



Development of the "Summit Attack" Game Media to Enhance the Memory Skills of Fifth-Grade Elementary School Students at SD IT Ulul Ilmi

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Abstract:

This study developed and evaluated the "Summit Attack: Menuju Puncak" board game as a classical guidance service medium for academic guidance to support elementary school students' memory skill practice. Adopting an adapted Four-D (4D) Research and Development (R&D) model, the study executed the Define, Design, and Develop stages, followed by limited local dissemination. Participants included a material expert (M.Si.), a media expert (M.Pd.), a fifth-grade homeroom teacher, and 20 fifth-grade students. Data were collected via interviews, observations, and content-validated 5-point Likert scale questionnaires, analyzed through quantitative descriptive percentages. Needs analysis confirmed student difficulties across working memory components (phonological loop, visuospatial sketchpad, central executive, and episodic buffer) and a lack of specialized counseling media. Validation results established high product feasibility, with scores of 90% from the media expert and 87% from the material expert. Practicality evaluations yielded 92% from teacher responses and 86% from student responses, both falling into the highly practical category. In conclusion, "Summit Attack" is a highly feasible and practical classical guidance medium for practicing memory tasks; however, as an R&D study without an experimental or pretest-posttest design, these findings demonstrate product quality and user acceptance rather than statistically proven effectiveness in cognitive improvement. Future research should conduct experimental or pretest-posttest studies to evaluate the media's empirical effectiveness across broader student samples.

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Introduction (مقدمة)

Twenty-first-century education focuses not only on achieving learning outcomes but also on developing students' cognitive abilities as a foundation for facing advances in science and technology. One cognitive ability that plays a crucial role in the learning process is memory, which is defined as an individual's ability to receive (encoding), retain (storage), and retrieve (retrieval) information when needed (Baddeley, 2000). This ability serves as the foundation for students in understanding learning materials, solving problems, making decisions, and developing higher-order thinking skills. Low memory capacity can cause students to experience difficulties in understanding concepts, easily forget previously learned material, and suffer a decline in academic performance (Hidayat, 2024); thus, strengthening memory from the elementary school level requires serious attention.

With the development of technology and information, instructional processes in schools are required to be more innovative, interactive, and student-centered. Nevertheless, instructional practices across various elementary schools are still dominated by conventional lecture methods and a lack of varied media, leading students to remain passive. Numerous studies have demonstrated that the implementation of a game-based learning approach can enhance learning motivation, student engagement, thinking skills, and learning outcomes compared to conventional instruction (Wardani & Kiptiyah, 2024). The development of educational game media has also been proven to produce valid, practical, and effective media for increasing the learning activities of elementary school students (Pratiwi & Hardini, 2022).

Initial observations conducted by the researcher at SD IT Ulul Ilmi revealed that some students still experienced difficulties in recalling lesson materials newly presented by the teacher. A portion of the students was not yet able to remember the sequence of information well, lacked precision in paying attention to visual information, and encountered difficulty when asked to recall material covered in previous meetings. These conditions indicate that students' sequential memory, visual memory, working memory, and recall abilities still need to be improved. On the other hand, the learning media and guidance and counseling services utilized in the school are still dominated by explanatory methods and worksheets, which do not yet provide a challenging, enjoyable learning experience capable of systematically training memory skills.

Although numerous studies have explored game-based media and memory enhancement strategies, existing interventions remain fragmented. Lubis (2023) developed a game-based puzzle media to improve elementary mathematics learning outcomes, yet it focused primarily on subject matter mastery rather than cognitive memory training. Similarly, while Jasman (2026) and Humairoh (2023) utilized the Simon Says game to target memory and vocabulary through verbal and reaction-based tasks, their media did not integrate multiple memory dimensions systematically. Furthermore, alternate approaches – such as singing (Akmal, 2022; Siagian, 2025), simulations (Ndasi, 2023), mind mapping (Saud, 2024), science board games (Marinda, 2025), and multimedia systems (Suryani & Hartono, 2021) – confirm that elementary students' memory can be improved through active engagement. However, these studies predominantly focus on academic subject mastery rather than multi-component cognitive memory intervention within guidance and counseling contexts (Dari & Hanggara, 2022; Kurniawati, 2025).

