



Developing Pac-Man Counseling Media to Improve Problem-Solving in Middle School Group Guidance: Testing Feasibility and Practicality

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ABSTRACT

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This study aims to develop the BK Pac-Man Media and test its feasibility and practicality in group guidance services. The research uses a Research and Development (R&D) method with the 4D model (Define, Design, Develop, and Disseminate). Field activities were carried out on June 23–24, 2026, at a private junior high school in Deli Serdang Regency, North Sumatra, while the development process was carried out gradually according to the 4D model. The evaluation subjects consisted of one media expert, one material expert, one BK teacher, and eight eighth-grade students selected purposively. Data were collected through observation, interviews, and a five-point Likert scale questionnaire, and then analyzed descriptively using percentages. The media developed consist of a maze board, Pac-Man balls, problem cards, clue cards, worksheets, game symbols, role-play equipment, and a guidebook that integrates five stages of problem solving. Initial validation results showed a feasibility percentage of 91.54% from media experts and 92.73% from content experts, both falling into the very feasible category. After product revisions, the practicality assessment based on user perception obtained 90.83% from students and 95.00% from school counselors, both considered very practical. Therefore, the Pac-Man Counseling Media meets the initial feasibility and practicality criteria for limited use in group guidance services.

Keywords: *Group Guidance Media, PAC-MAN Counseling, Problem Solving, Research and Development, 4D Model*

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INTRODUCTION

Education at the junior high school level is not just focused on academic achievement, but also on developing personal, social, learning, and decision-making skills (Wirayudha & Hariastuti, 2026). In early adolescence, students face various issues like friendships, learning difficulties, self-adjustment, social conflicts, and decision-making (Batubara & Dewi, 2024). This situation requires problem-solving skills so that students can recognize problems, understand the causes, consider alternatives, and determine solutions accurately.

In guidance and counseling, problem-solving skills can be developed through group counseling services. These services give students the chance to share experiences, express opinions, understand their friends' perspectives, and look for alternative solutions to problems together (Kamilah & Asni, 2024). However, its implementation requires interactive media that matches the characteristics of middle school students so that they are more active and not just passively receiving the material verbally.

One innovation that can be developed is the Pac-Man BK media, which adapts the Pac-Man game concept into problem-solving exercises (Kurniasari & Setiawati, 2026). Games can include problem situations, choices of actions, and decision consequences that guide students to recognize problems, identify causes, find alternatives, consider consequences, decide on solutions, and reflect (Hermanto, Sahertian, & Niswatin, 2024). Thus, Pac-Man BK is not just a game, but a learning medium that provides hands-on experience in practicing problem-solving.

The development of the Pac-Man BK media is relevant to be applied to students of Bandung Private Junior High School, Jl. Pengabdian No. 14, Bandar Setia, Percut Sei Tuan District, Deli Serdang Regency, North Sumatra. The game materials can be adjusted to problems that are close to the students' lives, such as friendship conflicts, communication difficulties, learning problems, peer pressure, and decision-making. Through games and group discussions, students can explain their reasons for choices, consider the consequences, and compare various alternative solutions to problems.

Based on the description, developing the Pac-Man BK Media for Problem Solving Exercises in Middle School Student Group Guidance is important as an innovation in counseling and guidance media. The development of the media needs to consider the appropriateness of the material, problem-solving stages, clarity of instructions, language, design, and ease of use. Therefore, this study focuses on testing the feasibility and practicality of the Pac-Man BK media as an alternative game-based medium that is interesting, easy to use, and supports middle school students' problem-solving skills practice.

Previous research shows that group counseling services using a problem-solving approach can support various aspects of student development. (Cahyani & Prihandini, 2026) found that group guidance using problem-solving techniques can improve middle school students' adversity quotient, while (Anantrasirichai & Bull, 2022) showed an increase in middle school students' assertive behavior through problem-solving techniques. (Hong, Jeong, Vecchietti, Har, & Kim, 2021) Also found that using simulation games in group guidance can improve the problem-solving skills of 9th grade junior high students. The findings show that group guidance, problem-solving techniques, and games can be approaches that support the development of students' skills.

