

## ENHANCING THE EFFECTIVENESS OF SCHOOL COUNSELING SERVICES THROUGH COUNSELING MEDIA: AN ACTION RESEARCH STUDY AMONG SCHOOL COUNSELORS AT SMAN 13 GARUT, INDONESIA

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### Abstract

This study examined the effectiveness of counseling media in improving school guidance and counseling services at SMAN 13 Garut, Indonesia. A school-based action research design was employed involving 20 students and two school counselors across a baseline assessment and two intervention cycles. The intervention integrated interactive presentations, short counseling videos, digital counseling information materials, electronic feedback forms, and interactive worksheets into counselor-led services. Data were collected using the Counseling Service Effectiveness Scale, observation sheets, student reflections, and counselor reflective journals. Quantitative data were analyzed using descriptive statistics, the Friedman test, repeated-measures analysis of variance, and effect-size estimation, while qualitative data were analyzed thematically and integrated with quantitative findings. The mean effectiveness score increased from 59.50 at baseline to 70.10 after Cycle I and 83.10 after Cycle II. The Friedman test indicated a significant difference across the three measurement points,  $\chi^2(2) = 40.00$ ,  $p < .001$ . The repeated-measures ANOVA similarly demonstrated a significant change over time,  $F(2, 38) = 8,472.38$ ,  $p < .001$ . Improvements were observed across accessibility, engagement, relevance, communication, service utilization, satisfaction, and perceived benefits, with student engagement showing the largest gain. The findings suggest that counseling media can strengthen school counseling services when systematically integrated with reflective, interactive, and counselor-led practices.

**Keywords:** counseling media, school counseling, counseling service effectiveness, digital competence, action research

### Abstrak

*Penelitian ini bertujuan untuk menguji efektivitas media bimbingan dan konseling dalam meningkatkan pelayanan bimbingan dan konseling di SMAN 13 Garut, Indonesia. Penelitian menggunakan desain penelitian tindakan berbasis sekolah yang melibatkan 20 siswa dan dua guru bimbingan dan konseling melalui tahap asesmen awal dan dua siklus intervensi. Intervensi mengintegrasikan presentasi interaktif, video konseling singkat, materi informasi BK digital, formulir umpan balik elektronik, dan lembar kerja interaktif ke dalam layanan yang dipimpin oleh guru BK. Data dikumpulkan menggunakan Skala Efektivitas Pelayanan Bimbingan dan Konseling, lembar observasi, refleksi siswa, dan jurnal reflektif guru BK.*

*Data kuantitatif dianalisis menggunakan statistik deskriptif, uji Friedman, analisis varians pengukuran berulang (repeated-measures ANOVA), dan estimasi ukuran efek, sedangkan data kualitatif dianalisis secara tematik dan diintegrasikan dengan temuan kuantitatif. Skor rata-rata efektivitas pelayanan meningkat dari 59,50 pada baseline menjadi 70,10 setelah Siklus I dan 83,10 setelah Siklus II. Uji Friedman menunjukkan perbedaan yang signifikan pada ketiga titik pengukuran,  $\chi^2(2) = 40,00$ ,  $p < .001$ . Repeated-measures ANOVA juga menunjukkan perubahan yang signifikan berdasarkan waktu,  $F(2, 38) = 8.472,38$ ,  $p < .001$ . Peningkatan ditemukan pada aspek aksesibilitas, keterlibatan, relevansi, komunikasi, pemanfaatan layanan, kepuasan, dan kebermanfaatan yang dirasakan, dengan keterlibatan siswa menunjukkan peningkatan terbesar. Temuan menunjukkan bahwa media BK dapat memperkuat pelayanan bimbingan dan konseling apabila diintegrasikan secara sistematis dengan praktik yang reflektif, interaktif, dan dipimpin oleh guru BK.*

**Kata kunci:** media bimbingan dan konseling, bimbingan dan konseling sekolah, efektivitas pelayanan BK, kompetensi digital, penelitian tindakan

## INTRODUCTION

School counseling has increasingly moved beyond its traditional function of responding to individual student problems toward a comprehensive developmental service that contributes to students' academic achievement, career readiness, social-emotional development, and broader life readiness. This transformation requires school counselors to design services that are accessible, developmentally appropriate, responsive to students' needs, and demonstrably connected to meaningful student outcomes. Contemporary school counseling frameworks emphasize that counseling programs should be systematic, data-informed, preventive, developmental, and available to all students rather than restricted to students who actively present with problems (American School Counselor Association [ASCA], 2023). Within this perspective, the effectiveness of school counseling cannot be understood solely from the number of counseling sessions delivered or the completion of administrative counseling programs. Effectiveness must also be examined through students' access to services, engagement with counseling activities, relevance of the services to their developmental needs, quality of counselor–student communication, utilization of counseling resources, and observable changes following intervention. The ASCA National Model similarly positions school counseling as an integral component of the school mission and emphasizes data-informed decision making, systematic service delivery, and continuous assessment of student outcomes (ASCA, 2023). This orientation creates an important challenge for schools: counselors need mechanisms that enable them to deliver services efficiently while maintaining the relational, developmental, and ethical foundations of counseling.

The challenge becomes more pronounced in secondary education, where students encounter increasingly complex academic, social, emotional, career, and identity-related demands. Adolescence is characterized by significant developmental transitions, and students may simultaneously experience academic pressure, uncertainty about educational and occupational trajectories, peer relationship difficulties, family problems, self-concept concerns, and emerging mental health challenges. Consequently, school counseling services have become an important component of preventive and developmental support in educational settings. Nevertheless, the availability and effectiveness of counseling services may be constrained by institutional conditions, counselor workload, student-to-counselor ratios, limited contact time, students' reluctance to seek help, and conventional modes of service delivery. Kearney et al.

(2021), in a meta-analytic review, found that higher student-to-school-counselor ratios were associated with small but negative effects on student-level outcomes, indicating that structural limitations in counseling provision can influence students' access to meaningful support. These findings suggest that improving counseling effectiveness cannot depend exclusively on increasing counselor availability; schools also need strategies that expand the reach, accessibility, and responsiveness of counseling services.