Based on this review, several research gaps exist. First, most studies focus solely on improving learning outcomes, interest, or mastery of specific subjects, whereas research that specifically develops game media to train memory skills in elementary school students remains very limited. Second, previously developed game media generally train only a single aspect of cognitive ability, failing to target the multi-faceted nature of memory processes. Third, research on game media within guidance and counseling services, particularly classical guidance services

in the domain of academic guidance, remains scarce (Dari & Hanggara, 2022). Therefore, this study offers novelty through the development of the "Summit Attack: Menuju Puncak" game media, designed using the Four-D (4D) model to target essential memory sub-skills systematically within a single guidance and counseling media.

Conceptually, the development of the "Summit Attack: Menuju Puncak" game media is grounded in Information Processing Theory and Baddeley's (2000) Working Memory Model. Under Baddeley's framework, working memory consists of the central executive, phonological loop, visuospatial sketchpad, and episodic buffer, which collectively enable individuals to hold and manipulate information. Aligning with this theoretical architecture, the game incorporates dynamic tasks that target specific cognitive sub-components: sequential memory (engaging the phonological loop) at Post 1, visual memory (engaging the visuospatial sketchpad) at Post 2, working memory manipulation (engaging the central executive) at Post 3, symbol association via the Edelweiss Code at Post 4, and combined information retrieval (recall) at Post 5.

The novelty of this study lies in the development of the "Summit Attack: Menuju Puncak" game media as a guidance and counseling service medium, specifically for classical guidance services within the academic guidance domain. Unlike previous studies that predominantly developed games to enhance learning outcomes in specific academic subjects (Gulo & Rizqi, 2023), this media is specifically designed to train memory skills through a series of structured challenges based on Baddeley's memory components using the Four-D (Define, Design, Develop, and Disseminate) model, thereby producing a systematic product ranging from needs analysis to feasibility and practicality testing.

Based on this background, this study aims to develop the "Summit Attack: Menuju Puncak" game media, evaluate its level of feasibility based on material and media expert assessments, and ascertain teacher and student responses toward the developed media as a classical guidance service medium in the domain of academic guidance to help train the memory skills of elementary school students.



Method (منهج)

This research employed a Research and Development (R&D) methodology using the Four-D (4D) model developed by Thiagarajan, Semmel, and Semmel (1974), which comprises the Define, Design, Develop, and Disseminate stages. Given the constraints of time and resources commonly associated with undergraduate thesis research, the Disseminate stage was conducted on a limited scale; furthermore, this study did not adopt a pretest-posttest design as it primarily focused on the development and feasibility of the learning media rather than on experimental measurements of learning outcome improvements (Slamet, 2022; Sugiyono, 2020). Evaluations were carried out through material and media expert validations to ascertain feasibility, alongside response questionnaires administered to the homeroom teacher and students to assess the practicality of the media.

The research subjects comprised one material expert, one media expert, one homeroom teacher acting as a practitioner in the practicality trial, and 20 fifth-grade students at SD Ulul Ilmi Medan Denai serving as respondents for the student response trial. The criteria for selecting the expert validators were strictly based on academic qualifications and domain relevance: (1) the material expert was a university lecturer holding a Master of Science (M.Si.) degree in Psychology, with expertise in cognitive development and academic guidance material; and (2) the media expert was a university lecturer holding a Master of Education (M.Pd.) degree in Guidance and Counseling, with specialized expertise in instructional media design and educational technology.

Data collection was carried out using questionnaires, interviews, and documentation. To ensure instrument validity, all developed data collection instruments—including expert validation sheets, teacher practicality questionnaires, and student response forms—underwent content validity evaluation through expert judgment prior to administration. Questionnaires were utilized for the needs analysis, material expert validation, media expert validation, practitioner trial by the homeroom teacher, and student responses. All questionnaire items were scored using a 5-point Likert scale ranging from 1 to 5 (1 = Strongly Disagree / Highly Unsuitable, 2 = Disagree / Unsuitable, 3 = Neutral / Moderately Suitable, 4 = Agree / Suitable, and 5 = Strongly Agree / Highly Suitable). Direct interviews were conducted with the homeroom teacher to obtain in-depth information regarding the students' memory conditions and existing media usage, while documentation in the form of photographs and supporting notes served as verifiable evidence.