Even so, there is still a research gap in developing media that specifically integrates games with problem-solving exercises in junior high school group guidance. (Budiarto, Moonlight, Agus, Musadek, & Anifa, 2025; Deisanti & Listyaputri, 2026) puts more emphasis on applying services and measuring results, rather than developing media products specifically for problem-solving practice. (Dita, Tari, & Suastini, 2026) Using simulation games, but it hasn't yet focused on developing Pac-Man media that include problem scenarios, alternative choices, decision consequences, and reflection. Meanwhile, the development of the board game "Lintas Rasa" and the Hockey Soccer game in previous research has shown the use of games in guidance services, but the focus is different from problem-solving skills. So, there's still room to develop game media that integrates group guidance dynamics with problem-solving stages.

Based on that research gap, the novelty of this study lies in developing the Pac-Man BK Media as a game-based tool specifically for problem-solving training in group guidance for

private junior high school students in Bandung, located at Jl. Pengabdian No. 14, Bandar Setia, Percut Sei Tuan District, Deli Serdang Regency, North Sumatra. The new aspect of this research is the integration of the Pac-Man game concept with activities like recognizing problems, identifying alternative solutions, considering consequences, making decisions, and reflecting. Additionally, the study focuses on feasibility and practicality tests based on content, design, language, procedures, and ease of use, resulting in an alternative interactive BK media that suits the needs of BK teachers and junior high school students.

METHODS

This study is a research and development (R&D) study using the 4D model (Thiagarajan, Semmel, & Semmel, 1974), which includes Define, Design, Develop, and Disseminate. The Define stage covers the analysis of needs, student characteristics, tasks, problem-solving concepts, and goals through observations, interviews, and questionnaires. The Design stage involves designing the game, problem and solution cards, instruments, and guides. The Develop stage includes product creation, expert validation, revision, and limited testing, while Disseminate is carried out on a limited basis through the introduction and use of the product by guidance counselors. The media is developed based on the five stages of problem solving (Azwar, 2019), which are problem orientation, problem formulation, searching for alternatives, decision making, as well as implementation and verification of solutions.

The research was carried out at a private junior high school in Bandung, Jl. Pengabdian No. 14, Bandar Setia, Percut Sei Tuan District, Deli Serdang Regency, North Sumatra, with field activities on June 23–24, 2026. The limited trial subjects consisted of eight 8th-grade students, selected purposively based on class suitability, willingness to participate, ability to follow instructions, and recommendations from the school counseling teacher. Validators included one counseling expert and one media expert, while the field practitioner was one counseling teacher. The version 1 product was validated and revised into version 2 before the student trial, and the trial results were used to improve the final product. This number of subjects was used for initial evaluation and was not intended for generalizing to the population.

Data were collected through observation, interviews, and a five-point Likert questionnaire. The instruments included a student needs questionnaire, 22 items validated by content experts, 26 items validated by media experts, 20 items of counselor responses, and 18 items of student responses. The assessment aspects covered material, problem-solving theory, card content, language, presentation, appearance, component quality, ease of use, benefits, group dynamics, appeal, and user experience (Riduwan, 2018). Content validity was obtained through expert assessment, while statistical reliability was not used as a basis for generalization because the trial only involved eight students. Feasibility was used to assess the appropriateness of the content and design, while practicality evaluated the ease, comprehensibility, appeal, and implementability of the media. Quantitative data were analyzed descriptively by calculating the percentage of scores obtained against the maximum score using a formula (Sukmadinata, 2017):

$$P = \frac{\sum X}{\sum X_{\max}} \times 100\%$$

Description:

P = assessment percentage,

$\sum X$ = total score obtained,

$\sum X_{\max}$ = maximum score.

The feasibility and practicality of the product are determined based on the percentage ranges in Table 1, with categories of very feasible/very practical, feasible/practical, average, less, and not feasible/not practical. The product is considered to meet the criteria if it reaches the feasible or very feasible category. Quantitative data are analyzed using frequency and percentage, while qualitative data from observations, interviews, and comments from validators, school counselors, and students are analyzed descriptively based on aspects and used as a basis for product revisions.

