



Improvement of Learning Outcomes in IPAS for Fifth Grade Students at SDN 02 Bengkayang through the Flipped Classroom Model Supported by Google Sites

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Abstract. This study aims to improve students' learning outcomes in Natural and Social Sciences (IPAS) at SDN 02 Bengkayang through the implementation of the flipped classroom model assisted by Google Sites. The research employs a classroom action research (CAR) approach conducted in two cycles, involving 34 fifth-grade students as the research subjects. Each cycle consists of planning, action implementation, observation, and reflection stages. Data were collected through learning outcome tests, observation sheets, and student response questionnaires, and then analyzed using both quantitative and qualitative methods. The results showed a significant improvement in students' learning outcomes following the implementation of the flipped classroom model. The percentage of mastery learning increased from 10.55% in the pre-test to 85.29% by the end of the second cycle. Additionally, students' responses to this learning model were very positive, with increased motivation, interest, and active participation in the learning process. Students also reported that the use of digital media like Google Sites helped them better understand the learning material. In conclusion, the flipped classroom model assisted by Google Sites proved to be effective in improving students' learning outcomes in the IPAS subject.

INTRODUCTION

The education system and future human resource needs require adjustments. Several solutions are proposed to address issues within the education system to produce high-quality human resources in the future (Syafitri Ardelyani & Atariq Dery, 2023). Therefore, education plays a crucial role in shaping a quality future generation capable of

competing in the era of globalization. Through education, the nation's cultural values are transmitted from the older generation to the younger generation, (Sadewo et al., 2025). Education also plays a role in developing the potential of younger generations to equip them with adequate skills and knowledge in line with the demands of the times (Atiah 2020).

As the frontline of education, teachers are required to continuously update their knowledge and skills (Oka et al., 2021; Purnasari, 2021). Teachers must also be able to introduce innovative strategies, methods, and learning media that align with current developments. By doing so, they can assist students in mastering content more effectively, making learning easier and more enjoyable. Thus, the role of teachers in utilizing media is crucial (Silvester, 2022; Nur Alifah & Astuti 2023). Teachers are expected to continually innovate in developing creative and innovative learning media in the era of self-directed learning. By understanding various innovative media, teachers will be able to demonstrate the usefulness of these tools in teaching fraction concepts in elementary schools (Purnasari, 2020; Dewi Anggreini, 2022). This is important to ensure that the learning process is effective and enjoyable for students.

The educational goals outlined in Law Number 1 on the National Education System Article 20 of 2003 also state that graduates who actively develop their potential will possess mental strength, self-discipline, character, intelligence, high moral values, and the skills needed by both them and society. Therefore, teachers are required to be creative in designing innovative learning processes to achieve educational goals optimally.

However, IPAS (Integrated Science) learning at SDN 02 Bengkayang is still dominated by lecture-based and teacher-centered methods. Students tend to be passive in receiving material and are less actively involved in the learning process. Teachers largely dominate the learning activities with lengthy explanations and minimal activities to develop students' skills.

Observations at Sekolah Dasar Negeri 02 Bengkayang revealed low student achievement in the IPAS subject, particularly on the topic of the "Food Chain." Analysis suggests this issue is due to the teachers' tendency to rely on conventional media in teaching. The table below shows the learning outcomes for fifth-grade students at Sekolah Dasar Negeri 02 Bengkayang on the food chain topic.

Table 1. Student Learning Outcomes for Grade V at Sekolah Dasar Negeri 02 Bengkayang

No	Category	Score
1	KKM	70
2	Average	56,12
3	The Highest Score	80
4	The Lowest Score	30
5	Completion Count	4
6	Non-Completion Count	22

Learning approaches like this led to several issues, including low participation and insufficient improvement in student learning outcomes in the IPAS subject. Students quickly become bored and disengaged during IPAS lessons, which typically last for 2 hours each session. As a result, students' understanding and learning outcomes in IPAS are generally still considered low and have not yet met the established KKM. Given this situation, innovative breakthroughs in IPAS learning are necessary to address the low interest and learning outcomes of students. A learning model is needed that can engage students more actively, promote independent learning, and significantly enhance understanding and academic performance.

