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BAGAS MODEL AND MEDIA PAUSE THINK DISCUSS: IPAS LEARNING INNOVATIONS TO IMPROVE CRITICAL THINKING AND COLLABORATION SKILLS

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Abstract

One of the problems with teaching science in the modern era is that primary school pupils often lack the ability to think critically and work together effectively. Only 39% of fourth graders at SDN Sungai Mai 8 Banjarmasin exhibited strong critical thinking abilities, while 44% demonstrated strong collaborative skills, according to observational data. With the use of Pause Think Discuss media, this research aims to explain and analyse how the BAGAS model might be used to social studies education with the goal of boosting students' critical thinking and collaborative abilities. This study employs a qualitative methodology known as Class Action Research (PTK). The research included eighteen fourth graders from SDN Sungai Mai 8 Banjarmasin. We used descriptive analysis to go through data collected from students' collaborative and critical thinking abilities. Students' critical thinking abilities improved significantly over the course of the four meetings, rising from 44% in the first to 94% in the last. Collaborative abilities also rose, going from 44% in the first gathering to 100% in the subsequent meeting. This study found that elementary school students' critical thinking and collaboration skills were significantly improved when the BAGAS model which combines problem-based learning, group investigation, and gamification with the help of Pause Think Discuss media was used. The model achieved its goals by creating learning experiences that were active, interactive, and meaningful.

Keywords: BAGAS Model, Pause Think Discuss, critical thinking, collaboration.

Abstrak: Kurangnya kemampuan berpikir kritis dan kolaborasi pada siswa sekolah dasar menjadi tantangan bagi pembelajaran IPAS (Ilmu Pengetahuan Alam dan Sosial) di abad ke-21. Observasi di kelas IV SDN Sungai Miai 8 Banjarmasin menunjukkan bahwa hanya 39% siswa yang menunjukkan kemampuan berpikir kritis, sementara 44% memiliki keterampilan kolaborasi yang memadai. Penelitian ini bertujuan untuk mengkaji dan mengevaluasi penggunaan model BAGAS yang diperkaya dengan media *Pause Think Discuss* untuk meningkatkan kemampuan berpikir kritis dan kolaborasi siswa dalam pembelajaran IPAS. Metode penelitian kualitatif dengan pendekatan Penelitian Tindakan Kelas (PTK) digunakan dalam studi ini. Subjek penelitian terdiri dari 18 siswa kelas IV SDN Sungai Miai 8 Banjarmasin. Data mengenai kemampuan berpikir kritis dan kolaborasi siswa dikumpulkan melalui observasi dan dianalisis menggunakan metode deskriptif analitis. Hasil penelitian menunjukkan bahwa kemampuan berpikir kritis siswa meningkat dari 44% pada pertemuan pertama menjadi 94% pada pertemuan keempat. Kemampuan kolaborasi meningkat dari 44% pada pertemuan pertama menjadi 100% pada pertemuan keempat. Hasil ini membuktikan bahwa penerapan model BAGAS yang memadukan *Problem-Based Learning*, *Group Investigation*, dan gamifikasi dengan dukungan media *Pause Think Discuss* mendorong pembelajaran yang aktif, interaktif, dan bermakna, sehingga secara signifikan meningkatkan kemampuan berpikir kritis dan kolaborasi siswa sekolah dasar..

Kata kunci: Model BAGAS, *Pause Think Discuss*, berpikir kritis, kolaborasi.

Background

Education has a pivotal role in cultivating high-caliber human resources and equipping individuals to confront diverse problems of the 21st century. In the age of globalisation and rapid technological advancement, education serves not just as a conduit for information dissemination, but also as a mechanism for the holistic development of students' capabilities. Education in the 21st century seeks to adapt to the more competitive landscape. The progression of the 21st century is exceedingly swift, influencing several facets of existence. Consequently, cultivating high-quality human resources, possessing innovative talents, and embodying strong character is crucial (Laksana, 2021; Noorhapizah & Agusta, 2019; Utari & Muadin, 2023).

The rapid advancement of technology has influenced education in the 21st century. The advancement of education in Indonesia necessitates a transformation in pedagogical methods. Innovations that may provide pupils with competencies pertinent to contemporary demands. Learning in the 21st century underscores the need of acquiring diverse abilities that enhance students' capacity to tackle intricate and evolving challenges (Farman et al., 2025; Satria & Muntaha, 2022; Mudrikah et al., 2022).