The study paid attention to ethics because it involved students under the age of 18. Implementation was carried out after obtaining school permission, parental consent, and student assent, with participant identities coded. The problem cards used hypothetical situations so that students wouldn't have to reveal personal, sensitive experiences. The school counselor guided the activity and conducted a debriefing after the game. The dissemination stage was limited to counselors and the school, so the study results are positioned as an initial evaluation of feasibility and practicality, rather than proof of the media's effectiveness (Mulyatiningsih, 2014).

Table 1. Stages and Timeline of Pac-Man BK Media Development

Stage	Activities	Implementers	Output
Define	Preliminary analysis, learner characteristics, needs analysis, task analysis, <i>problem-solving</i> concepts, and formulation of objectives	Researcher, school counselor, students	Media specifications
Design	Designing the game, cards, rules, instruments, and user manual	Researcher	Version 1 product
Develop 1	Validation by material and media experts	Validators	Validation results
Develop 2	Product revision based on expert validation	Researcher	Version 2 product
Develop 3	Limited trial involving 8 students and evaluation by the school counselor	Researcher, school counselor, students	Practicality data
Develop 4	Revision based on the trial results	Researcher	Final product
Disseminate	Limited introduction and implementation of the product	Researcher, school counselor	Product ready for limited use

Table 2. Criteria for Interpreting Product Feasibility

Percentage	Category
81%–100%	Highly Feasible
61%–80%	Feasible
41%–60%	Moderately Feasible
21%–40%	Less Feasible
0%–20%	Not Feasible

RESULTS AND DISCUSSION

Result

Define Stage: results of the needs analysis

The Define stage was conducted through observation, interviews, and a student needs questionnaire. Observations were carried out over two meetings, each lasting approximately 60 minutes, using an observation guide covering the implementation of guidance and counseling (GC) services, student activities, media use, and student involvement in problem solving. The

observations indicated that GC services were still predominantly delivered through individual counseling, discussions, and verbal guidance, while the use of interactive game-based media remained limited. Some students also demonstrated inconsistency in identifying the main problem, generating alternative solutions, considering consequences, and evaluating solutions. These findings were used as an initial description of the needs underlying the development of the media.

A semi-structured interview was conducted with one school counselor for approximately 30–45 minutes. The counselor reported that students experienced several issues, including low self-confidence, difficulties in self-regulation, peer conflicts, difficulties in social interaction, lack of focus, and limited responsibility for completing tasks. The counselor also indicated that students needed activities that provided opportunities to practice problem-solving directly through interactive activities with clear procedures and instructions. The observation and interview findings were subsequently compared with the results of the student needs questionnaire as a form of data-source triangulation.

Table 3. Results of the Student Needs Questionnaire

Dimension	SA n (%)	A n (%)	N n (%)	D n (%)	SD n (%)
A. Need for Problem-Solving Practice					
<i>General Orientation</i> – identifying the main problem	9 (37.5%)	13 (54.2%)	0 (0%)	2 (8.3%)	0 (0%)
<i>Problem Definition and Formulation</i> – identifying the causes	11 (45.8%)	12 (50.0%)	0 (0%)	1 (4.2%)	0 (0%)
<i>Generation of Alternatives</i> – seeking alternative solutions	16 (66.7%)	8 (33.3%)	0 (0%)	0 (0%)	0 (0%)
<i>Decision Making</i> – considering and making decisions	12 (50.0%)	10 (41.7%)	0 (0%)	2 (8.3%)	0 (0%)
<i>Verification</i> – implementing and evaluating solutions	13 (54.2%)	11 (45.8%)	0 (0%)	0 (0%)	0 (0%)
Total Need for Problem-Solving Practice	61 (50.8%)	54 (45.0%)	0 (0%)	5 (4.2%)	0 (0%)
B. Need for Media					
Media for practicing <i>problem solving</i>	13 (54.2%)	11 (45.8%)	0 (0%)	0 (0%)	0 (0%)
Attractive, interactive, and easy-to-use media	16 (66.7%)	8 (33.3%)	0 (0%)	0 (0%)	0 (0%)
Alignment with <i>problem-solving</i> stages	15 (62.5%)	9 (37.5%)	0 (0%)	0 (0%)	0 (0%)
Student involvement	11 (45.8%)	8 (33.3%)	0 (0%)	5 (20.8%)	0 (0%)
Alignment with group guidance	12 (50.0%)	10 (41.7%)	0 (0%)	2 (8.3%)	0 (0%)
Total Need for Media	67 (55.8%)	46 (38.3%)	0 (0%)	7 (5.8%)	0 (0%)

Note:

SA = Strongly Agree;

A = Agree;

N = Neutral;

D = Disagree;

SD = Strongly Disagree.