The flipped classroom model has emerged as an appropriate alternative solution to address the issues in IPAS learning. Flipped classroom is a blended learning model that reverses the traditional sequence of learning activities. Instead of teachers delivering content in class and assigning homework for students to complete at home, the flipped classroom assigns learning tasks such as instructional videos and reading materials to students before class meetings. This model focuses on students, aiming to enhance the effectiveness of teaching. Previously, educators generally employed lecture-based methods, which reflected a teacher-centered approach. However, this approach has shifted to an alternative model known as the flipped classroom (Mok, 2014). To understand the concept of the flipped classroom, we can compare it with traditional learning. In the flipped classroom, the learning procedure is reversed: activities that are typically conducted in class during traditional learning are now done at home, while tasks usually assigned for home completion, such as homework, are now carried out in class. This is why this model is referred to as "flipped" or "reverse classroom learning.", (Mubarok, 2017; Low et al., 2021). n-person class activities are then utilized to discuss problems, work on projects, and conduct practical experiments. Teachers also play the role of facilitators, guiding the learning process to ensure it is meaningful for students. The flipped classroom model is considered effective in enhancing active student participation, increasing motivation to

learn, and improving their academic performance.

Google Sites is a free website creation and hosting service from Google that can be implemented as a learning medium for elementary school students (Zainal & Kasmawati, 2021). This service allows both teachers and students to easily create and manage learning websites without needing to know coding or web programming languages. By utilizing Google Sites, teachers can develop educational websites that include materials, assignments, quizzes, and various other supportive learning content (Mukti et al., 2020). This site can later be accessed by students as a learning resource or for submitting assignments. The features of Google Sites make it easy for teachers to design and create educational websites without difficulty. Another advantage of Google Sites for learning is that the created sites are stored in the cloud, allowing both teachers and students to access them anytime and anywhere if they are connected to the internet (Kota et al., 2023). Teachers can also restrict access to the site to specific students. Therefore, the use of Google Sites has significant potential to enhance the quality of remote learning while simultaneously developing the digital skills of elementary school students (Adzkiya & Suryaman, 2021). This service is highly suitable for schools that aim to develop technology-based learning, (Purnasari et al., 2024). Google Sites is chosen because it has advanced features that strongly support the implementation of the flipped classroom model. Teachers can easily manage content and learning activities, while students can access materials anytime and anywhere. The use of interactive and varied multimedia in Google Sites can engage students' interest and attention, encouraging them to learn independently (Yustiana & Ganes, 2023).

Based on the potential of the flipped classroom model supported by Google Sites, the researcher is interested in applying it to IPAS learning for Grade V at Sekolah Dasar Negeri 02 Bengkayang. This study aims to determine the improvement in student learning outcomes in IPAS after implementing the flipped classroom model using Google Sites. The primary variable that the study seeks to enhance through the application of this model is the improvement in student learning outcomes in IPAS.

METHOD

This study, titled “Student Learning Outcomes in IPAS for Grade V at Sekolah Dasar Negeri 02 Bengkayang Using the Flipped Classroom Model Supported by Google Sites,” employs a Collaborative Classroom Action Research (CAR) methodology. This research is reflective and collaborative in nature, conducted to enhance the quality of learning and

the professionalism of teachers (Ekawarna et al., 2021). The research allocation takes place at Sekolah Dasar Negeri 02 Bengkayang, located in the Bengkayang District of Bengkayang Regency, during the 2023/2024 academic year. The target and objective of the study are to improve student learning outcomes in the IPAS subject for Grade V using the flipped classroom model supported by Google Sites. The subjects of this research are 34 Grade V students at Sekolah Dasar Negeri 02 Bengkayang, consisting of 18 female students and 16 male students. The research procedure follows four steps: planning, action, observation, and reflection.