Education in the 21st century transcends mere information acquisition, emphasising the need for students to develop abilities that enable them to adapt to change. Learners should possess 21st-century competencies referred to as the 6Cs, which include Critical Thinking, Collaboration, Communication, Creativity, Citizenship, and Character. The cultivation of these abilities is crucial from the foundational schooling stage, since they serve as the bedrock for addressing real-life challenges (Afif et al., 2021; Astuti, 2024; Noorhapizah et al., 202).

In the autonomous curriculum, the scientific discipline merges elements of both science and social studies; nevertheless, this study will concentrate on the topics pertaining to

social studies. Natural and Social Sciences (IPAS) encompasses knowledge about both living organisms and non-living entities, while examining human existence as both solitary and communal beings (Allutfia & Setyaningsih, 2023; Andreani & Gunansyah, 2022; Susilowati, 2023). IPAS assists students in understanding the mechanisms of nature and the interactions among social entities. In this scenario, educators have significant obligation to guarantee that every student attains maximum learning results, particularly in critical courses like IPAS..

Social studies education need to be conducted in an engaging manner. Social studies education prioritises not just the transmission of ideas but also fosters an environment for students to engage in critical thinking, pose enquiries, participate in discussions, and articulate their viewpoints. Learners are strategically engaged in acquiring information by investigation, observation, and social engagement. Students' engagement is essential in education as it reflects their intellectual and emotional investment in the subject matter. Cognitive engagement is shown by students' capacity to comprehend, dissect, and resolve presented challenges, while emotional engagement is reflected in students' eagerness, inquisitiveness, and drive to acquire knowledge. Consequently, IPAS learning is shown not alone by the ultimate outcomes, but also by the quality of the educational process. (Hidayat, 2025; Qibtiah et al., 2025; Rani & Mujiyanto, 2023).

Critical thinking is the ability to assess, appraise, and make reasoned conclusions grounded upon available knowledge and evidence. Critical thinking abilities highlight students' capacity to provide justifications that are logically sound and substantiated by pertinent information. In science learning, critical thinking skills are very important because they help students understand natural and social phenomena as a whole, not only about concepts, but also be able to explain cause and effect, analyze real problems, and provide appropriate solutions based on the results of observations obtained (Fitriani & Novitawati, 2024; Nantara, 2021; Noorhapizah et al., 2022).

Collaboration (collaboration) is a skill that builds good relationships and achieves common goals with others in a group. Collaboration skills are cooperative skills that two or more students do in solving problems by dividing the roles of responsibility, accountability, and organized into roles to achieve a common understanding in order to find solutions to the given problems. This provides space for students to gain knowledge and experience from friends in their group. Collaboration provides space for students to complement each other with different skills, so that they can solve problems obtained effectively through group cooperation (Dhitarisifa et al., 2023; Rahmah et al., 2024; Sarifah & Nurita, 2023).

Nonetheless, the real conditions encountered in the field did not correspond with the expected ideal settings. Investigations carried out in fourth grade at SDN Sungai Mai 8 Banjarmasin, along with discussions with the homeroom educator, indicated that students'

critical thinking capabilities are insufficient; out of 18 pupils, only 7 demonstrate critical thinking skills, accounting for around 39%. This scenario is apparent in the children's restricted ability to identify problems, express opinions based on logical reasoning, assess the information gained, and draw appropriate conclusions. The collaborative skills of students are significantly lacking, with just 8 people, or around 44%, exhibiting competent abilities in this domain. Some students persist in facing difficulties in cooperating with classmates, fairly allocating responsibilities, appreciating their peers' viewpoints, and actively participating in group assignments.

Previous research indicates that using learning models as an innovative strategy might improve the standard of IPAS teaching. The results of the conducted research indicate Hastawan et al. (2023) who implements the model Problem Based Learning (PBL) results in an improvement in students' critical thinking and creative skills. Other research conducted by Devi et al. (2023) that apply a cooperative type model Group Investigation (GI) based on differentiated learning in science subjects can improve students' collaboration skills. This shows that previous studies tend to use one learning model and there have not been many studies that use a combination of several models in one integrated syntax.

The novelty of this research lies in the application of the BAGAS model which integrates three learning models, namely **Problem Based Learning (PBL)**, **Group Investigation (GI)** and **Gamification** assisted by Pause Think Discuss media in IPAS learning. The combination of the three models is designed to create student-centered learning through problem-solving activities, group investigation, and the provision of game elements through question cards that can increase students' motivation and involvement in the learning process. Therefore, this research makes a real contribution to expanding the 21st century educational literature.