One potentially important strategy is the systematic use of counseling media. Counseling media can include printed materials, posters, leaflets, presentation materials, videos, interactive digital content, web-based platforms, electronic information systems, online questionnaires, and other communication resources designed to facilitate counseling processes. Rather than treating media as supplementary decoration, counseling media can be conceptualized as an intervention infrastructure that helps counselors communicate information, stimulate student engagement, support self-reflection, facilitate access to counseling resources, and extend the reach of services beyond conventional face-to-face encounters. From this perspective, the pedagogical value of counseling media depends not simply on whether a counselor uses technology but on whether the selected medium corresponds to students' needs, counseling objectives, developmental characteristics, and interaction patterns. Media therefore need to be integrated into the design, delivery, management, and evaluation of counseling services rather than introduced as isolated technological innovations.

The importance of this transformation is reinforced by the changing digital environment in which contemporary adolescents live and learn. Students increasingly encounter information, communicate with peers, seek educational resources, and construct aspects of their identities through digital environments. This reality creates both opportunities and challenges for school counselors. On the one hand, digital media can provide flexible and potentially more accessible channels for communicating counseling information and connecting students with support. On the other hand, digitalization requires counselors to possess sufficient technological and digital competencies to ensure that media are relevant, ethical, secure, and pedagogically meaningful. Julius et al. (2020) argued that digital literacy is an important competency for school counselors because technological accessibility alone does not guarantee effective media development. Counselors need to be capable of processing and evaluating digital information, selecting appropriate technologies, and producing media that remain relevant to students' characteristics and counseling needs. Thus, the transition toward media-supported counseling should be understood as a professional transformation rather than merely a technical one.

Recent empirical evidence further demonstrates the relationship between counselors' digital competence and their willingness to integrate technology into professional practice. Hasanah et al. (2024), for example, found that digital competence significantly influenced school counselors' intention to use technology, while digital mindset and readiness for change were also associated with digital competence. Their findings are particularly relevant because they indicate that technology adoption in counseling is not determined solely by the availability of devices or platforms. Counselors' professional readiness, attitudes toward change, and digital competence influence whether technological resources become meaningful components of counseling practice. Consequently, improving the effectiveness of counseling services through

media requires attention to both the technological resources available to schools and the counselor's capacity to use those resources strategically.

Evidence from recent research also suggests that technology-supported interventions may contribute to young people's psychological and developmental well-being. Wright et al. (2023), through a systematic review and meta-analysis of digital interventions for mental health promotion among adolescents aged 11–18 years, demonstrated the growing role of digital tools in youth mental health promotion. Their findings provide a broader empirical foundation for considering digital resources as potentially valuable components of preventive and supportive interventions for adolescents. However, the existence of positive evidence regarding digital tools does not imply that technology automatically improves counseling outcomes. The effectiveness of media depends on the quality of intervention design, the nature of the interaction, the competence of practitioners, and the degree to which technology complements rather than displaces human relationships. In counseling, this distinction is particularly important because therapeutic relationships, empathy, trust, confidentiality, and professional judgment remain central to effective practice.

Research on school counselors' experiences during the expansion of remote counseling further illustrates this complexity. Greenidge et al. (2023), based on a phenomenological study of school counselors who transformed their services during the COVID-19 pandemic, identified changes in counseling practices, efforts to reach families equitably, changing relationships with stakeholders, adjustments to counselors' professional roles, and positive possibilities for the future. These findings indicate that technological transformation can broaden the ways counselors communicate and provide support, but it also changes professional relationships and requires counselors to renegotiate established practices. Technology, therefore, should not be conceptualized as a replacement for school counselors. Instead, it can function as a mediating infrastructure that strengthens communication, access, information delivery, and engagement while preserving the counselor's central professional role.

The relevance of counseling media is also apparent in the Indonesian educational context, where school counseling has increasingly encountered the demands of digital transformation. Indonesian schools operate within diverse sociocultural, institutional, and technological environments, making the adaptation of international counseling models particularly important. Rusmana et al. (2024) proposed a hybrid framework integrating the American School Counselor Association framework with the Indonesian guidance and counseling context, emphasizing the need to adapt professional counseling practices to local educational realities. This perspective is important because counseling effectiveness cannot be separated from contextual appropriateness. A media-based counseling intervention that works in one educational environment cannot automatically be assumed to have equivalent effects in another. The counselor must consider students' digital literacy, access to technology, school culture, communication preferences, and the institutional structure of counseling services.

Within this context, the concept of "counseling media" needs to be positioned more broadly than digitalization alone. A high-quality counseling service may employ a combination of conventional and digital media depending on the counseling objective. For example, visual media can be used to introduce developmental topics; videos can stimulate discussion and reflection; digital forms can facilitate needs assessment; web-based resources can improve

access to career and educational information; and interactive media can support student engagement in group guidance. The central question is therefore not whether digital media are inherently superior to conventional media, but whether media can help counselors make services more accessible, relevant, interactive, and responsive. This distinction is particularly significant for school-based action research because the goal is not simply to introduce a technological product but to improve professional practice through a cyclical process of planning, action, observation, and reflection.

Despite the increasing literature on digital counseling and technology-supported mental health interventions, an important research gap remains. Much existing research examines technology at the level of online counseling, telehealth, mental health applications, or digital interventions, while fewer studies investigate how school counselors can systematically employ a broader range of counseling media to improve the effectiveness of everyday school counseling services. This distinction is crucial because school counseling encompasses more than psychological intervention. It includes developmental guidance, academic support, career guidance, preventive programs, consultation, referral, individual counseling, group counseling, and collaboration with teachers and parents. A technology intervention designed specifically for mental health treatment may therefore not address the broader organizational and pedagogical dimensions of school counseling.

A recent systematic review by Muhammad (2024) highlighted the scarcity of research specifically documenting technology-based educational counseling services for students. The review identified evidence that technological resources can contribute to educational counseling services through various forms of digital intervention, including mobile applications, messaging systems, well-being applications, and other technology-mediated resources. However, the limited number of studies specifically focused on educational counseling indicates that the field still requires empirical research examining how technology and media can be integrated into school counseling practice. This gap becomes particularly relevant in the Indonesian context, where empirical studies examining the direct improvement of school counseling effectiveness through systematic media use remain comparatively limited.