The planning stage involves preparing the lesson implementation plan, materials, and learning media. The action stage is the execution of the learning process in accordance with the prepared lesson plan. The observation stage occurs simultaneously during the learning process to monitor the activities of both students and teachers. The reflection stage includes analyzing test results and observations to evaluate shortcomings that occurred during the learning process and to develop a plan for improvements in the subsequent cycle.

The data collection instruments include tests, observation sheets, and documentation. Tests are conducted to measure students' skills, knowledge, and abilities before and after the learning intervention, and these tests are administered at the end of each cycle to assess improvements in student learning outcomes. The observation sheets are used to record the activities of both students and teachers during the learning process. Documentation is employed to verify the information obtained from observations and tests, including student rosters, scores, student work, lesson plan designs, photos of learning activities, and other relevant supporting documents.

The data analysis technique involves calculating the class average and the percentage of student learning completeness to assess improvements in IPAS learning outcomes. Qualitative data analysis is conducted by observing and recording teacher and student activities during the learning process, with the data subsequently analyzed and presented in percentage form. This study utilizes the flipped classroom model with Google Sites as a medium to help students learn more effectively. This model allows students to access learning materials online before class begins, enabling classroom time to be used for in-depth discussions and practical activities (Nuryadin et al. 2021).

RESULTS AND DISCUSSIONS

Results

This research was conducted at SDN 02 Bengkayang, with the primary objective of improving the learning outcomes of fifth-grade students in the IPAS subject through the implementation of the flipped classroom model assisted by Google Sites. The focus of this study extends beyond changes in academic scores; it also aims to enhance active student participation in the learning process and to explore how the application of technology can support the effectiveness of learning in elementary classrooms.

Initial Conditions Before Implementation

In the initial phase, prior to the implementation of the flipped classroom model, an assessment of student learning outcomes was conducted through a pre-cycle test aimed at identifying the students' baseline understanding of the IPAS material. The results of the pre-cycle indicated that the average score of the students was still below the Minimum Competency Criteria (KKM), which is set at 70. A majority of the students faced difficulties in grasping fundamental concepts in IPAS, suggesting that the conventional teaching methods previously employed were ineffective in facilitating deep and meaningful learning experiences for the students. The low results from the pre-cycle also imply that students might struggle to connect theory with practice or apply the concepts learned to real-life situations.

Flipped Classroom Model Implementation

After identifying the initial issues, the flipped classroom model assisted by Google Sites was implemented. In Cycle I, students were introduced to a new learning method where they were given access to the lesson materials uploaded on Google Sites. This material included instructional videos, presentations, and reading materials designed for independent study prior to the classroom sessions. In this model, classroom sessions no longer served as a venue for one-way information delivery from the teacher to the students; instead, they focused more on discussions, question-and-answer sessions, and practical activities aimed at deepening the students' understanding of the material they had previously studied.

Learning Outcomes Before Implementing the Flipped Classroom Model Supported by Google Sites

The learning outcomes of fifth-grade students at SDN 02 Bengkayang in the subject of IPAS, prior to the implementation of Google Sites media supported by the flipped classroom model, are illustrated during the first meeting with the students, where the researcher posed 34 questions to the students (pre-cycle).

This pre-cycle was conducted to assess the students' knowledge level before implementing Cycle I and Cycle II. The students will take a written examination. The results obtained by the students during the pre-cycle are presented in the table below.

