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Development of Learning Media Using Google Site with Flipped Classroom Model to Improve Social Studies Learning Outcomes in Junior High School Students Negeri 2 Siempat Nempu Hulu

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ABSTRACT

This research aims to develop and test the effectiveness of Google Site-based learning media integrated with the flipped classroom model in Social Science learning at SMPN 2 Siempat Nempu Hulu. The method used is Research and Development (R&D) by adopting the ADDIE model, which includes the stages of analysis, design, development, implementation, and evaluation. The research applied a mixed methods approach by combining qualitative and quantitative data analysis. The research subjects consisted of grade VIII students who were grouped into experimental classes and control classes through cluster random sampling techniques. Data collection was carried out using validation by experts, student response questionnaires, observations, interviews, as well as pretest and posttest tests. The media developed is designed to support learning activities before, during, and after learning in the classroom through the presentation of videos, images, interactive LKPDs, reflections, and digital-based evaluations. The results of the assessment from material experts, media experts, and learning design experts showed an eligibility rate of more than 90% in the very feasible category, while the students' response to the media was in the very good category. The results of the effectiveness test showed that the experimental class obtained an N-Gain value of 0.72 which was in the high category, while the control class obtained a value of 0.41 in the medium category. The findings show that the application of Google Site-based learning media combined with the flipped classroom model is able to increase social studies student engagement, independence, and learning outcomes more effectively than conventional learning.

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1. INTRODUCTION

The advancement of digital technology has encouraged transformation in various sectors of life, including the education sector, which is now increasingly utilizing technology as part of the learning process. In the 21st century, the education system prepares students to adapt quickly, ensuring

the ability to engage in continuous learning, problem-solving, and to possess adequate creative, collaborative, communicative, and digital literacy skills [1], [2]. These developments have driven a paradigm shift in learning, from a *teacher-centered learning* approach to *student-centered learning*. In this approach, students play the role of active subjects in building their knowledge through solving various problems that are open, so that they have the opportunity to obtain a learning experience that is more contextual, meaningful, and in accordance with real needs [3], [4]. In this case, educational technology not only functions as a tool for delivering materials but also as a means to create a learning environment that is interactive, flexible, and adaptive to the characteristics of the digital generation [5].

The integration of technology in learning is becoming increasingly important as the implementation of the Independent Curriculum requires active learning, problem-solving, and the development of high-level thinking skills in students [6] In line with these guidelines, learning in Social Sciences subjects is increasingly important because social studies materials are closely related to social, economic, historical, and geographical phenomena that require analytical and interpretive skills [7].

However, social studies learning in schools still faces various challenges. The learning process is still dominated by lecture methods and the use of textbooks, and takes place one-way, resulting in low student involvement and a lack of development of critical and analytical thinking skills [8]. This is in line with the results of the 2022–2024 National Assessment (NA), which shows that the literacy and numeracy skills of Indonesian students are still in the low to medium category. Around 46% of junior high school students are in the "Need for Special Intervention" and "Basic" categories in reading literacy competencies, while more than 50% of students still have low numeracy skills [9]. In fact, social studies learning requires the ability to understand social texts, read graphs, interpret demographic data, and critically analyze social phenomena [10].

In addition to the competency aspect of students, problems are also seen in the learning process at school. Based on the results of initial observations and interviews with social studies teachers, it is known that the learning outcomes of grade VIII students are still relatively low, where only about 45% of students achieve the Minimum Completeness Criteria of 75. The low learning outcomes are influenced by the dominance of lecture methods, the limitations of digital learning media, and the low involvement of students in the learning process. Limited learning time in the classroom is also a challenge in social studies learning. Teachers tend to focus more on delivering material rather than discussing and solving problems, so that students' understanding is still superficial. Therefore, digital technology-based learning innovations are needed that are more interactive and oriented towards the development of high-level thinking skills.

One approach that is relevant to the needs of 21st-century learning is the flipped classroom. The flipped classroom is a learning approach that reverses conventional learning patterns by placing material delivery activities outside the classroom through digital media, while face-to-face activities are focused on discussions, problem-solving, and collaborative activities [11], [12]. This approach provides students with the opportunity to learn material independently according to their respective learning pace before participating in classroom learning [13]. Thus, learning time in the classroom can be used more optimally to deepen the understanding of concepts and develop students' critical thinking skills.