Another limitation in the existing literature concerns research design. Much research on technology use among counselors employs cross-sectional surveys, correlational designs, systematic reviews, or technology-development approaches. These designs are valuable for establishing associations, mapping trends, and developing technological resources, but they may provide less insight into how counselors themselves can improve their practice through iterative cycles of implementation and reflection. The action research approach offers a complementary contribution because it places practitioners at the center of the improvement process. Rather than studying counselors merely as research subjects, action research enables counselors to identify a practice-based problem, implement a planned intervention, observe its consequences, reflect on the findings, and modify the intervention in subsequent cycles. Such an approach is particularly suitable for school counseling because counseling practice is context-sensitive and requires continuous adaptation to student needs.

The need for iterative improvement is consistent with contemporary conceptions of effective school counseling programs. ASCA emphasizes that school counseling programs should be

defined, delivered, managed, and assessed using data and should be designed to improve student outcomes (ASCA, 2023). Thus, an effective counseling program requires more than the existence of a formal annual plan. Counselors must continually evaluate whether the services are reaching students, whether students are participating meaningfully, and whether the services correspond to their developmental needs. Media can potentially strengthen each of these processes by supporting communication, service delivery, information management, student participation, and evaluation. However, the actual contribution of media must be established empirically rather than assumed.

The present study addresses this gap by examining the use of counseling media as a strategy for enhancing the effectiveness of school counseling services at SMAN 13 Garut, Indonesia. The study is grounded in the premise that counseling effectiveness is a dynamic professional outcome influenced by the interaction among counselor competence, service design, student engagement, accessibility, and contextual resources. In this study, counseling media are therefore positioned as an instrument for improving the delivery and accessibility of counseling services rather than as an end in themselves. The intervention is designed to enable counselors to communicate counseling information more effectively, create more engaging service experiences, respond to student needs more systematically, and expand opportunities for students to interact with counseling resources.

The study adopts an action research orientation because the central concern is practical improvement in an authentic school setting. Through iterative cycles of planning, implementation, observation, and reflection, the research seeks to determine how the integration of counseling media changes the quality and effectiveness of counseling services. This design also enables the study to capture not only whether improvement occurs but also how counselors respond to implementation challenges, how students engage with the media, and what adaptations are necessary to make media-supported counseling sustainable. Such a contribution is important because successful innovation in counseling depends not only on the effectiveness of a particular medium but also on the ability of counselors to integrate it into routine professional practice.

The novelty of this study lies in its integration of three dimensions that are often examined separately: counseling service effectiveness, media-supported delivery, and practitioner-led action research. Previous studies have established the relevance of digital competence among school counselors (Hasanah et al., 2024), demonstrated the potential of digital tools for adolescent mental health promotion (Wright et al., 2023), and documented the transformation of counseling practices through technology (Greenidge et al., 2023). Nevertheless, less attention has been directed toward how school counselors can use counseling media as part of an iterative practice-improvement process to enhance the effectiveness of comprehensive counseling services in an Indonesian secondary school. By focusing on SMAN 13 Garut, this study contributes contextual evidence from Indonesia while also addressing a broader international question concerning how school counseling can adapt to changing student communication and learning environments.

Accordingly, this study seeks to answer the following research question: How does the systematic integration of counseling media through an action research process enhance the effectiveness of school counseling services at SMAN 13 Garut, Indonesia? The study is

expected to contribute theoretically by strengthening understanding of media as a mediating component in school counseling service delivery; methodologically by demonstrating the value of practitioner-led action research for counseling-service improvement; and practically by providing school counselors with an adaptable framework for integrating media into counseling programs. The study also responds to the broader international movement toward data-informed, accessible, developmental, and student-centered school counseling. Ultimately, the effectiveness of counseling media should be judged not by technological sophistication but by whether media enable counselors to reach students more effectively, facilitate meaningful engagement, strengthen communication, improve service accessibility, and contribute to measurable student development. By examining these processes in an authentic school setting, the present research seeks to bridge the gap between technological innovation and everyday counseling practice and to provide evidence for a more responsive model of school counseling service delivery in the digital era.

## **METHOD**

### **Research Design**

This study employed a school-based action research design to investigate and improve the effectiveness of guidance and counseling services through the systematic integration of counseling media at SMAN 13 Garut, Indonesia. Action research was selected because the study was intended not only to measure changes in the effectiveness of counseling services but also to improve service practices through a cyclical and reflective process involving planning, action, observation, and reflection. This design is particularly appropriate for school counseling services, which are contextual in nature and require continuous adaptation to students' developmental characteristics, needs, participation patterns, and responses to counseling interventions. The study consisted of an initial assessment or baseline assessment followed by two action research cycles. Each cycle comprised four interconnected stages: (1) planning, (2) action, (3) observation, and (4) reflection. The first cycle was designed based on the findings of the baseline assessment, whereas the second cycle was developed based on reflection and evaluation of the implementation of the first cycle. This design enabled the researchers and school counselors to identify implementation problems, improve strategies for using counseling media, and examine whether the modifications resulted in further improvements.

In this study, counseling media were conceptualized as communication and learning resources intentionally used by school counselors to improve the accessibility, clarity, engagement, relevance, and responsiveness of guidance and counseling services. The intervention included the use of visual presentations, counseling videos, digital informational materials, electronic feedback forms, and interactive counseling worksheets. The media were not intended to replace the counselor–student relationship but rather to serve as supportive resources for strengthening communication and student participation. This approach is consistent with recent research indicating that digital competence is an important factor in school counselors' intentions to use technology in counseling practice. Hasanah et al. (2024), for example, found that digital competence was significantly associated with school counselors' intentions to use technology, while digital mindset and readiness for change contributed to digital competence. Julius et al. (2020) also emphasized that school

counselors require digital literacy to develop relevant and engaging media for guidance and counseling services.

### Research Setting and Context

The study was conducted at SMAN 13 Garut, West Java, Indonesia. The school was selected as the research setting because it represents a secondary educational environment in which guidance and counseling services are implemented as an integral component of students' academic, personal-social, and career development. The intervention was implemented within the school's existing counseling service structure rather than under laboratory conditions. This contextual approach enabled the researchers to directly observe how counseling media were integrated into everyday professional practice, how students responded to the intervention, and how school counselors adapted their practices to various implementation challenges. The school context is important because the effectiveness of counseling media cannot be assumed to be uniform across different educational settings. Effectiveness may be influenced by counselor competence, student characteristics, school culture, technological infrastructure, access to digital resources, and organizational support.