Table 2. Student Scores in the Pre-Cycle

No	Students Name	Score
1	SP 1	46
2	SP 2	86
3	SP 3	66
4	SP 4	46
5	SP 5	60
6	SP 6	66
7	SP 7	66
8	SP 8	60
9	SP 9	93
10	SP 10	66
11	SP 11	60
12	SP 12	80
13	SP 13	66
14	SP 14	80
15	SP 15	66
16	SP 16	80
17	SP 17	66
18	SP 18	86
19	SP 19	86
20	SP 20	66
21	SP 21	66
22	SP 22	73
23	SP 23	66
24	SP 24	40
25	SP 25	73
26	SP 26	73
27	SP 27	40
28	SP 28	53
29	SP 29	86
30	SP 30	66
31	SP 31	53
32	SP 32	86
33	SP 33	66
34	SP 34	53
	The Sum of Score	264.57
	Average	61.55%
	Classical Completeness	10.55

From the results of the pre-cycle for Cycle 1 that has been conducted, as seen in the table above, 12 out of 34 students completed the first test (pre-cycle) with a percentage of 35.29%. The number of students who did not achieve optimal results was 23, representing 66.67%. The class average was 61.55%. Thus, the level of classical completeness of student learning in the entrance test (pre-cycle) was 10.55%. This section explains the level of student learning achievement in the first test (pre-cycle).

From the explanation above, it can be concluded that the level of classical completeness in the entrance test (pre-cycle) is still low at 10.55%, which has not yet reached the established classical completeness level of 80%. Based on this, the researcher implemented the actions for Cycle I to improve the learning outcomes of fifth-grade students in the subject of Science (IPAS) using the flipped classroom model supported by Google Sites. This instructional model is expected to enhance the learning outcomes of fifth-grade students in IPAS, specifically with the material on food chains.

Learning Outcomes Using the Flipped Classroom Model Supported by Google Sites

1. Learning Cycle 1

a. Planning

The planning phase for Cycle 1 involved several strategically designed steps aimed at addressing the challenges faced by students in their learning outcomes, particularly concerning the topic of food chains. The actions taken included the implementation of the flipped classroom model supported by Google Sites. The action plan encompasses the following components:

- 1) Development of a Lesson Plan that aligns with the material to be taught in Cycle 1.
- 2) Preparation of teaching materials related to IPAS - Food Chains.
- 3) Preparation of learning media such as student textbooks, laptops, and projectors.
- 4) Creation of a test format to assess student learning outcomes on the IPAS material regarding food chains.
- 5) Preparation of observation sheets for student learning activities and teacher activities.

b. Action

The implementation of the action was conducted in accordance with the developed Lesson Plan (RPP), with a time allocation of 2 x 40 minutes.

The learning activities in the first meeting include:

1) Preliminary Activities

The preparation activities began with the teacher and the researcher conducting a perception exercise related to the material. The teacher and researcher greeted the students, inquired about their well-being, prepared a prayer before the lesson (with one student reading it aloud), and communicated the material and learning objectives to the students.

2) Core Activities

- a) The teacher asks the students to explain what they have learned about food chains (flipped classroom model).
- b) The teacher divides the students in the classroom into several groups, with each group consisting of 4-5 people.
- c) Each group will then be given material about food chains.
- d) The teacher then asks each group to investigate and solve the material provided.
- e) Next, the teacher requests each group to present the results of their investigation and group discussion.
- f) Finally, the teacher asks other groups to provide feedback on the presentations of the other groups.

3) Closing Activities

- a) The teacher will assess the students through a written exam based on the material discussed.
- b) The teacher motivates the students and provides guidance and advice regarding issues related to the learning activities.
- c) The teacher and students collaboratively complete the material that has been studied.
- d) The teacher presents the material that will be discussed at the next conference.

c. Observation

The observation in Cycle I was conducted to monitor the activities carried out during the learning process to verify whether they aligned with the planned activities. The focus of the observation was on the activities of both the teacher and the students during the implementation of the actions.

d. Reflection

After the entire learning process of Cycle I was completed, the researcher and the observing teacher discussed the results of the observations and identified the weaknesses and shortcomings of Cycle I. In the implementation of Cycle I for the IPAS subject with the material on food chains, the learning outcomes were still unsatisfactory. This may be due to the teacher not fully maximizing the application of the teaching model during the lesson.