Research conducted in Hungary and China shows that flipped classrooms are able to improve learning outcomes, student motivation, and behavioral, emotional, and cognitive engagement, with large effect sizes [14], [15]. In addition, this model is considered effective in creating more flexible and interactive learning, and getting a more positive learning experience and a higher

level of engagement than traditional learning [16] Therefore, flipped classrooms are indispensable in this study.

To optimize the implementation of the flipped classroom, digital media that is able to support independent, interactive, and easily accessible learning is needed by students. One of the media that has the potential to be used is Google Site. Google Site is a web-based platform that allows teachers to easily develop learning sites without the need for special programming skills [17]. In addition, in social studies learning, the use of Google Site has the potential to create a more contextual, interactive, and flexible learning experience so that students can learn the material independently before face-to-face activities take place [18].

Although the use of Google Site as a learning medium continues to grow, studies on its development combined with the flipped classroom model in social studies learning at the junior high school level are still relatively limited. Previous studies generally use digital media as a means of delivering learning materials, but have not comprehensively integrated interactive, collaborative, and reflective learning activities according to the flipped classroom stages [19]. This condition shows that there is a research gap that needs to be overcome through the development of learning media that not only functions as a material provider, but is also able to facilitate active student involvement, encourage learning reflection, and support the implementation of the Independent Curriculum more optimally.

Based on these gaps, this study aims to develop a Google Site-based learning media that is integrated with the flipped classroom model in social studies learning at SMP Negeri 2 Siempat Nempu Hulu. This research is expected to make a theoretical contribution to the development of digital learning based on student-centered learning and make a practical contribution in providing learning media that is innovative, interactive, and in accordance with the characteristics of 21st century students. In addition, this research also supports the implementation of Digital Transformation of Education and Independent Curriculum, which emphasizes the integration of technology to create adaptive, contextual, and competency-oriented learning for students.

2. METHODS

2.1 Research Design and Location

This research applies the Research and Development (R&D) method by referring to the ADDIE model, which consists of five stages, namely Analysis, Design, Development, Implementation, and Evaluation. The ADDIE model **(Figure 1)** is used as a framework in designing and producing Google Site-based learning media, combined with the flipped classroom model in social studies learning. The selection of this model is based on its structured and systematic procedures, so that each stage of development, from need identification, design, product development, implementation, to evaluation, can be carried out sequentially to produce learning media that are in accordance with the learning objectives.

In addition, this study adopts a mixed methods approach by combining quantitative and qualitative data to obtain a more comprehensive picture of the level of validity, practicality, and effectiveness of the developed media. Qualitative data is collected through observations, interviews, and input and recommendations from validators during the development process. Meanwhile, quantitative data was obtained from the results of expert validation questionnaires, student response questionnaires, and learning outcome tests used to evaluate the quality and effectiveness of learning media.

Figure 1. ADDIE Model

This research was carried out at SMPN 2 Siempat Nempu Hulu in the even semester of the 2025/2026 school year by involving grade 8 students in the subject of Social Sciences, especially the material on the process of the national movement. The research population includes all grade 8 students, consisting of five study groups, namely classes 8-A, 8-B, 8-C, 8-D, and 8-E, with a total of 160 students. The sample was determined using the cluster random sampling technique, so that two classes were randomly selected as the experimental class and the control class. In the experimental class, the learning process was carried out using Google Site-based media combined with the flipped classroom model, while the control class followed conventional learning that relied on lecture methods and the use of textbooks. This research is focused on assessing the level of validity of the developed media, identifying students' responses to its use, and testing the effectiveness of the media in improving social studies learning outcomes.

2.2 *Data Collection Instruments*

The research instrument consists of expert validation sheets, student response questionnaires, observation guidelines, interviews, documentation, and learning outcome tests. The validation sheet instrument is used to assess the feasibility level of learning media based on material aspects, media appearance, and learning design. Furthermore, the student response questionnaire was used to find out the level of practicality, attractiveness, ease of use, and clarity of the presentation of material on Google Site-based learning media. The learning outcome test is used to measure the effectiveness of media in improving student learning achievement. The test was carried out in the form of a pretest and posttest in the experimental class and the control class. The preparation of test instruments refers to indicators of cognitive ability of social studies subjects, especially in the material of the national movement process. Before use, the instrument is tested for validity, reliability, difficulty, and differentiating power.