Despite numerous studies demonstrating the efficacy of Problem Based Learning, Group Investigation, and Gamification individually in enhancing 21st century competencies, there remains a scarcity of research that amalgamates these three methodologies within the BAGAS framework, supported by the Pause Think Discuss media in elementary science education. Consequently, this study is significant for evaluating the efficacy of integrating models and media in enhancing students' critical thinking and collaborative abilities. This research seeks to elucidate and examine the use of the BAGAS model, facilitated by Pause Think Discuss media, in IPAS education to enhance critical thinking and collaborative abilities among primary school pupils. This study concentrates on two primary elements: firstly, the enhancement of students' critical thinking and collaboration abilities following the application of the BAGAS model supported by Pause Think Discuss media in social studies

education, and secondly, the inclination to cultivate these skills as evidenced by variations in results at each session.

Method

This research uses a qualitative approach with the type of Classroom Action Research (PTK). The research was carried out to describe the improvement of students' critical thinking skills and collaboration skills through the application of the BAGAS model assisted by Pause Think Discuss media in science learning. The implementation of the research was carried out in four stages, namely planning, implementation of actions, observation, and reflection.

The subjects in this study were all grade IV students of SDN Sungai Miai 8 Banjarmasin totaling 18 people. The research was carried out in IPAS learning by applying the BAGAS model assisted by the Pause Think Discuss media. All students in the class were used as research subjects to observe the development of critical thinking skills and collaboration skills during the learning process.

The research instruments used consisted of a critical thinking skill observation sheet and a student collaboration skill observation sheet. Both instruments were used to observe the development of students' skills during the learning process at each meeting.

The critical thinking skills observation sheet covers five aspects, namely (1) providing simple explanations, (2) building basic skills, (3) summarizing them, (4) providing further explanations, and (5) organizing tactics and strategies. The collaboration skills observation sheet covers five aspects, namely (1) positive interdependence, (2) face-to-face interaction, (3) individual responsibility, (4) interpersonal relationships, and (5) interactions between group members.

Each indicator on the observation sheet was assessed using a scoring scale of 1–4. Score 1 indicates the least skilled category, score 2 indicates the sufficiently skilled category, score 3 indicates the skilled category, and score 4 indicates the highly skilled category. The scores obtained by each student are then added up to obtain an overall score and compared to the minimum score and maximum score that has been set in the instrument. The results of the assessment are used to determine the skill category of each student at each meeting.

In addition to observation instruments, the research uses learning tools and Pause Think Discuss media as supporting materials in the implementation of actions. Pause Think Discuss media is used in the application of the BAGAS model to provide stimulus, questions, and discussion opportunities to students during the learning process.

Data collection was carried out during four IPAS learning meetings. At each meeting, the researcher carried out learning using the BAGAS model assisted by the Pause Think Discuss media in accordance with the learning tools and scenarios that had been prepared.

During the learning process, observations were made on students' critical thinking skills and collaboration skills using the observation sheets that had been prepared.

The results of observations at each meeting are recorded and used to see the development of students' skills. After the implementation of actions and observations, the results obtained are used as reflection material to identify developments and things that need to be improved in the next lesson. Thus, the data collection process takes place gradually from the first meeting to the fourth meeting.

The research data was analyzed using descriptive analysis. The analysis was carried out on the data from the observation of students' critical thinking skills and collaboration skills at each meeting. The analysis aimed to describe the development of students' skills from the first meeting to the fourth meeting.

Data on each skill aspect was analyzed by calculating the percentage of achievement in each aspect. Meanwhile, the overall skill achievement was determined based on the number of students who achieved the predetermined skill category. The results of the percentage calculation at each meeting were used to illustrate the development trend of students' critical thinking skills and collaboration skills. The observation data were then presented in the form of tables and graphs to facilitate the interpretation of skill development during the four meetings.

Result and Discussion

Result

The results of the observation of students' critical thinking skills during IPAS learning activities using the BAGAS model assisted by Pause Think Discuss media in meetings 1-4 are presented as follows:

Table 1 Percentage of Each Aspect in Students' Critical Thinking Skills

Aspects	Meetings							
	1		2		3		4	
	Highly Skilled		Highly Skilled		Highly Skilled		Highly Skilled	
	f	%	f	%	f	%	f	%
Provide a Simple Explanation	6	33%	7	39%	10	56%	16	89%
Building Basic Skills	5	28%	9	50%	9	50%	14	78%
Concluding	4	22%	9	50%	12	67%	15	83%
Provide Further Explanation	1	6%	3	17%	8	44%	11	61%
Setting Tactics and Strategies	3	17%	5	28%	9	50%	12	67%

The observation results showed a progressive development in students' critical thinking skills across the four learning meetings. The results in Table 1 showed that all five critical thinking aspects increased from the first to the fourth meeting, although the magnitude of improvement varied across aspects. The ability to give simple explanations increased from 33% in the first meeting to 89% in the fourth meeting, representing an increase of 56

percentage points. This aspect showed the highest achievement in the fourth meeting, indicating that most students were increasingly able to identify relevant information and provide explanations based on the problems presented during learning activities.