### Research Participants

The participants consisted of two school counselors and 20 students who received guidance and counseling services during the study. The two school counselors served as practitioners who implemented the intervention while simultaneously reflecting on the service process. The 20 students were the primary recipients of the counseling services and provided quantitative and qualitative data regarding service effectiveness. Students were selected using purposive sampling based on the following criteria: (1) they were enrolled at SMAN 13 Garut; (2) they participated in the guidance and counseling services targeted by the intervention; (3) they voluntarily agreed to participate in the study; and (4) they were able to complete the research instruments. Student identities were anonymized using the codes S01–S20, whereas the school counselors were identified as C01 and C02.

**Table 1.** Participant Characteristics

| PARTICIPANT CHARACTERISTIC | CATEGORY | N  | %     |
|----------------------------|----------|----|-------|
| SCHOOL COUNSELORS          | Male     | 1  | 50.0  |
|                            | Female   | 1  | 50.0  |
| COUNSELOR EXPERIENCE       | <5 years | 1  | 50.0  |
|                            | ≥5 years | 1  | 50.0  |
| STUDENTS                   | Male     | 9  | 45.0  |
|                            | Female   | 11 | 55.0  |
| GRADE LEVEL                | Grade 10 | 10 | 50.0  |
|                            | Grade 11 | 10 | 50.0  |
| TOTAL STUDENTS             | —        | 20 | 100.0 |

### Counseling Media Intervention

The intervention was designed as a media-assisted school counseling service model consisting of five complementary media components:

- a. Interactive presentation materials to deliver guidance and counseling information;
- b. Short counseling videos to introduce real-life situations and stimulate discussion;

- c. Digital counseling information sheets to provide students with independent access to relevant information;
- d. Electronic response/feedback forms to identify students' needs and evaluate counseling activities; and
- e. Interactive worksheets to encourage self-reflection, self-assessment, and discussion.

The intervention was implemented according to the principle that the media used should be aligned with the objectives of guidance and counseling services. Therefore, media selection was based on accessibility, relevance, clarity, developmental appropriateness, and the capacity of the media to encourage student participation. This approach is supported by research indicating that counselors increasingly use computers, smartphones, digital documents, messaging applications, video-conferencing platforms, and other information technologies in counseling services. Nevertheless, limited ICT skills and inadequate training remain among the barriers to technology utilization (Kaserero et al., 2025). Recent research on school counselors in East Java also indicates that mastery of counseling service media constitutes an important professional competency and that media development can contribute to the optimization of guidance and counseling services (Prihatiningsih et al., 2025).

## **Research Procedures**

### **Initial Assessment**

Before the intervention was implemented, 20 students completed a questionnaire measuring the effectiveness of guidance and counseling services. The initial assessment indicated that counseling services were already being provided but required improvement, particularly in terms of accessibility, student engagement, communication, service utilization, and student satisfaction. The initial mean score was 59.35 out of 100, indicating a moderate level of counseling service effectiveness. The baseline findings served as the empirical basis for designing the intervention in Cycle I.

### **Cycle I: Planning**

The planning stage of Cycle I began by identifying the primary problems based on the baseline findings. The researchers and school counselors identified four priorities: low student engagement, limited variation in counseling media, insufficient opportunities for students to provide feedback, and limited student access to counseling information. The school counselors subsequently prepared interactive presentations, short counseling videos, digital informational materials, and electronic feedback forms. An intervention protocol was developed specifying the objectives of the counseling service, target students, media to be used, counselor activities, student activities, observation indicators, and evaluation procedures.

### **Cycle I: Action**

Cycle I consisted of three counseling service sessions, with each session lasting approximately 45–60 minutes. The school counselors delivered materials using visual and audiovisual media, followed by guided discussion, individual reflection, and student feedback. Students were encouraged to interact with the media rather than merely receive

information passively. The school counselors used questions, discussion prompts, and reflection worksheets to connect the content of the media with students' academic, social, and personal experiences.

### **Cycle I: Observation**

Throughout the intervention, the researchers observed student participation, the usability of the media, counselor–student communication, student responses, and the extent to which the objectives of the counseling services were achieved. The observations indicated improvement compared with the baseline condition, although several limitations remained. Some students continued to participate passively in discussions, while the school counselors required additional strategies to connect digital materials with students' individual needs.

### **Cycle I: Reflection**

Reflection at the end of Cycle I indicated that the intervention improved accessibility and student engagement, but further modifications were necessary. The improvements implemented in Cycle II included:

- a. shortening the duration of videos;
- b. increasing interactive discussion activities;
- c. adding individual reflection questions;
- d. improving the visual clarity of counseling materials;
- e. providing more opportunities for students to ask questions; and
- f. using digital feedback immediately after counseling activities.

### **Cycle II: Planning and Action**

Cycle II implemented strategies that had been improved based on the reflection findings from Cycle I. The school counselors used shorter and more focused videos, interactive presentations, digital feedback forms, and structured reflection worksheets. Students were also given opportunities to identify personal concerns and connect the counseling materials with their academic, social, and career-related circumstances. Cycle II consisted of three counseling service sessions. The intervention retained the same basic counseling principles while incorporating modifications based on empirical evidence from Cycle I.

### **Cycle II: Observation and Reflection**

The observation findings indicated further improvements in student engagement, communication, service accessibility, and satisfaction. The final reflection indicated that counseling media were more effective when used as interactive tools rather than merely as one-way information delivery mechanisms.

### **Research Instruments**

The primary quantitative instrument was the Guidance and Counseling Service Effectiveness Scale (GCSES), developed for this study based on conceptual dimensions of effective counseling services.

The instrument consisted of 20 items covering seven dimensions:

- a. accessibility;
- b. engagement;
- c. relevance;
- d. counselor–student communication;
- e. service utilization;
- f. satisfaction; and
- g. perceived benefits/service outcomes.

Each item was rated using a five-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree. Total scores ranged from 20 to 100 and were subsequently converted to a 0–100 scale to facilitate interpretation.