Each indicator consisted of three items, resulting in 24 responses per indicator and 120 responses for each dimension.

Based on Table 3, the overall need for problem-solving practice was 88.50%, which was categorized as very high, while the need for media reached 88.83%, also falling within the very high category. For the problem-solving practice dimension, the highest percentage of Strongly Agree responses was found in Generation of Alternatives at 66.7%. Meanwhile, for media needs, the highest percentage was observed for the characteristic of being attractive, interactive, and easy to use, also at 66.7%. The student involvement aspect included five out of 24 responses (20.8%) in the Disagree category, indicating variation in responses to this aspect. Overall, the findings demonstrate a need for media that can provide more interactive problem-solving practice and support student involvement in group guidance services. These findings served as the basis for developing the Pac-Man BK Media in the Design stage.

Design Stage: product design

The Pac-Man BK Media was developed as a non-electronic guidance and counseling game-based medium designed to provide problem-solving practice within group guidance services. The media consists of a maze board, a Pac-Man ball, problem cards, clue cards, pearl and ghost symbols, worksheets, role-play materials, and a user guidebook. The game was designed to integrate the five problem-solving stages sequentially. General Orientation focuses on recognizing the problem situation and readiness to address the problem; Problem Definition and Formulation focuses on defining the problem and identifying its causes; Generation of Alternatives focuses on developing alternative solutions; Decision Making focuses on selecting an appropriate solution; and Solution Implementation and Verification focuses on simulating the solution and reflecting on its initial feasibility.

Table 4. Application of the Problem-Solving Stages in Pac-Man BK Media

Problem-Solving Stage	Student Activities	Media Components
General Orientation	Recognizing the problem situation, the desired condition, and readiness to address the problem	Problem cards, <i>clue</i> cards, worksheets, pearls
Problem Definition and Formulation	Determining the main problem and identifying possible causes	<i>Clue</i> cards, worksheets, ghosts, pearls
Generation of Alternatives	Generating 4–5 alternative solutions	<i>Clue</i> cards, worksheets, pearls
Decision Making	Comparing advantages, disadvantages, and consequences, and selecting a solution	<i>Clue</i> cards, worksheets, ghosts, pearls
Solution Implementation and Verification	Practicing the solution through <i>role play</i> and reflecting on its initial feasibility	<i>Clue</i> cards, worksheets, <i>role-play</i> materials, pearls

The media is implemented in groups of four students. Two students are responsible for controlling the board by tilting it to move the ball, one student records the discussion outcomes, and one student reads the clue cards and assists with time management. Roles can be rotated throughout the game to ensure that all group members participate. The maze challenge serves as an introductory activity to practice coordination, communication, task distribution, and group decision-making, rather than constituting an additional problem-solving stage. After completing the maze, the group selects a problem card and proceeds through the five stages sequentially. Each successfully completed stage is marked with one pearl symbol, resulting in five pearls representing the five problem-solving stages.

The user guidebook serves as a supporting component containing the service objectives, target users, media components, preparation procedures, role distribution, game rules, implementation steps, instructions for using the clue cards, role-play procedures, reflection, and debriefing. The activity is designed to be completed in a single 45-minute group guidance session. The media is not intended to determine a winner based on game speed but rather to facilitate students' engagement in a collaborative and systematic problem-solving process. The role play in the final stage is used to examine the initial feasibility of a solution in a simulated situation and therefore is not interpreted as evidence of successful implementation of the solution in real-life contexts.