The ability to build basic skills also demonstrated a substantial improvement, increasing from 28% to 78%, or an increase of 50 percentage points. This improvement indicates that students became more capable of using relevant information, identifying supporting evidence, and applying appropriate procedures when responding to learning problems. Similarly, the ability to draw conclusions increased from 22% in the first meeting to 83% in the fourth meeting. The 61-percentage-point increase suggests that students progressively developed their ability to formulate conclusions based on information and discussions conducted during the learning process.

Furthermore, the ability to give further explanations increased from 6% to 61%, showing an improvement of 55 percentage points. Although this aspect experienced considerable development, its achievement remained the lowest among the five aspects in the fourth meeting. This finding indicates that providing more detailed explanations, particularly by elaborating on reasons or supporting arguments, remained a challenge for some students. Meanwhile, the ability to manage tactics and strategies increased from 17% to 67%, representing an increase of 50 percentage points. This improvement indicates that students gradually became more capable of determining appropriate strategies for solving problems and completing learning tasks.

The results of the observation of students' collaboration skills during IPAS learning activities using the BAGAS model assisted by Pause Think Discuss media in meetings 1-4 are presented as follows:

Table 2 Percentages of Each Aspect in Students' Collaboration Skills Way

Aspects	Meetings							
	1		2		3		4	
	Highly Skilled		Highly Skilled		Highly Skilled		Highly Skilled	
	f	%	f	%	f	%	f	%
Positive Interdependence	4	22%	7	39%	12	67%	15	83%
Face-to-Face Interaction	4	22%	7	39%	8	44%	14	78%
Individual Responsibility	7	39%	10	56%	13	72%	16	88%
Interpersonal Relationships	1	6%	4	22%	7	39%	11	61%
Interaction Between Group Members	3	17%	5	28%	11	61%	14	78%

As presented in Table 2, all five collaboration aspects showed improvement from the first to the fourth meeting. Positive interdependence increased from 22% to 83%, representing an increase of 61 percentage points. This improvement indicates that students increasingly recognized the importance of supporting one another and working together to achieve common

group goals. The development of this aspect also reflects students' increasing involvement in completing group tasks rather than working individually.

Face-to-face interaction increased from 22% in the first meeting to 78% in the fourth meeting, showing an increase of 56 percentage points. This result indicates that students became more actively involved in direct interaction during group activities, including sharing ideas, responding to their peers, and discussing solutions to the problems provided. Individual responsibility showed the highest final achievement among the five aspects, increasing from 39% to 88%, or an increase of 49 percentage points. This finding suggests that students increasingly understood their individual roles and responsibilities within their respective groups.

Interpersonal relationships also improved substantially, increasing from 6% in the first meeting to 61% in the fourth meeting, representing an increase of 55 percentage points. Although the improvement was considerable, this aspect remained the lowest-achieving collaboration aspect in the fourth meeting. This indicates that some students still experienced difficulties in developing interpersonal relationships, such as maintaining effective communication, respecting different opinions, and responding appropriately to their peers during group activities.

Meanwhile, interaction between group members increased from 17% to 78%, representing an increase of 61 percentage points. The improvement indicates that students became increasingly able to communicate, exchange ideas, and participate in interactions with other members of their groups. The increase across these aspects suggests that repeated opportunities for group discussion and collaborative problem-solving contributed to the development of students' collaboration skills.

