Development of Ular Tangga SIAGA Media as a Counseling Tool to Improve Interpersonal Communication

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Abstract. Low levels of interpersonal communication skills among students frequently impede counseling effectiveness and social interaction in school settings. This research aimed to develop a counseling medium in the form of a board game, *Ular Tangga SIAGA* (SIAGA Snakes and Ladders), as an innovative tool to enhance students' interpersonal communication, particularly aspects of openness and empathy. The study employed the Research and Development (R&D) method using the ADDIE model, which consists of Analysis, Design, Development, Implementation, and Evaluation. In the analysis phase, field studies were conducted through questionnaires and interviews with several stakeholders at SMP Negeri 1 Loa Janan to identify communication barriers. The media was then designed and developed using Canva and Microsoft Word, based on the identified counseling needs. During the development phase, the prototype was refined and prepared for expert validation. The evaluation phase involved validation by a Guidance and Counseling (BK) teacher, language experts for the truth or dare cards, and material experts to determine the media's feasibility. The results indicated high validity scores for content (90%), media (80%), and educational aspects (92.4%). Quantitative observations further showed improvements in students' openness and empathy during counseling interactions. Overall, *Ular Tangga SIAGA* demonstrates strong pedagogical feasibility and offers a culturally responsive, engaging, and safe medium for facilitating interpersonal communication in school counseling practices.

Keywords: Multi-Cultural Counseling; Counseling Media; Interpersonal Communication Skills; Game-Based Counseling.

Introduction

Interpersonal communication plays a crucial role in students' emotional and social development, serving as the foundation for self-expression, empathy, and positive relationships (DeVito, 2016). However, many adolescents experience communication difficulties that manifest as social anxiety, withdrawal, or misunderstanding among peers and teachers. Factors such as authoritarian parenting, lack of family support, low confidence, and experiences of exclusion further hinder effective interaction (Hafizah, 2019). When students are unable to communicate openly, counseling services become less effective, and opportunities for personal growth are lost.

Traditional counseling approaches are often perceived by students as rigid or intimidating (Rosiana, 2024). Therefore, innovative, student-centered methods are needed to foster engagement and reduce communication barriers. Game-based counseling provides a dynamic, enjoyable, and participatory environment that encourages self-disclosure and mutual understanding (Korohama, 2023). Among various game models, Snakes and Ladders aligns well with counseling because it promotes reflection, cooperation, and the acceptance of consequences, all within a relaxed atmosphere. *The Ular Tangga SIAGA* (Snakes and Ladders for Counseling) was developed to integrate these psychological and pedagogical principles with Dayak cultural values, making it both contextually relevant and culturally meaningful. The selection of Dayak symbols was based on their deep philosophical connection to human relationships and moral growth. The *Burung Enggang* (Hornbill) symbolizes honesty and wisdom, reinforcing the counseling value of openness (Hanum, 2018). The *Tari Mandau* represents courage and cooperation, mirroring the development of empathy and assertiveness in interpersonal communication. Meanwhile, the *Batang Garing* (Tree of Life) embodies balance and mutual respect, reflecting equality and harmony in relationships (D. Wulandari, 2020). These symbols not only promote a sense of cultural connectedness among students but also create a safe and familiar counseling space where they can express themselves authentically.

Compared with conventional media, *Ular Tangga SIAGA* transforms counseling into an interactive and inclusive process. Its cultural grounding enhances emotional engagement and identity awareness, supporting both social learning and cultural appreciation. Empirical studies across Indonesia and other multicultural contexts affirm the effectiveness of game-based interventions in improving empathy, openness, and collaboration (DeVito, 2016). This study aims to develop and validate the *Ular Tangga SIAGA* counseling media through the ADDIE model to improve students' interpersonal communication skills. The urgency of this research lies in providing a culturally responsive and pedagogically sound counseling tool that supports both psychological development and local cultural preservation.