2.3 *Data Analysis*

The data analysis in this study was carried out through a descriptive and inferential approach. Qualitative data obtained from observations, interviews, and input from validators are processed descriptively to provide a deeper understanding of the research results. Meanwhile, quantitative data was analyzed to assess the level of validity, practicality, and effectiveness of the learning media that had been developed. The media validity analysis was carried

out using the average score of validator assessment results with a Likert scale of 1–5, which was then converted into a percentage and classified into the categories of very unfeasible, unfeasible, feasible, and very feasible.

The practicality of learning media was evaluated based on the percentage of student response questionnaire results obtained through individual trials and small group tests. Meanwhile, the effectiveness of the media was determined by comparing the results of the pretest and posttest in the experimental class and the control class. Before hypothesis testing, the data is first analyzed through normality tests and homogeneity tests to ensure that statistical assumptions are fulfilled. Furthermore, the difference in learning outcomes between the two groups was analyzed using the t-test. The level of improvement in students' learning ability after the implementation of Google Site-based learning media integrated with the flipped classroom model is calculated using an N-Gain score, so that the amount of improvement in learning outcomes achieved can be known. N-Gain interpretations are classified into low, medium, and high categories.

3. RESULT AND DISCUSSION

3.1 Flipped Classroom-Based Google Site edia Development

The design and development stage produces Google Site-based learning media consisting of learning objective pages, materials, learning videos, LKPD, reflection, and evaluation. The design of the learning media is prepared by referring to the syntax of the flipped classroom model, which includes activities before learning in class, during the learning process, and after the learning activity is completed. For more details, see the table in table 1**.**

Table 1. Flipped Classroom Syntax Integration on Google Site Media

No	Learning Syntax	Implementation on Google Site	Impact on Learning
1	Pre-class activity	Provision of accessible digital materials and learning videos before class	Help students build initial knowledge and improve learning readiness
2	In-class activity	Use of interactive LKPD and collaborative discussions in the classroom	Improve learning activities, interactions, and critical thinking skills
3	Post-class activity	Digital evaluation and learning reflection	Reinforcing concept understanding and providing learning feedback
4	Multimedia integration	A combination of text, images, videos, and interactive activities	Reduces cognitive load and improves understanding of social studies material

Source: Result research, 2026

In the pre-class activity stage, students learn videos and materials through a Google Site before learning takes place. This stage aims to build students' initial knowledge so that face-to-face time can be focused on high-level thinking activities such as discussion and problem-solving. Theoretically, this approach is in line with constructivism, which emphasizes that knowledge is actively built through learning experiences. Furthermore, at the stage of activities in the classroom, the teacher plays the role of a facilitator who guides students to discuss and analyze the material. The shift in the role of teachers from the main source of information to the facilitator of learning has caused learning activities to become more student-centered. Students no longer only

listen to the teacher's explanations, but also engage in the process of exploration and collaboration.

Then at the stage of post-class activities, it is carried out through evaluation and reflection of learning using digital media. This stage is important to strengthen the understanding of concepts and provide feedback on the learning process that has taken place. The development of Google Site media in this study shows that the integration of multimedia, such as videos, images, and interactive LKPD, is able to improve the quality of the presentation of social studies materials. This is confirmed by findings [20] it shows that the use of multimedia in learning can increase the effectiveness of the learning process by reducing cognitive burden while strengthening the quality of understanding obtained by students. The findings are in line with the theory of cognitive multimedia learning, which explains that the presentation of information through a combination of visual and verbal channels allows students to process the material more optimally, so that the concepts learned become easier to understand and remember [21].

3.2 Learning Media Qualification

The feasibility of Google Site-based learning media developed by applying the flipped classroom model was evaluated through a validation process involving material experts, media experts, and learning design experts. The validation process is carried out to ensure that the material presented is in accordance with the learning objectives, the syntax of the flipped classroom model is appropriately integrated in the media, and the evaluation instruments used have met the aspects of suitability and learning quality.

A. Validation of Subject Matter Experts

The feasibility of Google Site-based learning media developed through the application of the flipped classroom model is assessed through the validation stage by material experts, media experts, and learning design experts. This validation stage aims to ensure that the content of the material is in accordance with the learning outcomes, the application of the flipped classroom model syntax has been systematically integrated in the developed media, and the evaluation instruments used meet the criteria of suitability, accuracy, and learning quality. More details are available at **table 2**.