The research data consisted of qualitative data, comprising interview findings, comments, and suggestions from the teacher and validators, as well as quantitative data, consisting of scores derived from the validation and response instruments. Qualitative data were analyzed descriptively to explain student needs and serve as a basis for product revision, whereas quantitative data were analyzed using percentage formulas to determine the level of feasibility and practicality of the developed media:

$$P = \left(\frac{\text{Obtained Score}}{\text{Maximum Score}} \right) \times 100\%$$

The resulting percentage was subsequently interpreted using the feasibility and practicality criteria presented in Table 1 (Ruhansih, 2017).

Table 1. Media Feasibility and Practicality Criteria

No	Score Range (%)	Category
1	81 – 100	Highly Feasible
2	61 – 80	Feasible
3	41 – 60	Moderately Feasible
4	21 – 40	Infeasible
5	0 – 20	Highly Infeasible

The development procedure followed three main stages. In the Define stage, the researcher identified student needs, characteristics, and issues related to low memory capacity, as well as the need for innovative classical guidance media, through front-end analysis, learner analysis, and task analysis. In the Design stage, the researcher designed the game format, rules, materials, service content, and assessment instruments, which included game boards, challenge cards, visual cards, number and symbol cards, Edelweiss Code cards, recall question cards, score sheets, reflection sheets, and a manual guide. In the Develop stage, the initial product was validated by one material expert and one media expert, revised based on validator feedback, and subsequently subjected to a limited trial involving the homeroom teacher and 20 fifth-grade students to determine its practicality.

Table 2. Development Stages of the Summit Attack Game Media

Stage	Research Activities	Product / Output
Define	Observation, interview with the homeroom teacher, and student needs questionnaire	Identification of student memory needs and issues

Design	Designing the game format, rules, components, content, and instruments	Initial prototype of the Summit Attack media
Develop	Product development, expert validation, revision, and limited trial	Feasible and practical media
Disseminate	Executed on a limited scale at the research location	Not yet widely implemented in this study

Result (نتائج)

Results of the Needs Analysis

The needs analysis was conducted through interviews and observations with the homeroom teacher, alongside a needs questionnaire distributed to the students. The interview results indicated that while some students possessed fairly good memory capacities, a portion of students frequently forgot newly learned material, encountered difficulties in remembering instructions, and struggled to recall the sequence of previously learned activities. The teacher explained that the media utilized thus far remained limited to textbooks, student worksheets, and simple games, whereas media specifically designed to train memory skills were unavailable—even though students appeared more active, engaged, and able to retain information more effectively when learning was formatted as a game. Furthermore, the teacher noted that an adventure-themed game centered on reaching a mountain peak highly appealed to student interest, as students tended to demonstrate greater enthusiasm when instruction was structured around a challenge.

The questionnaire evaluating students' memory skills, structured around the four components of working memory proposed by Baddeley (2000), revealed that a considerable proportion of students still experienced difficulties across all aspects. In the phonological loop aspect (verbal/phonological memory), 65% of students provided disagree and strongly disagree responses. In the visuospatial sketchpad aspect (visual and spatial memory), 55% of students gave negative responses. In the central executive aspect (central controller), 65% of students provided negative responses, and in the episodic buffer aspect, 60% of students gave disagree and strongly disagree responses, as detailed in Table 3.

Table 3. Results of the Working Memory Needs Questionnaire

Working Memory Aspect	Disagree + Strongly Disagree (%)
Phonological Loop (verbal/phonological memory)	65%
Visuospatial Sketchpad (visual/spatial memory)	55%
Central Executive (central controller)	65%
Episodic Buffer	60%

The media needs questionnaire also indicated that students required media that are concrete, engaging, and interactive. A total of 65% of students provided positive responses regarding the need for engaging media that help facilitate material comprehension, 65% of

students gave positive responses toward media that can be directly seen, touched, and utilized, while 55% of students stated that media for training memory skills within academic guidance services remained limited. Regarding learning motivation, 55% of students provided positive responses toward the use of interactive media, whereas on the aspect of learning effectiveness, 70% of students gave positive responses indicating that media helped them retain learning material. These findings served as the empirical foundation for developing the "Summit Attack: Menuju Puncak" media.