Method

Research Design

This study employed a quantitative research and development (R&D) design using the ADDIE model (Analysis-Design-Development-Implementation-Evaluation). The ADDIE model was selected for its systematic and flexible structure, which is suitable for developing game-based counseling media that are both pedagogically effective and responsive to student needs (Branch, 2016; Dick & Carey, 1996). ach stage of the ADDIE model was operationalized as follows:

1. **Analysis**

   Student needs were identified through questionnaires, interviews with counseling teachers, and classroom observations at Junior High School 1 Loa Janan. A total of 100 eighth-grade students participated in this identification stage by completing the AKPD interpersonal communication questionnaire. The analysis revealed key factors behind

low interpersonal communication, including social anxiety, lack of family support, and experiences of exclusion (Diningrum, 2024).

2. **Design**

The Design stage aimed to develop the *Ular Tangga SIAGA* counseling game to overcome communication barriers among eighth-grade students at Junior High School 1 Loa Janan. The design considered students' characteristics such as passive interaction, social anxiety, and low self-confidence. The game integrated Snakes and Ladders mechanics with Truth, Dare, and Change cards to foster openness and empathy through play (Adler, 1964; DeVito, 2016), emphasizing openness, empathy, and supportive dialogue. Bright colors, progressive prompts, and Dayak cultural symbols were used to create a safe and engaging atmosphere. Counselors acted as facilitators and observers during gameplay (Hanum, 2018).

3. **Development**

Focused on creating and testing a prototype of the *Ular Tangga SIAGA* counseling game based on the design analysis. The prototype featured engaging visuals, bright colors, and cultural symbols to attract passive students and reduce communication anxiety (Ranubaya, 2022). A small-group trial involving eighth-grade students (3-4 per group) was conducted to evaluate feasibility and student responses over six sessions, three pre-tests, and three post-tests. Observations, interviews, and Likert-scale (1-5) assessments guided revisions to improve clarity, comfort, and effectiveness.

4. **Implementation**

Counselors introduced the game as a fun, non-threatening activity and divided students into small groups to encourage comfort and participation. The game sessions were conducted in a relaxed atmosphere, allowing students to communicate naturally while counselors guided and observed interactions (D. Wulandari, 2020). Behavioral changes were documented across sessions, focusing on reduced social anxiety and improved openness. Feedback and observations from this stage were used to refine the product before final evaluation.

5. **Evaluation**

In the evaluation stage, a validation test was conducted involving several experts, beginning with a material expert to assess the suitability of the developed content for the junior high school level. This validation ensured that the game materials were age-appropriate for adolescents and that the game activities supported students' understanding of interpersonal communication. The process then continued with media expert validation to examine whether the game flow was easy to follow, the instructions were clearly understandable, and the developed media was feasible for use due to its educational and informative components. Lastly, validation was carried out by an education expert or Guidance and Counseling practitioner, specifically the Guidance and Counseling teacher at SMP Negeri 1 Loa Janan, to evaluate the alignment of the game with counseling objectives, its relevance to students' needs, and its applicability in school counseling service implementation.

Participants

Participants consisted of eighth-grade students from Junior High School 1 Loa Janan. During the needs analysis, 100 students completed the interpersonal communication questionnaire (AKPD). Based on the results, 15 students showing low communication scores were selected for group counseling trials, while 2 students participated in individual counseling sessions using the *Ular Tangga SIAGA* media. All participants were selected purposively in collaboration with school counselors to ensure relevance to the study objectives. Additionally, the Guidance and Counseling (BK) teacher and the principal of SMP Negeri 1 Loa Janan were interviewed to obtain deeper insights into the school's counseling needs and the relevance of the media being developed. Several student data sheets were also utilized as observation materials to support the analysis of students' interpersonal communication conditions.

Participant Recruitment Procedure

In the analysis stage, needs were identified through questionnaires, interviews with counseling teachers, and observations of students at Junior High School 1 Loa Janan. These data mapped factors contributing to low interpersonal communication such as social anxiety, lack of family support, and experiences of exclusion (Diningrum, 2024; Korohama & Deo, 2023). Findings from the analysis informed the design stage, which combined elements of Snakes and Ladders and Truth-or-Dare into Ular Tangga SIAGA based on the Adlerian approach and interpersonal communication theory (Adler, 1964; DeVito, 2016), During the development stage, a prototype and counselor guidance module were created and tested on a limited basis.