Develop Stage: expert validation, revision, and practicality testing

The expert validation results presented in Table 5 represent an assessment of the initial product before revision. The media expert obtained a score of 119/130 (91.54%), while the material expert obtained a score of 102/110 (92.73%); both were categorized as highly feasible. Nevertheless, the validators provided recommendations for improvement concerning text size, layout, clarity of instructions, component durability, and the suitability of the problem examples to students' experiences. The substantive revisions included replacing the game piece with a ball and expanding the problem cards from friendship-related contexts to personal, social, and learning contexts. No revalidation was conducted; therefore, the scores presented in Table 5 represent the results obtained before revision. The student trial was conducted using the revised version of the product. Item-level scores are not presented separately because the data were documented as aggregate scores for each assessment aspect.

Table 5. Expert Validation Results

Assessment Aspect	Score	Maximum Score	Percentage (%)	Category
A. Media Expert Validation (n = 1)				
Media appearance	27	30	90.00	Highly Feasible
Quality of media components	23	25	92.00	Highly Feasible
Ease/practicality of use	22	25	88.00	Highly Feasible
Alignment of the media with service objectives	24	25	96.00	Highly Feasible
Attractiveness and practicality of the media	23	25	92.00	Highly Feasible
Total	119	130	91.54	Highly Feasible
B. Material Expert Validation (n = 1)				
Material suitability	33	35	94.29	Highly Feasible
Alignment with <i>problem-solving</i> theory	28	30	93.33	Highly Feasible
Suitability of game card content	18	20	90.00	Highly Feasible
Language and presentation	14	15	93.33	Highly Feasible
Usefulness of the media	9	10	90.00	Highly Feasible
Total	102	110	92.73	Highly Feasible

The validators' recommendations were used to revise the nine media components presented in Table 5. The major revisions included replacing the game piece with a ball that is moved collaboratively, expanding the problem cards from an initial focus on friendship-related issues to three categories personal, social, and learning—and assigning a dual function to the ghost symbols

so that the game elements were connected to students' thinking processes. The main components of the final product are presented in Table 6.

Table 6. Main Components of the Revised Pac-Man BK Media

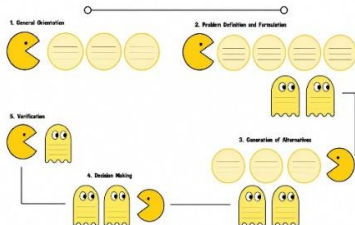
Component	Function	Image
Game board	Serves as a maze arena to practice coordination, communication, and group cooperation before entering the <i>problem-solving</i> stages.	
Problem cards	Present problems that are relevant to students' experiences, covering personal, social, and learning-related issues.	
Clue cards	Provide guiding questions at each <i>problem-solving</i> stage to help students follow the process systematically.	
Worksheet	Used to record the processes of problem identification, identification of causes, generation of alternative solutions, decision-making, and solution reflection.	
Pac-Man ball	Replaces the game piece used in the initial product and is moved by tilting the board together by two group members, thereby encouraging coordination and cooperation.	

Table 7. Summary of Revisions Based on Validator Suggestions

Component	Validator Recommendations	Changes to the Product
Game board	Improve the size, function, pathways, and durability	The pathways were clarified, the layout was adjusted, and the materials were reinforced

Component	Validator Recommendations	Changes to the Product
Pac-Man ball	Make the movement mechanism more interactive	The game piece was replaced with a ball that is moved by tilting the board collaboratively by two group members
Problem cards	Expand the problems and adapt them to students' experiences	The problems were categorized into personal, social, and learning-related issues
Clue cards	Simplify the guiding questions	The questions were organized according to the five <i>problem-solving</i> stages using concise wording
Pearls	Clarify their function as stage markers	Used to mark the completion of the five <i>problem-solving</i> stages
Ghosts	Clarify their function on the board and worksheets	Serve as obstacles on the board and as markers of identified causes and selected solutions
Worksheet	Align with the five stages	The layout and font size were standardized
Problem box	Clarify the card-drawing mechanism	Cards are drawn randomly after the board challenge is completed
Storage box	Adjust the size and durability	The storage space was adjusted to accommodate all components and reinforced for greater durability

Based on Table 7, revisions were made to all major components of the Pac-Man BK Media, particularly in terms of functionality, appearance, clarity of instructions, and alignment with the problem-solving stages. The revised product was subsequently used in a limited trial involving eight Grade VIII students and one school counselor. The implementation followed the instructions provided in the user guidebook; however, the study did not systematically record the duration of the activity or conduct quantitative observations of the completion of each stage. Therefore, the trial results were limited to practicality based on user perceptions, as presented in Table 8.