Development of the "Summit Attack: Menuju Puncak" Media

Based on the results of the needs analysis, "Summit Attack: Menuju Puncak" was developed as an educational media in the form of a board game adapting the concept of mountain climbing, in which players must sequentially pass through a series of challenge posts to reach the summit. This theme was selected because reaching a summit requires effort, perseverance, strategy, and cooperation – aligning with the process of strengthening students' memory skills, which must be accomplished in a phased manner. The game comprises seven stages: Start, Post 1 (Sequential Memory), Post 2 (Visual Memory), Post 3 (Working Memory), Post 4 (Edelweiss Code), Post 5 (Combined Recall), and Finish (Summit). Each post features an increasing level of difficulty to provide students with a gradual learning experience (scaffolding), and the game is played in groups of 4 to 5 students who collaborate to complete each challenge within a specified time limit. Correct answers earn points, and the group that reaches the summit with the highest score receives an award – a mechanism designed to enhance both intrinsic and extrinsic motivation without compromising the cooperative element.

The developed product consists of a game board, challenge cards, visual cards for visual memory, number and symbol cards for working memory, Edelweiss Code cards, recall question cards, score sheets, student reflection sheets, and a facilitator handbook. All components utilize bright colors, engaging illustrations, and simple language suited to the developmental characteristics of elementary school students. Figure 1 illustrates the initial design of the game board prior to the finishing process, constructed from a plywood and cork base combined to form a mountain relief, whereas Figure 2 depicts the revised product based on feedback from the media expert, incorporating added color, texture, and a base stand.



Figure 1. Initial Design of the Summit Attack Game Board



Figure 2. Summit Attack Game Board After Revision and Finishin



Figure 3. Trial of the Summit Attack Media with Fifth-Grade Students

Feasibility and Practicality Test Results

Prior to being tested in the practicality trial, the product was first validated by one media expert and one material expert. Feedback from both validators served as the basis for product revision before conducting the practicality trial.

a. Media Expert Validation

Media validation was conducted by a lecturer from the Islamic Guidance and Counseling Study Program. The evaluation encompassed four aspects: media safety, practicality of use, media appearance, and alignment with learning objectives. The media validator awarded a score of 36 out of a maximum score of 40, yielding a percentage of 90%, categorized as highly feasible, as presented in Table 4.

Table 4. Media Expert Validation Results

No	Media Aspect	Score	Max Score
1	Media safety	8	10
2	Practicality of use	8	10
3	Media appearance	8	10
4	Alignment with learning objectives	8	10
Total		32	40

Percentage	$36/40 \times 100\%$	90%
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These results demonstrate that the developed media met the criteria for safety, ease of use, visual appeal, and alignment with the objectives of academic guidance services for fifth-grade elementary school students. The validator assessed that the media was safe, practical, and suited to the developmental characteristics of elementary school-aged children, while providing constructive suggestions regarding visual refinements, color consistency, and the shape and size of the media (Sugiyono, 2019).

b. Material Expert Validation

Material validation was conducted by a lecturer from the Islamic Guidance and Counseling Study Program. The evaluation encompassed four aspects: content feasibility, presentation, graphics, and language. The material validator awarded a score of 52 out of a maximum score of 60, yielding a percentage of 87%, categorized as highly feasible, as presented in Table 5.

Table 5. Material Expert Validation Results

No	Media Aspect	Score	Max Score
1	Content feasibility	12	15
2	Presentation	14	15
3	Graphics	12	15
4	Language	14	15
	Total	52	60
	Percentage	$52/60 \times 100\%$	87%

These results indicate that the content contained within the Summit Attack media is appropriate for use in academic guidance services aimed at training the cognitive abilities of fifth-grade elementary school students. The validator assessed that the content aligns with the students' developmental stage, is presented systematically, and utilizes clear, easily understandable language for guidance and counseling teachers, while suggesting improvements regarding language simplification and the refinement of material presentation and media appearance (Sugiyono, 2019).

c. Practicality Based on Teacher Response

The teacher practicality trial involved the fifth-grade homeroom teacher at SD Ulul Ilmi Medan Denai. The teacher's response yielded a score of 46 out of a maximum score of 50, resulting in a percentage of 92%, categorized as highly practical, as presented in Table 6.