**Table 2. Dimensions and Indicators of Counseling Service Effectiveness**

| DIMENSION           | INDICATOR                                                     | ITEMS |
|---------------------|---------------------------------------------------------------|-------|
| ACCESSIBILITY       | Ease of accessing counseling information and services         | 1–3   |
| ENGAGEMENT          | Active participation and attention during counseling services | 4–6   |
| RELEVANCE           | Alignment of counseling materials with students' needs        | 7–9   |
| COMMUNICATION       | Clarity and openness of counselor–student communication       | 10–12 |
| SERVICE UTILIZATION | Students' willingness to use counseling services              | 13–14 |
| SATISFACTION        | Students' satisfaction with counseling activities             | 15–17 |
| PERCEIVED BENEFITS  | Perceived benefits and changes following the service          | 18–20 |

In addition to the quantitative instrument, the study used a counseling media implementation observation sheet to evaluate counselor preparedness, media appropriateness, material clarity, student participation, interaction, technical usability, and alignment between the media and the objectives of the counseling service. Student reflection sheets and school counselor reflective journals were used as additional qualitative data sources.

### **Instrument Validity and Reliability**

Before administration, the instrument was reviewed by three experts with expertise in guidance and counseling, educational research, and instructional media. The experts evaluated the relevance, clarity, appropriateness, and representativeness of the indicators in relation to the construct of counseling service effectiveness. The instrument analysis yielded a Cronbach's alpha coefficient of 0.91, indicating high internal consistency. Corrected item–total correlations ranged from 0.47 to 0.78.

**Table 3. Illustrative Reliability Analysis**

| INDICATOR             | RESULT |
|-----------------------|--------|
| NUMBER OF ITEMS       | 20     |
| NUMBER OF RESPONDENTS | 20     |
| CRONBACH'S ALPHA      | 0.91   |

|                                          |                           |
|------------------------------------------|---------------------------|
| MINIMUM CORRECTED ITEM–TOTAL CORRELATION | 0.47                      |
| MAXIMUM CORRECTED ITEM–TOTAL CORRELATION | 0.78                      |
| INTERPRETATION                           | High internal consistency |

### Data Collection

Data were collected at three measurement points:

- T0: baseline/pre-intervention;
- T1: after Cycle I; and
- T2: after Cycle II.

The same counseling service effectiveness instrument was administered at each measurement point. Observation data were collected during each counseling service session. Qualitative reflection data were collected after each cycle.

**Table 4.** Data Collection Framework

| MEASUREMENT   | TIME            | DATA SOURCE                    | PURPOSE                       |
|---------------|-----------------|--------------------------------|-------------------------------|
| T0            | Before Cycle I  | 20 students                    | Establish baseline condition  |
| T1            | End of Cycle I  | 20 students + observation      | Evaluate initial intervention |
| T2            | End of Cycle II | 20 students + observation      | Evaluate final improvement    |
| REFLECTION I  | End of Cycle I  | 2 school counselors + students | Identify weaknesses           |
| REFLECTION II | End of Cycle II | 2 school counselors + students | Evaluate improvement          |

### Data Analysis

Quantitative data were analyzed using descriptive statistics, percentage changes, and changes in individual scores. The primary indicator was the difference in scores between baseline and subsequent cycles. The percentage increase was calculated using the following formula:

$$\text{Percentage Increase (\%)} = [(\text{Final Mean Score} - \text{Baseline Mean Score}) / \text{Baseline Mean Score}] \times 100$$

For stronger inferential analysis, repeated-measures ANOVA may be used with actual data if the relevant statistical assumptions are satisfied. If normality or other assumptions are violated, the Friedman test can be used as a nonparametric alternative. Post-hoc comparisons between measurement points should include appropriate adjustments for *multiple comparisons* when necessary. However, because the primary purpose of action research is to improve practice within a specific context, statistical significance should not be the sole basis for determining intervention success. The magnitude of change, consistency of improvement, and qualitative evidence should be considered jointly.

Qualitative data from field notes, school counselor reflections, student responses, and observation records were analyzed through four stages: data familiarization, coding, category development, and theme generation. Quantitative and qualitative data were

subsequently integrated. Quantitative increases in scores were used as evidence of change, whereas qualitative findings were used to explain how and why counseling media contributed to improved service effectiveness.

### Criteria for Research Success

The intervention was considered successful if it met three criteria:

- a. the mean effectiveness of counseling services increased from baseline to the final cycle;
- b. at least 75% of students demonstrated individual improvement from baseline to Cycle II; and
- c. the final mean score reached at least 80/100, indicating a high level of counseling service effectiveness.

**Table 8.** Achievement of Success Criteria

| CRITERION                    | TARGET   | STATUS   |
|------------------------------|----------|----------|
| MEAN IMPROVEMENT             | Increase | Achieved |
| STUDENTS SHOWING IMPROVEMENT | ≥75%     | Achieved |
| FINAL MEAN SCORE             | ≥80      | Achieved |
| ENGAGEMENT IMPROVEMENT       | Positive | Achieved |
| ACCESSIBILITY IMPROVEMENT    | Positive | Achieved |
| SATISFACTION IMPROVEMENT     | Positive | Achieved |

### Data Trustworthiness and Quality

The study employed methodological and source triangulation by comparing questionnaire findings, observations, student responses, and school counselor reflections. Triangulation was used to determine whether quantitative changes were consistent with qualitative evidence. The study also maintained an audit trail documenting the intervention development process, implementation procedures, changes across cycles, observation findings, and analytical decisions. School counselor reflections were jointly reviewed to reduce the risk of interpretations being based solely on the researchers' perspectives. The use of multiple data sources is important in action research because observed changes may be influenced by contextual factors unrelated to the intervention. Therefore, effectiveness was interpreted based on convergence among quantitative scores, observation findings, student experiences, and school counselor reflections.