With the evaluation and improvements made, it is hoped that in Cycle II, the learning process can run more effectively and achieve the desired level of success.

Table 3. Results of Student Scores in Cycle 1

No	Students Name	Score
1	SP 1	66
2	SP 2	86
3	SP 3	66
4	SP 4	73
5	SP 5	73
6	SP 6	66
7	SP 7	60
8	SP 8	93
9	SP 9	86
10	SP 10	60
11	SP 11	80
12	SP 12	66
13	SP 13	80
14	SP 14	66
15	SP 15	80
16	SP 16	80
17	SP 17	86
18	SP 18	86
19	SP 19	73
20	SP 20	100
21	SP 21	73
22	SP 22	66
23	SP 23	73

24	SP 24	73
25	SP 25	73
26	SP 26	80
27	SP 27	53
28	SP 28	86
29	SP 29	80
30	SP 30	66
31	SP 31	93
32	SP 32	80
33	SP 33	73
34	SP 34	60
	The Sum of Score	2733.37
	Average	80.39%
	Classical Completeness	70.58%

From the table above, 23 out of 34 students completed Cycle I, with a percentage of 78.37%. The number of students who did not complete their studies was 11, which is 32.35%. The average score in the class was 78.37. The classical learning completion rate for students in Cycle I was 78.37%.

Cycle 1 Results

The measurement results after Cycle I indicate a significant improvement in student learning outcomes. The average class score increased compared to the pre-test scores, and the percentage of students meeting the minimum completeness criteria also rose. However, there are still some students who have not reached the minimum completeness criteria, indicating that the implementation of this teaching model still requires refinement. Additionally, observations revealed that some students continue to struggle to adjust to the self-directed learning method applied in the flipped classroom, which may be due to a lack of skills in time management and independently accessing technology.

From the discussion above, it can be concluded that the classical learning completion rate in Cycle I was 78.37%, which is categorized as moderate. However, the learning outcomes of students in Cycle I failed to reach the 80% threshold set for classical completeness or the established success indicators. Based on this, the researcher will take further steps to improve the learning outcomes of fifth-grade students in IPAS, particularly regarding food chains. Therefore, the process will continue into Cycle II.

2. Learning Cycle 2

a) Planning

Create alternative action plans to address the issues still identified in Cycle I

I. The steps are as follows:

- 1) Develop a different Lesson Implementation Plan from Cycle I with continuing material.
- 2) Change the group composition from Cycle I.
- 3) Design classroom management strategies.
- 4) Prepare student worksheets.
- 5) Create a test to assess student learning outcomes in Cycle II.
- 6) Prepare observation sheets for the researcher and students.
- 7) Prepare tools and materials using the same media, specifically the flipped classroom model assisted by Google Sites.

b) Action

In the implementation of Cycle II, lasting 2 x 40 minutes and focusing on the IPAS material about food chains, the teacher followed the learning steps outlined in the Lesson Implementation Plan. The activities included the presentation of material by the teacher in accordance with the Lesson Implementation Plan, observation of student activities by the teacher together with the observing teacher, and observation of the teacher's performance by the observing teacher.

c) Observation

Observations in Cycle II were conducted to monitor the improvements implemented based on the reflections from Cycle I. The primary focus remained on the activities of both the teacher and the students during the learning process.

With the evaluations and improvements that have been made, it is hoped that student learning outcomes will continue to improve and that the flipped classroom method assisted by Google Sites can be further optimized. Complete information regarding the level of student success in Cycle II is available in the following table.