Table 2. Subject matter expert validation results

No	Assessment Aspects	Percentage	Category
1	Suitability of the flipped classroom model	93%	Very worthy
2	Learning integration	90%	Very worthy
3	Evaluation suitability	88%	Very worthy
4	Average	90,3%	Very worthy

Source: Result research, 2026

Based on the results presented in **Table 2** the validation process shows that the learning media developed has met the eligibility criteria, especially in terms of content or content, learning integration, and suitability of the flipped classroom model. The highest percentage was found in the aspect of the conformance of the inverted class model at 93%. These findings show that the developed media structure has been able to systematically integrate *the stages of pre-class activities*, *classroom activities*, and *post-class activities* in the social studies learning process. The high level of feasibility in this aspect occurs

because learning media not only functions as a means of delivering material, but also as a facilitator of independent and collaborative learning activities. In the *pre-class activity stage*, students have the opportunity to study learning materials and videos before face-to-face learning takes place. This condition helps students build *prior knowledge* so that they have better learning readiness when entering class discussion activities. Thus, Learning time in the classroom can be optimally used to carry out activities that require high-level thinking skills, such as analyzing, discussing, and solving various problems.

These findings are in line with constructivist theory which states that knowledge is actively constructed through learning experiences and social interactions. In the *flipped classroom model*, students no longer only passively receive information from the teacher, but play an active role in building understanding of concepts through independent exploration of the material. The shift in learning from *teacher-centered* learning to *student-centered learning* has caused learning activities to become more interactive and collaborative. In addition, the high validation results in the aspect of learning integration show that Google Site media is able to connect materials, videos, LKPDs, reflections, and evaluations in one structured learning system. Integration makes it easy for students to access learning resources flexibly without being limited by space and time. Pedagogically, this condition can increase the effectiveness of learning because students get a more continuous and contextual learning experience.

The findings of this study are also in line with research from [22] which explains that students who learn using the *flipped classroom model* have better learning readiness and self-regulation skills than students in conventional learning. This is emphasized from the findings [23] which states that flipped classrooms encourage students to learn independently, learning motivation increases because learning is more interesting.

However, the validation results in the *conformity evaluation* aspect obtained the lowest percentage compared to other aspects, namely 88%, nevertheless, the results are still in the very decent category. These findings indicate that the evaluation aspect of learning media still needs improvement, especially in the preparation of assessment instruments oriented to higher order thinking skills. In the implementation of flipped classroom-based learning, the evaluation process is not only aimed at measuring students' ability to remember or understand information, but also needs to be able to assess their skills in analyzing, interpreting, and solving various problems critically.

B. Media Expert Validation

Based on the results of the assessment conducted by media experts, Google Site-based learning media obtained an average eligibility percentage of 90%, so it is included in the very feasible category. Details of the validation results by media experts are presented in **table 3.**

Table 3. Media expert validation results

No	Assessment Aspects	Percentage	Category
1	Media display	91%	Very worthy
2	Navigation	89%	Very worthy

3	Interactivity	90%	Very worthy
4	Average	90%	Very worthy

Source: Result research, 2026

The validation results in **table 3** show that Google Site-based learning media has met the good quality aspects of digital media, including visual display, ease of navigation, and learning interactivity. The highest percentage was obtained in the aspect of display media at 91%, It shows that visually designed media is able to increase students' attention and provide a more engaging and interactive learning experience compared to conventional learning. In digital learning, visual design not only serves as an aesthetic element, but also as part of a learning communication strategy that makes it easier for students to understand information [24].

This finding supports *the Cognitive Multimedia Learning Theory* put forward by [25] which explains that the presentation of information through a combination of visual and verbal elements in an integrated manner can help students understand the learning material more effectively. Proper multimedia presentations can help reduce *cognitive overload* because information is received through more than one cognitive processing channel. Therefore, the systematic use of learning videos, illustrations, and layouts in Google Site can improve the effectiveness of IPS material delivery.

In addition to the visual aspect, the validation results on the navigation aspect were obtained at a percentage of 89% with a very *feasible* category. These results show that the media has a menu structure and page access that is easy for students to understand. Ease of navigation is an important factor in the success of digital learning because students can access the material independently without experiencing significant technical difficulties. When students can find material easily, their cognitive capacity can focus more on understanding learning concepts rather than trying to understand media use [26]. This explains why media with simple navigation tends to be more effective in supporting independent learning.