Table 8. Practicality Test Results Based on Student and School Counselor Responses

Assessment Aspect	Score	Maximum Score	Percentage (%)	Category
A. Student Responses (n = 8)				
Media attractiveness	114	120	95.00	Highly Practical
Ease of use	110	120	91.67	Highly Practical
Usefulness of the media	180	200	90.00	Highly Practical
Group dynamics	141	160	88.13	Highly Practical
Experience and usefulness	109	120	90.83	Highly Practical
Total	654	720	90.83	Highly Practical
B. School Counselor Response (n = 1)				
Ease of use	18	20	90.00	Highly Practical
Contribution to GC services	28	30	93.33	Highly Practical
Group dynamics	24	25	96.00	Highly Practical
Media quality	25	25	100.00	Highly Practical
Total	95	100	95.00	Highly Practical

The results presented in Table 8 show that the Pac-Man BK Media obtained an overall practicality percentage of 90.83% based on responses from eight students and 95.00% based on the response of one school counselor, both of which were categorized as highly practical. Among the students, media attractiveness received the highest percentage at 95.00%, whereas group

dynamics received the lowest percentage at 88.13%, although it remained within the highly practical category. Meanwhile, the school counselor's assessment showed the highest percentage for media quality at 100.00%, followed by group dynamics at 96.00%, contribution to GC services at 93.33%, and ease of use at 90.00%. These findings indicate that, from the users' perspectives, the media was perceived as attractive, easy to use, useful, and supportive of group activities.

However, these results should be interpreted proportionally because the practicality test in this study measured users' perceptions of the media rather than changes in students' problem-solving abilities. The assessment also involved a limited number of users, namely eight students and one school counselor. Therefore, the percentages of 90.83% and 95.00% cannot be used to conclude that the Pac-Man BK Media has been proven to improve students' problem-solving abilities. The conclusions of the study are therefore limited to the finding that the product demonstrated initial feasibility and high perceived practicality for limited use in group guidance services.

Disseminate Stage

The Disseminate stage is carried out on a limited basis through the socialization of the BK Pac-Man Media and the guidebook to school counselors at the research schools, as well as presenting the development results. This activity aims to introduce the product and how to use it to practitioners. Wider distribution to other schools or users has not been done yet, so the Disseminate stage in this research is still limited to the research school environment. The Disseminate stage is carried out on a limited basis through the socialization of the BK Pac-Man Media and the guidebook to school counselors at the research schools, as well as presenting the development results. This activity aims to introduce the product and how to use it to practitioners. Wider distribution to other schools or users has not been done yet, so the Disseminate stage in this research is still limited to the research school environment.

Discussion

The research results show that the development of Pac-Man BK Media has a strong foundational need in carrying out guidance and counseling services at schools. At the define stage, it was found that guidance and counseling services are mostly conducted through discussions, giving directions, and verbal communication, while the use of interactive game media is still limited. This situation runs alongside students' difficulties in recognizing the main problems, identifying causes, generating solution alternatives, considering consequences, and evaluating solutions. The survey results further reinforce those findings, showing that the need for problem-solving training reached 88.50%, while the need for media reached 88.83%, both falling into the very high category. These findings indicate that students' needs are not only about being given information on problem-solving but also about having experiences that allow them to practice directly through activities involving thinking, communication, decision-making, and reflection.

The findings are related to the development of research on game-based learning. Educational games can create a more active learning experience because students not only receive information but also take action, try strategies, interact, and make decisions. (Ashari & Nasution, 2024; Wei, Wang, Lee, & Liu, 2025). Through a systematic review of 45 studies on board games, tabletop games, and analog games, it shows that games have the potential to support a variety of cognitive, psychological, and social outcomes, including engagement, satisfaction, flexibility, and opportunities to experiment. However, the research also emphasizes that the educational value of a game is greatly influenced by the relationship between game mechanics and learning objectives.