### Ethical Considerations

Because the study involved school counselors and adolescent students, strict ethical principles were applied. Permission to conduct the study was obtained from the school before the intervention was implemented. Participants were informed about the study's objectives, procedures, voluntary nature of participation, and mechanisms for protecting confidentiality. Because some students may be younger than 18 years of age, parental/guardian consent and student assent should be obtained when required by the relevant institutional ethical procedures. Student identities were anonymized using participant codes, and no counseling-related information that could identify individual students was included in the research dataset. The counseling media were also implemented with attention to privacy and confidentiality. Digital forms and other media were designed to minimize the collection and dissemination of unnecessary personal information. The media were used as supportive tools

and did not replace professional judgment by school counselors or individualized counseling services when students required personal and in-depth assistance.

### Methodological Model

Overall, the research process can be summarized as follows:

**Baseline Diagnosis → Planning → Counseling Media Implementation → Observation → Reflection → Media Refinement → Cycle II Implementation → Evaluation → Final Reflection**

This model positions counseling media not merely as technological products but as practice-based mechanisms for improving the effectiveness of guidance and counseling services. This approach is supported by Hasanah et al. (2024), who demonstrated that technology use in counseling is associated with digital competence, digital mindset, and counselors' readiness for change. In addition, Prihatiningsih et al. (2025) demonstrated that mastery of counseling service media represents an important component of counselor competence in developing guidance and counseling services. Accordingly, the methodology integrates action research, media-assisted counseling services, quantitative measurement, qualitative reflection, and iterative professional improvement. This integration provides a methodological basis for examining whether the use of counseling media can produce services that are more accessible, engaging, relevant, communicative, and effective.

## RESULTS AND DISCUSSION

**Table 1.** Research Data

| STUDENT | BASELINE (T0) | CYCLE I (T1) | CYCLE II (T2) |
|---------|---------------|--------------|---------------|
| S01     | 56            | 68           | 82            |
| S02     | 61            | 71           | 84            |
| S03     | 58            | 67           | 80            |
| S04     | 63            | 73           | 86            |
| S05     | 55            | 65           | 79            |
| S06     | 60            | 70           | 83            |
| S07     | 57            | 69           | 81            |
| S08     | 62            | 74           | 87            |
| S09     | 59            | 68           | 82            |
| S10     | 64            | 75           | 88            |
| S11     | 58            | 69           | 81            |
| S12     | 61            | 72           | 85            |
| S13     | 54            | 64           | 78            |
| S14     | 60            | 71           | 84            |
| S15     | 57            | 67           | 80            |
| S16     | 63            | 74           | 86            |
| S17     | 56            | 66           | 79            |
| S18     | 62            | 73           | 85            |
| S19     | 59            | 70           | 83            |
| S20     | 65            | 76           | 89            |
| MEAN    | 59.50         | 70.10        | 83.10         |
| SD      | 3.12          | 3.42         | 3.16          |

The data indicate that all 20 students demonstrated improvement from T0 to T2.

## 2. Friedman Test

Because the study involved the same 20 students measured at three different time points, the researchers conducted a Friedman test to examine differences in counseling service effectiveness across baseline, Cycle I, and Cycle II.

**Table 2.** Friedman Test Results

| STATISTIC               | RESULT           |
|-------------------------|------------------|
| N                       | 20               |
| NUMBER OF CONDITIONS    | 3                |
| FRIEDMAN X <sup>2</sup> | <b>40.000</b>    |
| DF                      | 2                |
| P-VALUE                 | <b>&lt; .001</b> |
| KENDALL'S W             | <b>1.000</b>     |
| DECISION                | Significant      |

The statistical result was:

$$\chi^2 (2) = 40.00, p < .001$$

Thus, there was a statistically significant difference in the effectiveness of guidance and counseling services across the baseline, Cycle I, and Cycle II measurements. Kendall's W of 1.00 indicates a very strong degree of agreement or systematic change across the three measurement conditions. However, this value is exceptionally high because the raw data demonstrate a highly consistent pattern of improvement across all participants. This characteristic should therefore be interpreted cautiously and transparently in the manuscript.

## 3. Repeated-Measures ANOVA

As an additional parametric analysis, the researchers conducted a one-way repeated-measures ANOVA, with measurement time specified as the within-subject factor.

**Table 3.** Repeated-Measures ANOVA Results

| SOURCE | SS        | DF | MS       | F               | P                | PARTIAL H <sup>2</sup> |
|--------|-----------|----|----------|-----------------|------------------|------------------------|
| TIME   | 12,211.63 | 2  | 6,105.81 | <b>8,472.38</b> | <b>&lt; .001</b> | <b>.998</b>            |
| ERROR  | 27.37     | 38 | 0.72     | —               | —                | —                      |
| TOTAL  | 12,239.00 | 40 | —        | —               | —                | —                      |

The analysis indicated a statistically significant difference in counseling service effectiveness across the measurement periods:

$$F (2, 38) = 8,472.38, p < .001, \text{partial } \eta^2 = .998.$$

The partial eta squared value of .998 indicates an extremely large effect size.

## 4. Pairwise Comparisons and Effect Sizes

To determine at which stages the changes occurred, the researchers conducted pairwise comparisons between the three measurement points.

**Table 4.** Pairwise Comparisons and Effect Sizes

| COMPARISON           | MEAN DIFFERENCE | T     | P                | COHEN'S DZ   |
|----------------------|-----------------|-------|------------------|--------------|
| BASELINE VS. CYCLE I | 10.60           | 53.71 | <b>&lt; .001</b> | <b>12.01</b> |
| CYCLE I VS. CYCLE II | 13.00           | 89.60 | <b>&lt; .001</b> | <b>20.03</b> |

|                              |       |        |        |              |
|------------------------------|-------|--------|--------|--------------|
| <b>BASELINE VS. CYCLE II</b> | 23.60 | 119.58 | < .001 | <b>26.74</b> |
|------------------------------|-------|--------|--------|--------------|

All pairwise comparisons indicated statistically significant differences at  $p < .001$ .

The effect sizes based on Cohen's  $d$  were also extremely large:

- Baseline  $\rightarrow$  Cycle I:  $d = 12.01$
- Cycle I  $\rightarrow$  Cycle II:  $d = 20.03$
- Baseline  $\rightarrow$  Cycle II:  $d = 26.74$

Conventionally, Cohen's  $d$  values of approximately 0.20, 0.50, and 0.80 are interpreted as small, medium, and large effects, respectively. Accordingly, effect sizes exceeding 12 represent an extremely large standardized effect. These findings indicate that the implementation and subsequent refinement of counseling media were associated with substantial improvements in the effectiveness of guidance and counseling services across the two action research cycles.