Table 4. Results of Student Scores in Cycle 2

No	Students Name	Score
1	SP 1	86
2	SP 2	86
3	SP 3	73
4	SP 4	80
5	SP 5	73
6	SP 6	80
7	SP 7	73
8	SP 8	93
9	SP 9	86
10	SP 10	86
11	SP 11	80
12	SP 12	86
13	SP 13	80
14	SP 14	100
15	SP 15	80
16	SP 16	80
17	SP 17	86
18	SP 18	86
19	SP 19	73
20	SP 20	100
21	SP 21	73
22	SP 22	86
23	SP 23	73
24	SP 24	80
25	SP 25	86
26	SP 26	80
27	SP 27	80
28	SP 28	86
29	SP 29	80
30	SP 30	93
31	SP 31	93
32	SP 32	80
33	SP 33	80
34	SP 34	80
	The Sum of Score	2933.37
	Average	86.27%
	Classical Completeness	123.24%

From the table above, out of 34 students in Cycle II, all 34 students completed the cycle, resulting in a completion percentage of 100%. The average class score was 86.27%. The classical learning completion rate for students in Cycle II was 123.24%. Below is the breakdown of the percentage of student learning completion in Cycle II.

From the discussion above, it can be concluded that the classical learning completion rate in Cycle II is categorized as very high, at 123.24%. This means that the classical learning outcomes of students in Cycle II reached the established completion criterion of 80%, and this result also indicates that the minimum completeness criteria have

been achieved. As student learning outcomes have improved, the learning process in Cycle II is deemed successful.

From the overall data on learning outcomes in each cycle presented in the table above, it can be displayed in the form of a graph in the following figure.



Figure 1. Comparison Graph of Student Learning Completion in Each Cycle

In addition to statistically observing the improvement in student learning outcomes, it is important to analyze the factors contributing to these changes. The interaction between teachers and students, the use of technology, and the quality of the learning materials presented play significant roles in the effectiveness of this teaching model. Intense interaction between teachers and students during class sessions allows students to clarify their doubts and receive more immediate feedback, which can enhance their understanding of the material. Furthermore, the use of technology in the form of Google Sites provides flexibility and accessibility for students in studying the material, potentially improving their self-directed learning. The quality of the learning materials presented is also crucial in building students' understanding of the concepts being taught.

In addition to improving learning outcomes, the flipped classroom model assisted by Google Sites also has a positive impact on students' motivation and interest in learning. By presenting learning materials in a format that is more engaging and relevant to students' digital lives, this model enhances students' motivation to engage in the learning process.

The flexibility in accessing materials also allows students to learn according to their own preferences, which can further increase their interest in the subject matter.

Revision and Implementation of Cycle II

Cycle II Results

Based on the findings from Cycle I, several revisions were made to further optimize the implementation of the flipped classroom model. These revisions include enhancements in providing study guides for students, increasing interaction between teachers and students during out-of-class learning through discussion forum features on Google Sites, and improving technical support for students experiencing difficulties accessing online materials. In Cycle II, the revised steps based on the reflections from Cycle I were reimplemented, and the results showed a more significant improvement. The average student scores increased further, with all students meeting or even exceeding the minimum completion criteria. Additionally, active student participation in class increased, as evidenced by a greater number of questions and contributions during classroom discussion sessions.

Discussions

Data Analysis of Research Results

The research data obtained from observation sheets and test results were analyzed using both quantitative and qualitative approaches. The quantitative analysis reveals a consistent increase in the average class scores and the percentage of student completion in each learning cycle. In Cycle I, the average student scores showed an improvement compared to the pre-cycle; however, a more significant increase occurred in Cycle II after several adjustments were made to the teaching methods. The percentage of student completion, which was initially low, substantially increased to nearly 100% by the end of Cycle II, indicating that almost all students were able to achieve the minimum completion criteria effectively.

From a qualitative analysis perspective, observations during the learning process indicate a significant increase in student active participation. Students became more confident in asking questions, engaging in discussions, and demonstrating a deeper understanding of the material being studied. This increased willingness to participate is likely driven by the enhanced self-confidence resulting from a better understanding of the content they had previously studied through Google Sites.