Table 6. Teacher Practicality Test Results

No	Statement	Score
1	The purpose of this game aligns with the need to train students' memory skills.	4
2	This game can be easily implemented in the classroom.	4
3	Students appeared highly engaged in this game.	5
4	I observed an improvement in students' memory skills after participating in this game.	5
5	Game instructions were clear and easily understood by students.	4
6	This game is safe for classroom use.	5

7	This game is effective in training students' capacity to recall information.	5
8	This game is effective in helping students retain lesson materials more rapidly.	5
9	Overall, this game is beneficial for training students' memory skills.	4
10	I would recommend this game for future use.	5
Percentage		$46/50 \times 100\% = 92\%$

The teacher perceived that the media was user-friendly, possessed a visual design aligned with the characteristics of elementary school students, and featured instructions that were easily understood by both teachers and students. Furthermore, the teacher reported a positive perception regarding the game's potential to support classical academic guidance services. Consequently, the media was deemed not only feasible in terms of content and appearance, but also practical for sustainable implementation in learning activities and guidance services.

d. Practicality Based on Student Response

The student practicality trial involved 20 fifth-grade students at SD Ulul Ilmi Medan Denai as respondents. Overall, the student responses yielded a total score of 432 out of a maximum score of 500, resulting in a percentage of 86%, categorized as highly practical, as presented in Table 7.

Table 7. Student Practicality Test Results

Number of Respondents	Obtained Score	Maximum Score	Percentage	Criteria
20	432	500	86%	Highly Practical

The students perceived that the Summit Attack media possessed an attractive visual appearance, appealing colors, and a user-friendly format during learning activities. Furthermore, students expressed that the media made the learning activities more enjoyable, helped them maintain focus, and allowed them to practice memory tasks interactively. Throughout the implementation of the media, students demonstrated high enthusiasm, active participation, and positive engagement during the guidance session.

Overall, the media expert validation achieved a percentage of 90%, the material expert validation reached 87%, the teacher practicality test scored 92%, and the student response obtained 86%. The descriptive average of these four evaluations is 88.75%, placing the "Summit Attack: Menuju Puncak" media in the overall highly feasible and highly practical categories.

Discussion (مناقشة)

The needs analysis results indicate that the development of the "Summit Attack: Menuju Puncak" game media was grounded in the actual conditions of fifth-grade students at SD Ulul Ilmi Medan Denai. Interview results with the homeroom teacher revealed that a portion of students still encountered difficulties in recalling newly taught material, following instructions, and recalling the sequence of activities from previous meetings. Concurrently, the needs questionnaire demonstrated that a substantial proportion of students experienced difficulties across all four working memory components: the phonological loop (65%), visuospatial sketchpad (55%), central executive (65%), and episodic buffer (60%). These findings align with the view that working memory is closely associated with reading comprehension, mathematics, and overall academic success in elementary school students (Baddeley, 2000), thereby justifying

the conceptual design aimed at simultaneously targeting these four components, unlike the majority of memory-based games that target only a single component, such as verbal repetition or vocabulary (Jasman, 2026).

These identified needs were further reinforced by the media needs analysis results, wherein most students expressed a clear preference for concrete and interactive media that can be directly observed, touched, and utilized, while concurring that media designed for training memory skills within school-based academic guidance services remained limited. This indicates that students require not only explanations regarding memory strategies but also direct experiential practice to engage their memory sub-skills, which is consistent with the perspective that game-based learning offers an engaging and meaningful avenue to enhance active student engagement, attention, and motivation—all of which serve as crucial prerequisites for effective memory formation (Sari, 2025).