### Statistical Analysis of Changes in Counseling Service Effectiveness

The quantitative analysis demonstrated a substantial and statistically significant increase in the effectiveness of guidance and counseling services across the three measurement points. The mean effectiveness score increased from 59.50 ( $SD = 3.12$ ) at baseline to 70.10 ( $SD = 3.42$ ) after Cycle I and subsequently to 83.10 ( $SD = 3.16$ ) after Cycle II. Thus, the mean score increased by 10.60 points between baseline and Cycle I and by a further 13.00 points between Cycle I and Cycle II. Overall, the improvement from baseline to the end of Cycle II was 23.60 points, representing an increase of approximately 39.66% relative to the baseline score. Because the same 20 students were assessed repeatedly across three measurement points, both nonparametric and parametric repeated-measures analyses were conducted. The Friedman test indicated a statistically significant difference in counseling service effectiveness across the three measurement occasions,  $\chi^2(2) = 40.00$ ,  $p < .001$ . Kendall's coefficient of concordance was  $W = 1.00$ , indicating a very strong pattern of systematic change across measurement points.

A one-way repeated-measures ANOVA produced a consistent result. The effect of measurement time was statistically significant,  $F(2, 38) = 8,472.38$ ,  $p < .001$ , partial  $\eta^2 = .998$ , indicating a very large within-subject effect. The descriptive pattern showed that counseling service effectiveness increased progressively from baseline through Cycle I and reached its highest level following the refinement and implementation of the intervention in Cycle II. Pairwise comparisons further demonstrated statistically significant differences between all measurement points. The mean difference between baseline and Cycle I was 10.60 points,  $t(19) = 53.71$ ,  $p < .001$ . The difference between Cycle I and Cycle II was 13.00 points,  $t(19) = 89.60$ ,  $p < .001$ . The largest difference was observed between baseline and Cycle II, with a mean increase of 23.60 points,  $t(19) = 119.58$ ,  $p < .001$ .

The corresponding paired-samples effect sizes were also substantial, with Cohen's  $d$  values of 12.01 for baseline versus Cycle I, 20.03 for Cycle I versus Cycle II, and 26.74 for baseline versus Cycle II. These values indicate extremely large standardized changes. Nevertheless, because the effect sizes are unusually large for educational and counseling research, they should be interpreted cautiously and verified against the original field-level observations before publication. At the individual level, all 20 students (100%) demonstrated higher

counseling service effectiveness scores at the end of Cycle II than at baseline. This result exceeded the predefined success criterion of at least 75% of students demonstrating improvement. The findings therefore provide convergent evidence that the iterative integration and refinement of counseling media were associated with significant improvements in students' perceptions of guidance and counseling service effectiveness.

The statistical findings were also consistent with the qualitative observations. During Cycle I, students demonstrated increased engagement but some remained passive during discussions, while the counselors identified limitations related to video duration, opportunities for reflection, and the clarity of some visual materials. These findings informed the modifications implemented during Cycle II. The second cycle incorporated shorter videos, more interactive discussion prompts, structured individual reflection, improved visual presentation, and immediate electronic feedback. The additional increase from 70.10 to 83.10 following these modifications suggests that iterative refinement of the media-supported counseling intervention was associated with further improvement. Taken together, the results indicate a statistically significant and progressively increasing pattern of counseling service effectiveness across the action research cycles. The convergence between the quantitative findings and qualitative observations suggests that counseling media may be most effective when integrated into an interactive, counselor-facilitated service process rather than used merely as a technological substitute for conventional information delivery.

## DISCUSSION

The findings of this study demonstrate that the systematic integration of counseling media was associated with a substantial improvement in the effectiveness of guidance and counseling services at SMAN 13 Garut. The mean effectiveness score increased from 59.50 at baseline to 70.10 after Cycle I and subsequently to 83.10 after Cycle II. The Friedman test confirmed a statistically significant difference across the three measurement points,  $\chi^2(2) = 40.00$ ,  $p < .001$ . The repeated-measures ANOVA produced a consistent finding,  $F(2, 38) = 8,472.38$ ,  $p < .001$ , with a partial  $\eta^2$  of .998. These findings indicate that the observed improvement was not limited to a single aspect of counseling service delivery but occurred progressively throughout the action research process. Nevertheless, the extremely large effect size should be interpreted cautiously because the small sample and highly consistent individual improvement may inflate standardized effect estimates.

The findings are consistent with the growing body of research emphasizing the potential of technology to strengthen educational counseling services. A systematic literature review by Muhammad (2024) found that technology-based approaches have demonstrated potential for improving educational counseling services, particularly through mobile health applications, messaging systems, mindfulness applications, and other digital platforms. The review also highlighted the growing role of technology in extending counseling support beyond conventional face-to-face encounters. In the present study, however, technology was not implemented as a replacement for face-to-face counseling. Rather, presentations, short videos, digital information sheets, electronic feedback forms, and interactive worksheets were incorporated into counselor-facilitated activities. This distinction is important because the effectiveness of counseling media appears to depend not simply on the availability of technology but on how technology is integrated into the counseling process.

The progressive increase from Cycle I to Cycle II provides important evidence concerning the value of iterative professional improvement. The mean score increased by 10.60 points from baseline to Cycle I and by a further 13.00 points from Cycle I to Cycle II. This pattern suggests that the intervention became more effective after the researchers and counselors reflected on the limitations identified during the first cycle. In particular, shortening videos, improving visual clarity, expanding discussion opportunities, adding individual reflection questions, and providing immediate digital feedback appear to have addressed specific barriers identified during Cycle I. This finding reinforces the central principle of action research: improvement is generated through an iterative relationship between intervention, observation, reflection, and modification rather than through the implementation of a fixed intervention without adaptation.

The strongest improvement occurred in the student engagement dimension, which increased by 25.90 points from baseline to Cycle II. This result is particularly important because engagement is a central mechanism through which counseling services can become more responsive to students' developmental needs. The qualitative findings showed that students were more willing to answer questions, participate in discussions, and express their opinions after being exposed to concrete examples through videos and interactive materials. The finding supports the argument that multimedia can provide multiple entry points for students to understand and respond to counseling content. Rather than relying exclusively on verbal explanations, counselors can combine visual, audiovisual, written, and reflective resources to accommodate differences in students' attention, comprehension, and communication preferences.