In line with these findings, [27] also stated that the quality of the interface and ease of navigation in digital media have a significant influence on student satisfaction and engagement in web-based learning. This is confirmed by findings [28] which found that the perceived *ease of use of the system* is one of the main factors that determine the success of the implementation of digital learning and *blended learning*.

Meanwhile, in the aspect of media interactivity, a percentage of 90% was obtained in the very *feasible* category . High results in this aspect show that learning media is able to create active interaction between students and learning materials through the use of videos, digital LKPD, interactive evaluations, and learning reflection features. Interactivity in digital learning has an important role in increasing student engagement. When students can interact directly with the materia. [29] revealed that the use of interactive media increases students' activity and independence and creates a student-centered learning environment and students perform better than conventional classrooms. These findings show that students' learning activities and independence can be improved through intermedia multimedia.

In this study, the role of Google Site not only functions as a medium for delivering material, but also as a digital learning environment that supports independent and collaborative exploration of material. The results of the validation of media experts show that Google Site has good visual, navigation, and interactivity quality so that it is suitable for use as a flipped classroom-based social studies learning medium. However, although the results of media expert validation show that this category is very feasible, there are still several aspects that need to be considered in the development of digital media, such as optimizing device compatibility and internet access stability. These technical factors can affect a student's learning experience, especially in areas with limited internet connections.

C. Learning Design Expert Validation

The results of the validation of learning design experts showed that Google Site-based learning media with *the flipped classroom* model obtained an average percentage of 90.3% with the very *worthy category*. The validation results can be seen in table 4.

Table 4. Learning design expert validation results

No	Assessment Aspects	Percentage	Category
1	Suitability of the flipped classroom model	93%	Very worthy
2	Learning integration	90%	Very worthy
3	Evaluation suitability	88%	Very worthy
4	Average	90,3%	Very worthy

Source: Result research, 2026

The validation results in **table 4** show that the learning media developed has fulfilled the principles of good learning design, especially in integrating the *flipped classroom syntax* into the social studies learning process. The highest percentage was obtained in the aspect of conformity of the *flipped classroom* model at 93%, which shows that the media structure has been able to accommodate the main stages of learning, namely *pre-class activity*, *in-class activity*, and *post-class activity* in a systematic and integrated manner. The high validation results in this aspect show that learning design has succeeded in changing the learning pattern from *teacher-centered* to *student-centered*. In the *pre-class activity* stage, students have the opportunity to learn materials, learning videos, and digital learning resources through Google Site before face-to-face learning takes place. This condition causes students to have better prior *knowledge* when entering the classroom.

The implementation of *flipped classroom* occurs because the process of transferring basic information is carried out before learning in class so that face-to-face time can be used for high-level thinking activities such as discussion, analysis, problem-solving, and concept reinforcement. Thus, learning interactions become more active and collaborative than conventional learning which tends to focus on lectures. In the *flipped classroom* approach, students not only passively receive information, but also build understanding through independent exploration of the material before learning takes place. Therefore, teachers play the role of facilitators who help students develop conceptual understanding and critical thinking skills during classroom learning.

In addition, the high score in the aspect of learning integration of 90% shows that all learning components, ranging from objectives, materials, learning activities, to evaluation, have been designed in a structured and interrelated manner. This integration is important in digital learning because it can help students understand the learning flow systematically and reduce confusion during the self-learning process. In this study, Google Site functions not only as a medium for delivering materials, but also as a digital learning environment that connects all learning activities in one easily accessible platform.

These results are in line with the findings of [30] who stated that the success of *flipped* classrooms is influenced by the quality of learning design and the integration of learning activities before and during face-to-face learning. The study found that learning will be more effective when students gain early access to materials so that classroom interactions can be focused on collaborative activities and problem-solving. This is confirmed by findings from [31] which state that *flipped classrooms* can create a positive learning atmosphere that encourages deeper student engagement as well as interaction with classroom materials before class facilitating active participation and a thorough understanding of concepts during classroom interactions.