Observations focused on students' participation, comfort, and behavioral changes throughout the game sessions. Students were generally more engaged, expressive, and confident in communicating, showing improvements in openness and empathy. These observations, aligned with Fatimah (2016) and Haryanto & Putri (2022), demonstrated that interactive, culturally based media can increase student involvement and emotional expression in counseling activities. Revisions were then made based on participant and counselor feedback. The media was subsequently implemented in both group and individual counseling sessions, with counselors acting as facilitators and observers.

Research Instruments

Validation was conducted during the Development and Evaluation stages of the ADDIE model to ensure that the *Ular Tangga SIAGA* media met pedagogical, technical, and counseling standards. Three categories of experts (guidance and counseling), media, and education assessed the product's feasibility and quality. A five-point Likert scale (1 = Not Suitable to 5 = Very Suitable) and a relevance checklist were used. Assessment criteria were aligned with interpersonal communication indicators adapted from DeVito (2016): openness, empathy, supportive attitude, positive attitude, and similarity. Feedback from experts guided revisions before the implementation phase.

Data Analysis

Validation data were analyzed quantitatively by calculating average scores for each aspect as a basis for product improvement and refinement. Student data (questionnaires, observations, interviews, and participant reflections) were triangulated to evaluate improvements in interpersonal communication, openness in expressing feelings, and the counselor's effectiveness in facilitating interactions using the game media. Findings guided final revisions to strengthen the media's substantive, technical, and pedagogical suitability for school counseling.

Results

A needs assessment was conducted with eighth-grade students at Junior High School 1 Loa Janan to identify the level of interpersonal communication skills. The questionnaire used in this stage was constructed based on interpersonal communication indicators proposed by DeVito (2016): openness, empathy, supportiveness, positive attitude, and equality. This interpretation scale (adapted from Rustandi A and Rismayanti, 2021) uses the likert scale analysis technique by changing qualitative data into quantitative data with the score provisions as seen in Table 1, as follows:

Table 1. Score Interpretation

Score Range	Classification
5	Very Suitable
4	Suitable
3	Fairly Suitable
2	Less Suitable
1	Not Suitable

$$\text{Mean} (\bar{x}) = \frac{\sum x}{N}$$

Description :

$\bar{x}$: Average Score

$\sum x$: Total Score

N : (Indicator × Respondent)

Meanwhile, the formula used to calculate the average percentage of assessments from material experts, media experts, and guidance and counseling experts is as follows, accompanied by the feasibility scale for the counseling media.

Table 2. the Feasibility Scale for the Counseling Media

Score Range	Classification
x>81%	Very Suitable
61%<x≤80%	Suitable
41%<x≤60%	Fairly Suitable
21%<x≤40%	Less Suitable
x≤20%	Not Suitable

$$Xi = \frac{\sum s}{Smax} \times 100\%$$

Describtion :

Smax : Maximum Score

$\sum s$: Total Score

Xi : Questionnaire feasibility score for each aspect

Figure 1. Initial Design Make the Dayak Culture

Figure 2. Ular Tangga SIAGA Design (25 Truths, 10 Dares, and 4 Boms)

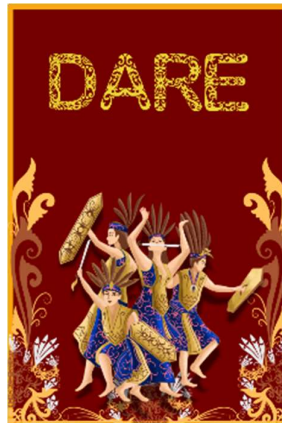**Figure 3.** Design of Rules and Guidelines for the Ular Tangga SIAGA

Figure 4. Back Design 25 Truths Cards

Figure 5. Back Design 15 Changes Cards

Figure 6. Back Design 10 Dares Card

At the analysis stage, researchers conducted a needs assessment of 100 eighth-grade students at Junior High School 1 Loa Janan related to interpersonal communication skills. Data were collected through questionnaires, interviews with Guidance and Counseling (BK) teachers, and observations of the school environment. The questionnaire, adapted from Nurul Fadilah (2022) in her study "Group Guidance Using the Halaqah Method to Improve Student Interpersonal Communication", consisted of 25 items measuring five indicators of interpersonal communication (DeVito, 2016): openness, empathy, supportiveness,

positiveness, and equality. An example item was, "I feel comfortable expressing my opinion in front of my peers," using a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The adapted instrument was tested for content validity and reliability, showing a validity coefficient between 0.72–0.84 and a Cronbach's Alpha of 0.89, indicating strong internal consistency

