts will contribute to ensuring that the promise of digital ecopedagogy can be realized in building safer, more ethical, and environmentally attuned digital environments for adolescents worldwide, while also strengthening the theoretical bridge between digital pedagogy, ecological consciousness, and school counseling practice.

Table 3. Practical implementation checklist for schools adopting DEBC

Implementation domain	Key checklist item	Responsible party	Monitoring indicator
Counselor readiness	Counselors receive orientation on DEBC modules, digital ethics facilitation, and cyberbullying response pathways	School counselors/BK coordinator	Training attendance and competency checklist
Platform readiness	School ensures student access to smartphones/computers and stable internet during weekly sessions	School management/information and communication technology (ICT) staff	Student login and platform accessibility rate
Student engagement	Students complete weekly reflection, case analysis, and peer mentoring tasks	Students/counselors	Weekly task completion rate
Peer mentoring system	Peer mentors are identified and briefed to support safe discussion and reporting culture	Counselors/student leaders	Peer mentor activity logs
Reporting pathway	School provides a confidential digital reporting mechanism for cyberbullying incidents	Counselors/school leadership	Number and response time of reports
Parent communication	Parents are informed about DEBC objectives and safe digital behavior reinforcement at home	Counselors/homeroom teachers	Parent meeting or communication records
Program evaluation	Pre-test, post-test, N-Gain, and student feedback are reviewed each cycle	Research team/BK unit	Semester evaluation report

4. CONCLUSION

This study provides clear evidence that DEBC is an effective framework for preventing cyberbullying among vocational high school students in South Kalimantan, Indonesia. The intervention significantly reduced the frequency and intensity of cyberbullying incidents in the experimental group compared with the control group, with measurable improvements in students' awareness of online ethics, empathy development, and emotional regulation. The integration of ecological metaphors, peer mentoring, and reflective digital activities not only enhanced student engagement but also strengthened the role of school counselors in guiding students through critical discussions on responsible digital behavior.

The findings underscore the superiority of digital ecopedagogy over conventional counseling approaches by demonstrating its ability to embed socio-cultural and ecological values into counseling practices. This approach resonates strongly with students' lived experiences, thereby making behavioral change more sustainable. Furthermore, the results highlight the importance of counselor–student engagement and peer support as mechanisms that reinforce the success of the intervention.

The study's contributions extend to multiple levels. Theoretically, it enriches the body of literature on digital G&C by advancing ecopedagogy as a critical lens for addressing challenges in the digital age. Practically, it offers actionable strategies for school counselors, particularly in underserved or ecologically vulnerable regions, to adopt innovative methods that address online risks effectively. At the policy level, the findings suggest that integrating digital ecopedagogical models into national education and counseling frameworks could enhance the quality and inclusivity of student support services. Future research should focus on longitudinal studies to examine the sustainability of behavioral changes, comparative studies across diverse cultural and educational contexts, and further exploration of the scalability of digital ecopedagogy. Such endeavors will ensure the broader applicability of this model in promoting safer, more ethical, and ecologically grounded digital citizenship among adolescents.

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AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

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C : Conceptualization

M : Methodology

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Fo : Formal analysis

I : Investigation

R : Resources

D : Data Curation

O : Writing - Original Draft

E : Writing - Review & Editing

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P : Project administration

Fu : Funding acquisition

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest. This includes the absence of any financial, personal, political, or professional relationships that could have appeared to influence the work reported in this article.

INFORMED CONSENT

We have obtained informed consent from all individuals included in this study. Before participating, all respondents were given a clear explanation of the research objectives, the confidentiality of their responses, and their rights as participants. Consent was obtained through their voluntary agreement to complete the questionnaire distributed by the school coordinators.

ETHICAL APPROVAL

This study was conducted in accordance with national and institutional ethical standards for research involving human participants in educational settings. The research protocol was reviewed and approved by the Research Ethics Committee of the Faculty of Education and Teacher Training, University of Lambung Mangkurat.

DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author, [NPS], upon reasonable request. The data are not publicly available due to ethical restrictions and privacy concerns of the research participants.

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