Furthermore, in the aspect of evaluation suitability, a percentage of 88% was obtained, which although it was in the *very worthy* category, had a lower score than other aspects. This shows that learning evaluation still needs further development, especially in measuring *higher order thinking skills (HOTS)* and students' reflective abilities. Evaluation in *flipped classroom* not only serves to measure cognitive learning outcomes, but also to assess student involvement, analytical skills, and collaborative processes during learning. A study from [32] also found that the effectiveness of *flipped classrooms* was greatly influenced by learning independence strategies to develop their learning independence skills and reflect on their learning process.

3.3 Student Responses and Learning Activities

The results of the individual trial showed that students responded positively to the Google Site-based learning media developed. The results of the trial can be seen in **table 5.**

Table 5. Individual trial results

No	Aspects	Percentage	Category
1	Ease of use	88%	Very good
2	Media display	90%	Very good
3	Understanding of the material	87%	Very good
4	Average	88,3%	Very good

Source: Result research, 2026

The results of individual trials showed that learning media received a positive response from students with an average percentage of 88.3% in the *very good category*. The highest percentage is found in the media display aspect at 90%, which shows that the visual design of Google Site is able to attract students' attention and improve learning comfort. In digital learning, visual design has an important role in building students' emotional engagement with learning materials. When students feel interested in the appearance of the media, attention and concentration on learning will increase so that the process of

understanding concepts becomes more optimal. The use of learning videos and visual illustrations on Google Site helps students understand social studies material in a more concrete and contextual way.

Meanwhile, in the aspect of ease of use, a percentage of 88% was obtained, which shows that students can operate the media well without experiencing significant difficulties. This condition shows that Google Site have a good *level of usability* so that it supports students' independent learning. The simple menu structure and systematic navigation make it easier for students to access materials, learning videos, and evaluations independently. This supports more flexible learning as students can learn anytime and anywhere according to their needs.

The findings of this study are in line with the results of the study [33] which shows that the ease of use of digital learning media has a positive effect on the level of student satisfaction and learning motivation in web-based learning. In the material comprehension indicator, the developed media obtained a percentage of 87%, which indicates that the media is effective in helping students understand the material of the national movement process. This result is also supported by research [34] which states that the application of the *flipped classroom* model can improve concept understanding because students have the opportunity to learn the material independently before participating in face-to-face learning activities, so that time in class can be used to deepen understanding and conduct discussions. This way, students have the opportunity to access the material before the learning takes place so that they have prior knowledge when participating in class discussions. Furthermore, the results of the small group trial showed that students responded positively to the learning media developed. The results of the trial can be seen in **table 6**.

Table 6. Results of the group trial

No	Aspects	Percentage	Category
1	Student interest	91%	Very good
2	Ease of use	89%	Very good
3	Clarity of material	90%	Very good
4	Average	90%	Very good

Source: Result research, 2026

The results of the trial in a small group showed that the learning media developed obtained an average score of 90%, so it was included in the very good category. The highest score was obtained in the aspect of student interest with a percentage of 91%, which indicates that the use of Google Site-based media is able to increase student interest and participation during the social studies learning process. This high level of interest is influenced by media design that integrates various interactive multimedia elements to create a more engaging learning experience and encourage active student engagement.

This phenomenon is influenced by the characteristics of the digital generation who are used to using internet-based technology and media in their daily lives. Therefore, Google Site-based learning is more relevant to the needs and characteristics of students today [35]. Meanwhile, in the aspect of ease of use, a percentage of 89% was obtained, which shows that students can access media independently easily. This shows that Google Site have a *user-friendly design* that supports student self-learning. In addition, the aspect of clarity of the material obtained a percentage of 90%, which shows that the presentation of

material in the media has been systematically arranged and easy for students to understand. The presentation of structured material helps students understand the relationship between concepts in the national movement process material in more depth.

Through the application of the flipped classroom model, students get the opportunity to learn the material first by watching learning videos and reading teaching materials independently before face-to-face activities are carried out. This approach provides flexibility for each student to repeat the material as needed, so that they can learn based on their own learning abilities and rhythms. Thus, the learning process becomes more student-centered, personalized, and able to accommodate the different learning characteristics of each individual. [36] also stated that *flipped classrooms* are table to improve students' understanding of concepts and learning activities and have a strong influence on learning outcomes because learning provides flexibility in accessing materials. In addition, a study from [37] It shows that the application of the flipped classroom model combined with digital learning and face-to-face activities can encourage increased collaboration between students, strengthen active participation in the learning process, and increase the effectiveness of learning outcomes.