From the 100 students, 15 participants were selected to join two group counseling trials, while two students participated in individual counseling sessions for interviews and prototype testing. Questionnaire results showed that students scored low on openness and empathy, with communication barriers linked to economic differences, physical limitations, and low self-confidence. Counseling teachers also reported difficulty identifying students' problems due to limited two-way communication, underscoring the need for innovative counseling media that fosters interpersonal expression. In the media design stage, the Ular Tangga SIAGA game was developed for both individual and group counseling. It consists of a Snakes and Ladders board, three supporting cards (Truth, Dare, and Change), and a play guide sheet. To enhance cultural relevance, each card integrates Dayak cultural symbols the hornbill (Burung Enggang) for truth and wisdom, Tari Mandau for courage, and Batang Garing for balance and hope. The design emphasizes accessibility and interaction for players aged 13+ and above, with a maximum of five participants, ensuring a flexible, engaging, and inclusive counseling experience.

At the development stage, a prototype was created and validated by three experts: two lecturers from the Guidance and Counseling Department at Mulawarman University and one school counselor. The material aspect received a mean score of 90% (very suitable), though some language simplification was suggested. The media aspect scored 80% (suitable), with recommendations to remove items not aligned with Dayak culture. The educational aspect achieved the highest score of 92.4% (very suitable). These findings confirm that the media is feasible and ready for limited use in school counseling settings. This research focused on the expert validation stage to ensure the feasibility and readiness of the Ular Tangga SIAGA counseling media prior to field implementation. Although post-test and large-scale trials have not yet been conducted, the expert evaluations indicate that the media is highly appropriate, engaging, and has strong potential to enhance interpersonal communication among junior high school students

Discussion

The findings show that Ular Tangga SIAGA effectively improves students' interpersonal communication, especially in openness and empathy, which are essential in building healthy relationships (DeVito, 2016). The results align with the Adlerian counseling approach, which emphasizes social interest and cooperation as the basis of interpersonal growth (Adler, 1964; Corey, 2016). The media provides a safe and enjoyable space that reduces communication anxiety and supports self-expression among students. Although Ular Tangga SIAGA is designed to enhance interpersonal communication, several potential challenges may arise during its implementation in schools. These include time constraints in the school schedule that limit opportunities for gameplay, differences in student motivation or willingness to

participate, limited resources or space to accommodate group sessions, and the need for adequate guidance and familiarity from teachers or counselors to facilitate the game effectively. Additionally, cultural or personality differences among students may require adaptations to ensure the game is inclusive and engaging for all participants.

The success of this media reinforces the effectiveness of game-based counseling, as found in previous studies showing that games increase motivation, engagement, and reflective participation (D. Wulandari, 2020). Through the Truth, Dare, and Change cards, students were encouraged to express feelings honestly and interact naturally, similar to the findings of Rahayu and Sulastri (2021). The structured use of the ADDIE model (Branch, 2016) ensured systematic product development, resulting in high validation scores in content (90%), media (80%), and educational aspects (92.4%).

From the Social Learning Theory perspective (Bandura, 1977), students learned positive communication behaviors through peer modeling during gameplay. This process aligns with Self-Determination Theory (Deci & Ryan, 2000), where autonomy and relatedness enhance intrinsic motivation. The inclusion of Dayak cultural symbols are *Burung Enggang, Tari Mandau,* and *Batang Garing* strengthened students' cultural identity and emotional connection, consistent with culturally responsive counseling principles (L. A. Jones et al., 2021; Vella et al., 2021).

Compared with previous studies (Rahmania, 2022; Melsi, 2015), this research offers novelty by integrating Adlerian principles, local culture, and game-based learning into one counseling medium. While earlier works focused on family communication, this study demonstrates that school-based interventions can compensate for limited emotional support at home. The counselor's role as facilitator remains crucial in maintaining openness and reflection during sessions (L. Jones et al., 2021; Stein, 2021). Although *Ular Tangga SIAGA* is expected to enhance students' interpersonal communication, potential challenges may arise, such as limited time during school hours, differences in student motivation to participate, and the need for adequate guidance from teachers or counselors. Adaptations may also be necessary to accommodate diverse personalities and ensure the game is engaging for all students.. Future research should test the media across diverse populations and over longer durations. Overall, *Ular Tangga SIAGA* presents an innovative, culturally adaptive counseling tool that enhances interpersonal communication and supports students' socio-emotional development.