In the context of this study, this principle is reflected in the design of the Media Pac-Man BK, which doesn't make the game just an entertainment activity but connects each game component with the stages of problem solving.

The uniqueness of the Pac-Man BK Media lies in the integration between physical gameplay mechanisms and the thinking structure in problem-solving. This media guides students through five stages: General Orientation, Problem Definition and Formulation, Generation of Alternatives, Decision Making, and Solution Implementation and Verification. In the first stage, students are guided to understand the problem conditions and the desired outcomes; the second stage focuses on identifying the main problem and its causes; the third stage guides students to generate several alternatives; the fourth stage invites students to compare options and determine a solution; while the fifth stage provides the opportunity to simulate and reflect on the chosen solution. This structure gives the game a clear pedagogical flow because the playing activities are directed towards a specific thinking process. This aligns with findings (Jauhari, 2025; Putri, Kasih, & Kardo, 2026) that board game-based learning can be designed by integrating the concepts of problem-solving, learning processes, material, and game mechanics. Their research also found positive student engagement as well as improvements in behavior and problem-solving skills after participating in game-based learning.

The use of maze boards in Pac-Man BK Media also has a broader function than just providing a game element. The maze is placed as a preliminary activity used to build coordination, communication, role sharing, and group decision-making before students enter the problem-solving stage. Thus, the maze is not positioned as the sixth stage of problem solving, but rather as a bridge to the core activity. This placement is important because the game's mechanism should support the learning objectives and not distract students from the main goal. Research (Olsson & Granberg, 2024; Roza, Hutasuhut, Syaimi, & Asyah, 2025) emphasizes that one of the issues in developing educational games is that there are still games that look appealing, but the connection between game design and learning objectives isn't strong enough. Therefore, the decision to make the maze a preliminary activity shows an effort to keep a clear boundary between game mechanics and problem-solving stages.

The cooperative aspect is also an important part of the Pac-Man BK Media design. The game is played in groups with divided roles: two students control the board by tilting it to move the ball, one student records the discussion results, and one student reads the clue cards and helps manage the game process. This division gives group members the opportunity to participate in different functions and allows for communication and coordination. This characteristic is relevant to group counseling services, which consider interaction among members as an important part of the service process. Review (Mutanga, 2024; Zahira, Asyah, Saragih, & Zulkarnaen, 2025) Research on cooperative board games shows that cooperative game mechanics can support engagement, teamwork, and strategic problem-solving. The study also highlights the importance of role allocation, role-playing, and designing rules that match user characteristics so that the game can function optimally in an educational context. Thus, role allocation in Media Pac-Man BK is not just part of the game rules, but can be seen as a mechanism that supports group interaction.

The expert validation results supported the initial feasibility of the product. The media experts scored it 91.54%, while the subject matter experts scored it 92.73%, and both were in the very feasible category. However, these high scores don't mean the product is ready in its final form. The validators still gave feedback on text size, layout consistency, clarity of instructions, component durability, and how well the example problems matched student experiences. The

product was then revised by clarifying the game board path, changing the pieces to balls that are moved through coordination between two students, expanding the problem cards to include personal, social, and learning problems, and clarifying the function of the pearl and ghost symbols. The worksheets were also adjusted to follow the five stages of problem solving.

The process shows that product quality can't just be judged by the validation percentage, but also by the qualitative info given by the validators. Percentages give a general idea of feasibility, while validator comments provide info on parts of the product that still need improvement. In development research, combining quantitative assessment with qualitative feedback is important because even products that score high might still have technical aspects that need fixing. In this study, revisions weren't just cosmetic they also touched the game mechanics and content relevance. Changing a piece into a ball, for example, alters interaction patterns because students have to coordinate to control the ball's movement. Likewise, expanding problem cards to cover personal, social, and learning contexts makes the media more flexible for use in guidance and counseling services.