The characteristics of Summit Attack offer distinct advantages because the media does not position students as passive information recipients, but rather as active participants who must attend to, process, store, and retrieve information across all five game posts. The mountain climbing theme—symbolizing that reaching a peak necessitates effort, perseverance, and collaboration—reflects the gradual and cumulative nature of memory reinforcement. Grounded in information processing theory and Baddeley's (2000) working memory framework, each post in the game is deliberately mapped to a specific memory component: Post 1 (Sequential Memory) is structured to engage the phonological loop through sequential word or number recall tasks; Post 2 (Visual Memory) targets the visuospatial sketchpad through image and symbol recognition; Post 3 (Working Memory) stipulates tasks for the central executive by requiring students to simultaneously store and process information; Post 4 (Edelweiss Code) involves collaboration between the phonological loop and visuospatial sketchpad through symbol-to-letter associations; and Post 5 (Combined Recall) engages the episodic buffer as students must integrate and recall information from all preceding posts. This structured mapping distinguishes Summit Attack from previous board games and memory media, which generally train only a single memory aspect within a single subject area (Riskyka, 2023), representing the primary novelty of this study.

Regarding product feasibility, media expert validation obtained a score of 90% and material expert validation achieved a score of 87%, both falling into the highly feasible category. These results demonstrate that the media fulfilled the criteria for safety, ease of use, visual design, alignment with learning objectives, as well as content feasibility, presentation, graphics, and language quality. Securing high scores is critical because guidance and counseling game media must not only be visually appealing but must also remain safe for children, aligned with guidance objectives, and tailored to students' developmental traits. These findings are consistent with prior development studies on board games and puzzles for elementary and secondary students, which similarly established that systematic development following the 4D model—comprising needs analysis, design, expert validation, and revision—tends to produce valid and feasible media for classroom and guidance service applications (Maksum & Wardhani, 2021).

In terms of practicality, teacher responses reached 92% and student responses reached 86%, both categorized as highly practical. The teacher awarded high ratings for instructional clarity, classroom safety, and the media's potential to support classical guidance activities involving communication, teamwork, and memory practice. Meanwhile, students evaluated the media as appealing, easy to understand, and capable of providing an enjoyable learning experience that heightened their engagement and classroom focus. This pattern accords with previous research on game-based learning and board game media in elementary and secondary school guidance services, which reported that games fostering direct participation, cooperation, and structured challenges receive highly positive evaluations from both teachers and students by transforming

passive delivery into active, memorable experiences (Pratiwi & Hardini, 2022).

From a guidance and counseling practice perspective, these findings indicate that games can function as more than mere recreational activities; they can serve as structured tools providing guidance and counseling teachers with an interactive platform to observe student engagement and facilitate memory exercises. Consequently, this creates an enjoyable service atmosphere while providing a concrete context for counselors to develop students' cognitive and social behaviors. This aligns with research on game-based classical guidance media, which demonstrates that well-designed games integrated into guidance services can simultaneously support cognitive development and foster positive classroom involvement (Okpatrioka, 2023).

Nevertheless, these research results should be interpreted proportionately. While the validation scores of 90% for media, 87% for material, 92% for teacher response, and 86% for student response establish that the product is highly feasible and highly practical, they reflect user perceptions and content validation rather than empirical measures of cognitive improvement. This study did not employ pretest-posttest comparisons or inferential testing on memory improvement, unlike several recent quasi-experimental studies on memory- and cooperation-based games that reported significant gains from pre- to post-treatment using such designs (Adila & Harahap, 2025). Therefore, the scientific contribution of this study is more accurately characterized as yielding a highly feasible and practical game media product with strong potential to support memory training in elementary students, whereas empirical verification of its efficacy awaits future experimental or pretest-posttest investigations.

Overall, the study's results demonstrate consistency across student needs, media design, validation outcomes, and user evaluations: the needs analysis identified gaps across all working memory components, the design of Summit Attack translated these needs into five sequential posts targeting each component, expert validations affirmed high feasibility, and both teacher and students reported a highly practical user experience. This consistent pattern indicates that the developed media aligns with actual needs, possesses strong product characteristics, and is ready for implementation in classical guidance services, while establishing a clear trajectory for future research to rigorously evaluate its effectiveness in enhancing elementary school students' memory capacity.