Novelty of the Research

This research introduces an innovative integration of the Adlerian counseling approach, game-based learning, and local cultural values into a single counseling medium called *Ular Tangga SIAGA.* Unlike previous studies that focused only on educational or therapeutic games, this study emphasizes the development of interpersonal communication skills through experiential and reflective gameplay. The incorporation of Dayak cultural symbols *Burung Enggang, Tari Mandau,* and *Batang Garing* creates a culturally responsive and inclusive counseling environment rarely explored in prior research (Hanum, 2018). Furthermore, the systematic application of the ADDIE development model ensures that the product meets pedagogical, psychological, and cultural feasibility standards. This combination presents a

new model of culturally grounded counseling media that enhances openness, empathy, and communication among students in Indonesian schools.

Implications and Contributions

The findings of this study have several important implications for theory, practice, and policy. Theoretically, this research strengthens the integration of Adlerian counseling principles (Adler, 1964; Corey, 2016) with Social Learning Theory (Bandura, 1977) and Self-Determination Theory (Deci & Ryan, 2000) within a game-based context, demonstrating how experiential learning can foster openness and empathy in adolescents. Practically, the *Ular Tangga SIAGA* media provides counselors with a flexible, culturally relevant tool to facilitate interactive and reflective communication during individual or group counseling sessions. It also encourages a more engaging, student-centered counseling approach that reduces communication barriers.

From a policy perspective, this research supports the inclusion of culturally adaptive counseling media in school-based mental health programs to improve social-emotional learning outcomes. For future research, the model can be expanded across different age groups, school settings, and cultural backgrounds to further test its adaptability and long-term impact on interpersonal skill development.

Research Limitations

This study has several limitations that should be acknowledged. First, the sample size was relatively small and homogeneous, consisting only of eighth-grade students from one junior high school, which limits the generalizability of the findings. Second, the implementation period of six weeks may not have been sufficient to observe long-term behavioral changes in students' interpersonal communication. Third, the use of quantitative observations and expert validation provides valuable insights but may introduce subjectivity in data interpretation. In addition, the cultural context of the Dayak symbols used in the game may not be equally relevant for students from different regions or ethnic backgrounds. Future research should involve a larger and more diverse population, employ mixed-method approaches, and extend the duration of implementation to evaluate the sustained effects and cross-cultural adaptability of *Ular Tangga SIAGA* as a counseling tool.

Conclusion

Based on the study's findings, the *Ular Tangga SIAGA* media was validated as feasible and appropriate for use in school counseling to enhance students' interpersonal communication skills. The expert validation results showed an average score of 4.50 for the material aspect, 4.00 for the media aspect, and 4.62 for the educational aspect, all of which fall into the "very feasible" category. These results explicitly address the study's objective—to develop and validate a culturally responsive counseling medium that supports interpersonal communication among students. The media particularly targets the openness and empathy indicators identified by DeVito (2019) as areas where students most frequently experience challenges. Expert feedback and limited trials indicated that the Truth and Dare cards effectively foster honesty, confidence, and emotional awareness in a supportive, game-based context.

The integration of the Adlerian approach with local Dayak cultural elements makes the media both engaging and meaningful for students' personal and social development. By creating a safe, flexible, and inclusive communication environment, the *Ular Tangga SIAGA* media demonstrates strong potential as an alternative tool for counseling services in schools.

Future studies are recommended to conduct broader field testing with diverse student populations and quantitative assessments to examine their long-term impact on interpersonal communication behaviors. The development of a digital version and a systematic implementation guide will also improve accessibility and sustainability through collaboration among counselors, educators, and media developers.

Author Contributions

AIR carried out all stages of the research, including conceptualization, methodology design, data collection, analysis, and manuscript writing. S contributed as the supervising lecturer, providing direction, validation, and critical review of the manuscript. Both authors agreed on the final version of the paper.

Declaration of Conflicting Interests

The authors declare that there is no potential conflict of interest concerning the research, authorship, and/or publication of this article.

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