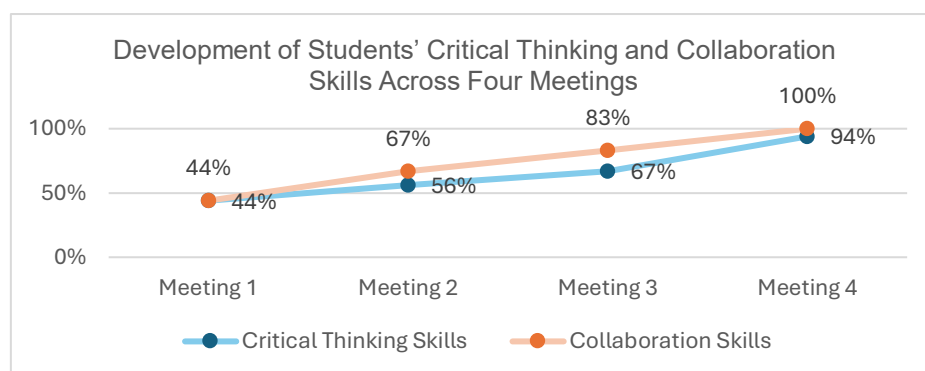


Figure 1. Development of Students' Critical Thinking and Collaboration Skills Across Four Meetings

Based on the graph, it can be concluded that the students' critical thinking skills from meeting 1 to meeting 2 increased by 12%, so that those who were initially in the "A Small Percentage of Highly Skilled Students" criteria increased to "Most Highly Skilled Students". Then from meeting 2 to meeting 3 there was an increase of 11% and still showed positive

development, but still remained on the criterion of "Most Students Are Highly Skilled". Furthermore, from meeting 3 to meeting 4 there was an increase of 27%, so that students managed to reach a percentage of 94% with the criterion of "Almost All Students Are Highly Skilled" and have met the set success indicators.

Students' collaboration skills from meeting 1 to meeting 2 increased by 23%, so that what was initially in the "A Very Skilled Minority" criterion increased to "Most Highly Skilled Minority". Then from meeting 2 to meeting 3 there was an increase of 16% and reached the criterion of "Almost All Students Are Highly Skilled" Furthermore, from meeting 3 to meeting 4 there was an increase of 17%, until reaching a percentage of 100% with the criterion of "All Students Are Highly Skilled". The results show that all students have achieved the success indicators that have been set.

Discussion

The improvement in students' critical thinking skills indicates that the implementation of the BAGAS model assisted by Pause Think Discuss provided students with repeated opportunities to identify problems, gather information, discuss findings, formulate conclusions, and determine appropriate problem-solving strategies. The improvement across the five observed aspects suggests that students gradually became more involved in higher-order thinking activities during the learning process. This finding is consistent with previous research showing that Problem Based Learning can support the development of elementary students' critical thinking skills through problem presentation and active involvement in the learning process (Halimah et al., 2023; Masrinah et al., 2019). The Group Investigation component also provided opportunities for students to search for information, conduct investigations, and discuss their findings with group members, thereby supporting the development of basic skills and conclusion-making abilities (Hasibuan et al., 2024; Munjiah et al., 2025).

The improvement in collaboration skills indicates that the learning activities provided students with opportunities to work together, distribute responsibilities, exchange information, and participate in group decision-making. The Group Investigation component required students to contribute to the completion of group tasks, while the Pause Think Discuss media created opportunities for students to communicate their ideas through question-and-answer and discussion activities. These activities may have supported the development of positive interdependence, individual responsibility, and interaction among group members. The finding is in line with previous research indicating that collaborative and discussion-based learning can support students' participation, communication, and cooperation (Antika et al., 2024; Apriliani et al., 2024; Babullah et al., 2024).

The findings also indicate that the integration of Problem Based Learning, Group Investigation, and Gamification in the BAGAS model provided complementary learning experiences. Problem Based Learning provided problem-solving activities, Group Investigation facilitated information searching and group work, while gamification and Pause Think Discuss encouraged students to participate more actively in responding to challenges and discussing their ideas. Therefore, the contribution of this study lies in the integration of these components into one learning approach rather than applying each model separately. Nevertheless, the findings are limited to one fourth-grade class consisting of 18 students and four learning meetings. Further research involving more participants and different school contexts is needed to examine the consistency of the findings.

Conclusion

The implementation of the BAGAS model assisted by Pause Think Discuss media improved students' critical thinking and collaboration skills in fourth-grade IPAS learning. Critical thinking skills increased from 44% in the first meeting to 94% in the fourth meeting, while collaboration skills increased from 44% to 100%. The improvement indicates that the integration of Problem Based Learning, Group Investigation, and Gamification within the BAGAS model, supported by Pause Think Discuss media, provided opportunities for students to engage in problem solving, investigation, discussion, and collaborative activities. The findings contribute to the development of student-centered IPAS learning oriented towards 21st-century skills and provide a practical alternative for elementary school teachers seeking to develop students' critical thinking and collaboration skills.

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