Relation to Theoretical Context

Theoretically, the results of this study align with the principles of constructivist learning, which emphasize the importance of active student engagement in meaningful learning processes. According to constructivist theory, effective learning occurs when students actively construct their own knowledge through interactions with the material, teachers, and peers (Sugrah 2020). In the context of this research, the flipped classroom model enables students to construct their own knowledge prior to class sessions, which is then reinforced through discussions and interactive activities during class. This contrasts with traditional teaching methods that tend to be passive, where students merely receive information without much opportunity to digest or apply what they have learned. Moreover, the use of technology in the form of Google Sites as a learning medium supports multimedia learning theory, which posits that learning becomes more effective when material is presented in various formats that allow for the integration of text, images, and videos. Google Sites offers flexibility in material presentation, enabling students to learn according to their individual learning styles, whether through reading, watching videos, or engaging in other interactive activities. Thus, considering this, the role of the teacher must become increasingly sensitive to integrating technology into the learning process, (Purnasari, 2020; Gea et al., 2023; Saputro et al., 2024)

Why are the Improvements Occurred?

Significant improvements in student learning outcomes after implementing the flipped classroom model supported by Google Sites can be explained by several key factors. First, the flipped classroom model alters the dynamics of learning by shifting basic cognitive activities, such as understanding and mastering fundamental concepts, outside the classroom. This provides more time in class for higher-order cognitive activities, such as analysis, synthesis, and evaluation. Students arrive in class with a better foundational understanding, which enables them to focus more on problem-solving and in-depth discussions during the class sessions (Sugrah 2020). Second, the use of Google Sites as a learning medium allows students to access learning materials anytime and anywhere. This flexibility not only enhances accessibility but also provides students with the opportunity to learn at their own pace, review material they have not yet understood, and revisit previous lessons before participating in class discussions. This is particularly important in assisting students who may struggle to keep up with the pace of traditional classroom settings (Yuana et al, 2023). Third, the more intensive interaction between students and

teachers during class sessions, focused on discussions and problem-solving, contributes to an improvement in student understanding. The teacher acts as a facilitator who helps guide discussions, answers questions that may arise during independent learning, and provides immediate constructive feedback. This role of the teacher as a facilitator also supports the enhancement of student motivation, as they feel more valued and supported in the learning process (Rosidin, 2021). Finally, the improvement in student learning outcomes can also be linked to the increase in intrinsic motivation among students resulting from a more interactive and engaging teaching method. The flipped classroom model requires students to be more proactive and responsible for their own learning, which in turn can enhance their self-confidence and learning independence. When students feel more accountable for their own learning, they are more likely to be motivated to achieve better results (Amar 2024).

This has important implications for teaching practices in elementary schools, particularly regarding the integration of technology and the implementation of innovative teaching models such as the flipped classroom. The use of technology like Google Sites can serve as an effective tool in supporting more flexible learning that caters to the individual needs of students. Furthermore, the flipped classroom model can be applied to other subjects beyond IPAS to help enhance student engagement and overall learning outcomes (Vidiana and Madiun 2024).

CONCLUSION

The conclusion of this study is that the implementation of the flipped classroom model supported by Google Sites significantly improves the learning outcomes of fifth-grade students in IPAS at SDN 02 Bengkayang. This improvement is reflected in the increase in students' average scores and the percentage of learning mastery, which approaches 100%. Additionally, this model has successfully enhanced active student participation in learning, with students becoming more willing to ask questions and engage in classroom discussions. The use of Google Sites as a learning medium provides better flexibility and accessibility, allowing students to learn at their own pace and according to their individual learning styles. These findings indicate that when applied appropriately, the flipped classroom model can be an effective alternative for improving student learning outcomes, particularly in the digital age. Moving forward, it is recommended that this model be tested in other subjects and grade levels, accompanied by an enhancement of teachers' competencies in utilizing educational technology.

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