The practicality test results further show positive acceptance of the revised product. Student responses scored 90.83%, while guidance counselors gave a 95.00% score, both falling into the very practical category. Among the students, the attractiveness aspect scored 95.00%, while group dynamics scored 88.13%. Meanwhile, guidance counselors gave a 100.00% score for media quality and 90.00% for ease of use. These results indicate that the Pac-Man BK Media is perceived as engaging, usable, and beneficial in supporting group counseling activities.

The high rating for the aspect of attractiveness can be understood from the characteristics of the Pac-Man BK Media, which uses concrete objects, game boards, balls, problem cards, clue cards, game symbols, worksheets, and role-play activities. These characteristics provide a different experience compared to guidance and counseling services that rely only on verbal delivery. However, attractiveness needs to be applied proportionally. Attractive media can boost students' attention and initial engagement, but it doesn't automatically prove an improvement in problem-solving skills. (Wardana & Rosada, 2024; Song, Huang, Zheng, Fan, & Liu, 2025) It shows that analog games have potential in boosting engagement and providing room for experimentation, but game design still needs to be clearly linked to educational goals. So, in this study, the appeal score is better understood as an indicator of user acceptance of the media, not as proof of effectiveness on students' abilities.

The same thing can be seen in the aspect of group dynamics. The students' score of 88.13% is a positive value, but relatively lower compared to the aspect of engagement. This finding is interesting because it shows that using games doesn't automatically eliminate the possibility of group dynamics that need to be managed. In group guidance activities, students have levels of courage to speak, the ability to collaborate, and a tendency to take on different roles. Therefore, the guidance counselor still plays an important role as a facilitator to ensure that role distribution doesn't just give certain students the chance to be active, but also encourages all members to participate. Review (Hasan, Karamoy, & Mutakin, 2024; Rehman, Huang, & Mahmood, 2026) Regarding cooperative games, it also emphasizes that the cooperation mechanisms, role distribution, and game rules need to be designed in such a way that interactions between players truly support educational goals.

The research findings also need to be read based on their methodological limitations. The Pac-Man BK media in this study was developed to support problem-solving practice, not to prove an improvement in problem-solving skills. The trials conducted focused on the feasibility and practicality of the product, while the study did not use a pretest-posttest design, control group, or

measure changes in students' abilities. Therefore, the practicality scores of 90.83% from students and 95.00% from BK teachers cannot be interpreted as evidence that the media improved problem-solving skills. Limiting claims like this is important to keep the interpretation of results consistent with the research design.

Overall, the research results show that the Pac-Man BK Media contributes to the development of alternative game media in group counseling services. This contribution is evident from the connection between field needs, product design, problem-solving stages, expert validation, revision process, and user acceptance. These findings are in line with the literature showing that board games and analog games can be used to support learning experiences that involve interaction, communication, decision-making, collaboration, and experimentation (Zhang & Zhu, 2024; Ardana, Setyowati, Wahyudi, & Naini, 2026). However, since this study hasn't tested effectiveness yet, the main contribution of the research is more accurately placed on developing a feasible and practical media as a tool for problem-solving practice in group guidance, rather than on proving an increase in students' abilities.

CONCLUSION

This study produced the Pac-Man BK Media as a non-electronic game media to support problem-solving exercises in middle school student group guidance services. The needs analysis showed a problem-solving exercise need level of 88.50% and a media need of 88.83%, while initial validation obtained 91.54% from media experts and 92.73% from content experts, in the very feasible category. After revisions based on the validators' feedback, practicality testing showed student responses at 90.83% and BK teachers at 95.00%, so the media is considered very practical to use in group guidance services. This media has practical implications as an alternative for BK teachers to provide more interactive, collaborative, and structured activities in training students to recognize problems, develop alternatives, make decisions, and reflect on solutions. However, the study has limitations, such as a small number of subjects only 8 students and 1 guidance counselor, no re-validation after revisions, no structured recording of the implementation and duration of each stage, and no measurement of changes in problem-solving skills. Therefore, future research is recommended to involve a larger sample and more schools, re-validate the final product, use observation of implementation and analysis of student worksheets, and test the media's effectiveness through a pretest-posttest design with a control group. This way, future research can provide stronger evidence about the feasibility, usage process, and effectiveness of the Pac-Man BK Media in improving students' problem-solving abilities.

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