In general, the results of trials at the individual and small group stages indicate that Google Site-based learning media integrated with the flipped classroom model has a positive impact on the learning process, which is shown through increased student involvement, learning motivation, and their activeness during learning activities. Multimedia integration, ease of access, and learning flexibility make this media effective in supporting social studies learning that is more interactive, adaptive, and student-centered.

3.4 The Influence of Flipped Classroom-Based Google Sites on Student Learning Outcomes

The effectiveness of the use of Google Site-based learning media combined with the flipped classroom model was evaluated through a comparative analysis of pretest and posttest results between the experimental class and the control class, as presented in table 7.

Table 7**.** Comparison of pretest and posttest average scores in experimental and control classes.

No	Classes	Avarange Pretest	Avarange Posttest
1	Experimental	62,5	85,2
2	Control	61,8	74,3

Source: Result research, 2026

Based on the data presented in table 7, the two research groups showed an increase in learning outcomes after the learning process. However, the improvement achieved by the experimental class was greater as compared to the control class. The average posttest score in the experimental class increased from 62.5 to 85.2, while in the control class it increased from 61.8 to 74.3. The results of the N-Gain analysis also showed a clear difference, which was 0.72 in the experimental class which was in the high category, while the control class obtained a value of 0.41 which was in the medium category. The findings indicate that the application of Google Site-based learning media combined with the flipped classroom model has a more effective influence in improving social studies student learning outcomes compared to conventional learning.

The increase in learning outcomes in the experimental class is inseparable from students gained a more active, flexible, and in-depth learning experience. In the *pre-class activity* stage, students study learning materials and

videos before face-to-face activities take place so that they have better *prior knowledge* when entering the classroom. This condition causes learning activities in the classroom to be focused on discussion, analysis, and problem-solving, not just information transfer. On the other hand, in the learning control class, the lecture method is still dominated so that students tend to receive information passively and have lower learning involvement.

The results of this study are in line with research [38] which states that *flipped classrooms* are able to increase learning effectiveness because students have the opportunity to learn the material before learning takes place in class. Studies from [39] also confirm that *flipped classroom-based* learning can improve learning outcomes and student participation through more collaborative and student-centered learning activities.

However, the results of the study show that the success of the implementation of the flipped classroom model is highly dependent on the level of readiness and discipline of students in learning the material that has been provided before face-to-face learning activities take place. Students who do not participate in *the pre-class activity* stage tend to be less active in discussions and have difficulty understanding the material during class learning. These findings show that the success *of flipped classrooms* is not only determined by the quality of digital media, but also by students' *self-regulated learning abilities* and the role of teachers in monitoring learning activities. Therefore, the implementation of *flipped classroom* requires structured learning management so that students can be optimally involved in each stage of learning.

4. CONCLUSION

Based on the results of the study, Google Site-based learning media developed by integrating the flipped classroom model has been proven to meet the criteria of being very feasible, practical, and effective to be applied to social studies learning of national movement process materials. Assessments conducted by subject matter experts, media experts, and learning design experts show a very high level of feasibility with an average percentage above 90%. These results show that the developed media is able to accommodate the entire stages of flipped classroom learning, starting from pre-class activities, core activities in the classroom, to post-learning activities. In addition, the test for students, both individually and in small groups, showed a very positive response to aspects of display, ease of use, presentation of materials, and media appeal. The use of various multimedia components, such as learning videos, images, interactive LKPDs, reflections, and digital evaluations, also supports the creation of more active, flexible, and student-oriented learning.

The effectiveness of media is also proven through improving student learning outcomes that are better than conventional learning. The experimental class experienced an increase in the average posttest score from 62.5 to 85.2 with an N-Gain value of 0.72 (high category), while the control class only achieved an N-Gain of 0.41 (medium category). These findings indicate that the application of the flipped classroom model through Google Site is able to increase student engagement, strengthen concept understanding, and develop thinking skills through a combination of self-paced learning before classroom meetings and collaborative discussion activities during the learning process. Thus, Google Site-based learning media has the potential to be one of the innovations that support the implementation of digital learning in the 21st century. In order for its application to be more optimal, teachers need to maximize the use of web-based learning platforms while fostering students' discipline and self-regulated learning skills in preparing materials before learning activities take place.

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