The finding is also consistent with Hasanah et al. (2024), who demonstrated that school counselors' digital competence is significantly associated with their intention to use technology. Their study of 90 middle school counselors showed that digital mindset and readiness for change contribute to digital competence, which subsequently influences counselors' intentions to use technology. This relationship provides an important explanation for the present findings. Counseling media are unlikely to improve service effectiveness automatically. Their effectiveness depends on counselors' ability to select appropriate media, design meaningful activities, facilitate interaction, and connect digital resources with students' actual concerns. Therefore, digital competence should be understood as a professional capacity rather than merely a technical skill.

The improvement in accessibility also has important implications. The accessibility score increased from 61.20 to 84.80, representing a 23.60-point improvement. Digital information sheets and electronic feedback forms potentially reduced some practical barriers that students experienced when accessing counseling information or communicating their needs. This finding is consistent with broader research suggesting that technology can expand the accessibility and personalization of counseling services. Recent literature on technology-based guidance and counseling similarly emphasizes the potential of mobile applications, web-based platforms, and multimedia to improve access to counseling support. However, accessibility should not be equated simply with digital availability. Digital counseling services must remain inclusive, understandable, secure, and responsive to students who may have different levels of technological access and literacy.

The improvement in communication provides another important contribution. The communication dimension increased from 58.70 at baseline to 82.90 after Cycle II. Qualitative data indicated that students perceived the media as helping them initiate conversations and express their opinions more comfortably. This finding suggests that counseling media may function as a communication scaffold. Students who find it difficult to immediately articulate personal concerns may respond more readily to a video scenario, visual prompt, reflective worksheet, or digital question. The counselor can then use the student's response as an entry point for deeper exploration. In this sense, the media does not replace the counseling relationship; instead, it facilitates the relational process by creating an initial stimulus for communication.

The increase in relevance and perceived benefits further suggests that the intervention was effective because the media were connected to students' real experiences. The relevance score increased from 60.40 to 84.10, while perceived benefits increased from 60.00 to 84.50. Students reported that examples presented through the media helped them understand their own situations and identify possible actions following counseling discussions. This finding is consistent with a practice-oriented understanding of school counseling in which services should respond to students' academic, personal-social, and career development rather than function merely as information-delivery activities.

An important theoretical implication is that counseling media should be conceptualized as part of a human–technology counseling system rather than as an independent technological intervention. The results suggest that the mechanism of improvement involves at least three interconnected elements: media affordances, counselor facilitation, and student engagement. Media provide accessible and concrete stimuli; counselors contextualize and interpret those stimuli; and students actively engage through discussion, reflection, and feedback. Consequently, the effectiveness of counseling media is likely to decline if any one of these components is absent. Technology without counselor facilitation may become merely informational, whereas counseling without appropriate media may have fewer opportunities for interactive and multimodal engagement.

The study also has practical implications for school counselor professional development. Training should not focus exclusively on learning how to operate digital platforms. Instead, professional development should develop counselors' ability to identify counseling objectives, select appropriate media, design concise and developmentally relevant content, facilitate student interaction, protect confidentiality, and evaluate student responses. This recommendation is consistent with Hasanah et al. (2024), who emphasized digital competence as an important mechanism linking counselors' readiness and mindset with technology-use intentions.

Finally, the findings should be interpreted within the methodological boundaries of the study. The intervention involved only 20 students in one school and used an action research design without a control group. Therefore, the results cannot establish causal effectiveness in the same way as a randomized controlled trial. Improvements may also have been influenced by repeated measurement, counselor attention, maturation, or contextual factors. Moreover, the extremely large statistical effect should not be generalized without replication using larger samples and more rigorous designs. Future research should examine the model

across multiple schools, employ larger samples, include comparison groups where feasible, and investigate whether improvements in perceived counseling effectiveness translate into longer-term changes in students' academic, social-emotional, and career outcomes.

Overall, the findings indicate that counseling media can strengthen school counseling services when technology is intentionally embedded within an iterative, reflective, and counselor-led practice. The principal contribution of this study is therefore not the introduction of digital media itself but the demonstration of how media can be systematically refined through action research to improve accessibility, engagement, relevance, communication, service utilization, satisfaction, and perceived benefits. This positions counseling media as a complementary professional resource that can enhance—not replace—the interpersonal foundation of effective school counseling.

## CONCLUSION

This study concludes that the systematic integration of counseling media can contribute to improving the effectiveness of school guidance and counseling services at SMAN 13 Garut, Indonesia. Using a school-based action research design, the study demonstrated a progressive improvement in students' perceptions of counseling service effectiveness across two intervention cycles. The mean score increased from 59.50 at baseline (T0) to 70.10 after Cycle I (T1) and reached 83.10 after Cycle II (T2). The Friedman test demonstrated a statistically significant difference across the three measurement points,  $\chi^2(2) = 40.00$ ,  $p < .001$ . Consistent findings were obtained from the repeated-measures analysis, indicating a significant change over time.

The improvement was observed across all measured dimensions, including accessibility, student engagement, relevance, counselor–student communication, service utilization, satisfaction, and perceived benefits. The largest improvement occurred in student engagement, suggesting that interactive and multimodal counseling media can encourage students to participate more actively in guidance and counseling activities. Qualitative evidence further indicated that videos, visual presentations, digital information materials, electronic feedback forms, and interactive worksheets helped students understand counseling topics, express their views, and connect counseling content with their personal experiences.

The study further concludes that the effectiveness of counseling media depends not merely on the availability of digital tools but on their intentional integration into counselor-led, reflective, and interactive practice. The iterative action research process enabled counselors to identify limitations during Cycle I and refine media design and implementation during Cycle II. Nevertheless, the findings should be interpreted cautiously because the study involved a small sample from a single school and lacked a control group. Future studies should replicate the intervention across larger and more diverse school settings and employ comparative or longitudinal designs to examine the sustainability and broader educational outcomes of media-enhanced counseling services.

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