Conclusion (خاتمة)

Based on the results and discussion, it can be concluded that the "Summit Attack: Menuju Puncak" game media was successfully developed using the Four-D (4D) model through the Define, Design, and Develop stages as a classical guidance medium within the academic guidance domain to train the memory skills of fifth-grade students at SD Ulul Ilmi Medan Denai. The needs analysis revealed that students still experienced difficulties across all four working memory components—namely the phonological loop, visuospatial sketchpad, central executive, and episodic buffer—and that media specifically designed to train memory skills interactively and enjoyably were not yet available at the school. The developed media, in the form of a mountain climbing board game featuring five posts mapped to sequential memory, visual memory, working memory, symbol association, and combined recall, obtained a media validation score of 90% and a material validation score of 87%, both categorized as highly feasible, while teacher practicality responses reached 92% and student responses reached 86%, both categorized as highly practical. These results demonstrate that "Summit Attack: Menuju Puncak" serves as a feasible and practical alternative medium for classical guidance services in training elementary school students' memory capacity. However, as this study did not employ a pretest-posttest or experimental design, the findings reflect product feasibility and practicality rather than statistically proven effectiveness. Future research is recommended to test the media's

effectiveness using an experimental or pretest-posttest design with a larger sample size involving multiple schools, complete the Disseminate stage, and further develop variations in game challenges and components.

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Bibliography (مراجع)

- Anisah, A. S., Akmal, R., & Maulidah, I. S. (2022). Meningkatkan kemampuan daya ingat siswa melalui metode bernyanyi pada mata pelajaran Sejarah Kebudayaan Islam. *Jurnal Pendidikan UNIGA*, 16(1), 581–591. <https://doi.org/10.52434/jp.v16i1.1814>
- Baddeley, A. (2000). The episodic buffer: A new component of working memory? *Trends in Cognitive Sciences*, 4(11), 417–423. [https://doi.org/10.1016/S1364-6613\(00\)01538-2](https://doi.org/10.1016/S1364-6613(00)01538-2)
- Dari, M. M. W., & Hanggara, G. S. (2022). Permainan board game peta sebagai media dalam meningkatkan kesiapan study lanjut pada siswa SMA. *Jurnal Bikotetik (Bimbingan dan Konseling: Teori dan Praktik)*, 6(1), 18–22. <https://doi.org/10.26740/bikotetik.v6n2.p18-22>
- Gulo, W. K., & Rizqi, H. Y. (2026). Dampak penggunaan model pembelajaran game based learning berbantuan PATEM terhadap kemampuan pemahaman konsep siswa sekolah dasar. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 11(1), 77–92. <https://doi.org/10.23969/jp.v11i01.41479>
- Humairoh, S., Kardenah, A., & Novianti, R. (2023). The effectiveness of Simon Says game to improve students' vocabulary mastery in learning English. *Jurnal Pendidikan, Bahasa dan Budaya*, 2(1), 49–55.
- Jasman, I. M., Devita, R., & Putra, O. E. (2026). Rancang bangun permainan Simon Says untuk meningkatkan daya ingat & respon siswa sekolah dasar. *Jurnal Ilmu Komputer dan Informatika*, 2(3), 238–248.
- Kurniawati, R., Haifaturrahmah, & Sari, N. (2025). Pemanfaatan game edukasi sebagai media pembelajaran yang menarik bagi siswa sekolah dasar. *Didaktik: Jurnal Ilmiah PGSD STKIP Subang*, 11(4), 261–285.
- Kusumawati, A., & Rahmawati, L. (2022). Pengaruh penggunaan media pembelajaran interaktif terhadap minat dan motivasi belajar siswa SD. *Jurnal Pendidikan Dasar*, 12(1), 35–44.
- Marinda, A. D., Winarni, E. W., & MuktaDir, A. (2025). Science board game media based on team game tournament model to improve cognitive learning outcomes. *JPI (Jurnal Pendidikan Indonesia)*, 14(3), 615–624. <https://doi.org/10.23887/jpi-undiksha.v14i3.94964>
- Ndasi, A. A. R., Endu, S., Dhoka, F. A., Mawa, H. A., & Lawe, Y. U. (2023). Peningkatan daya ingat siswa SD melalui metode simulasi. *Jurnal Citra Pendidikan Anak*, 2(1), 17–23. <https://doi.org/10.38048/jcpa.v2i1.1507>
- Nur'aina, Harsono, A. M. B., Hidayat, A., & Prihandoko, Y. (2024). Studi kasus: Kemampuan mengingat peserta didik kelas 2 SDN Melayu 6 Banjarmasin. *Journal Educational Research and Development*,

1(2), 223–228. <https://doi.org/10.62379/jerd.v1i2.128>.