

Developing Digital Media Based on Local Wisdom to Increase Student Engagement in Social Studies Learning

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ABSTRACT

Student engagement in social studies learning at the junior high school level remains a challenge, often due to limited contextual teaching methods and conventional media. This study addresses the need for media innovation by developing digital learning materials that integrate local wisdom to enhance relevance and engagement. The research employed a Research and Development (R&D) approach using the ADDIE model, which includes the stages of Analysis, Design, Development, Implementation, and Evaluation. The media was designed using content on local wisdom—*hutan larangan* and *sungai larangan*—and developed through Canva and Heyzine platforms into interactive digital formats. Expert validation was conducted for content and media design. Implementation involved two trials: a small group (40 students) and a large group (92 students). Data were collected through questionnaires assessing feasibility and student engagement. Expert validation rated the media as highly feasible, with scores of 94% (content) and 95% (media design). Student responses were also highly positive, scoring 90% in the small group and 92% in the large group. Student engagement significantly improved, rising from 60% to 90% in the small group and from 62% to 93% in the large group following media implementation. The findings demonstrate that digital media based on local wisdom effectively increases student engagement in social studies learning. The integration of culturally relevant content and interactive design fosters greater interest and participation, suggesting strong potential for broader application in educational settings.

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1. INTRODUCTION

Education is fundamentally a purposeful and systematic effort to shape learners into individuals who are not only intellectually capable but also possess spiritual awareness, noble character, and the necessary skills for contributing to society. In the Indonesian context, this vision is clearly articulated in

the National Education System Law No. 20 of 2003, which mandates that education must aim to develop students' full potential, including intellectual ability, moral integrity, and cultural awareness, thereby fostering a dignified and civilized nation. This philosophy is implemented across all levels of education, including junior high school (*Sekolah Menengah Pertama, SMP*) (Pristiwanti et al., 2022).

One of the key subjects taught at the junior high school level is social studies (*Ilmu Pengetahuan Sosial* or IPS). The IPS curriculum is interdisciplinary in nature, combining elements from history, geography, economics, and sociology, enabling students to develop a holistic understanding of social life and its complexities (Sapriya, 2009; Ministry of Education and Culture, 2022). This subject is expected to cultivate critical thinking, civic responsibility, and contextual awareness among learners. However, despite these noble goals, the practical implementation of IPS education in Indonesian classrooms often falls short of expectations due to various pedagogical and infrastructural limitations (Solikhah, 2018; Kartika, 2019).

One of the persistent challenges in IPS learning is low student engagement. Research has shown that many students perceive social studies as boring or irrelevant, primarily because the teaching strategies employed are conventional and fail to connect classroom material to students' lived experiences (Nahla et al., 2022; Zabadiy, 2013). Teachers frequently rely on lecture-based delivery, with minimal use of technology or real-world examples, which results in passive learning and diminished interest. As noted by Fatmala (2022), this disconnection often leads students to disengage from the subject, affecting both their motivation and academic performance.

Moreover, teacher pedagogical competence plays a significant role in shaping students' attitudes toward learning. Teachers with strong pedagogical skills who are capable of applying contextual, thematic, and interactive teaching approaches are more likely to inspire student interest and participation (Badrus et al., 2014; Mauhazizin, 2012). However, many educators face difficulties in doing so due to limited training, lack of access to innovative resources, and minimal institutional support. These challenges are particularly acute in rural or under-resourced schools, where infrastructure and digital literacy remain underdeveloped (Natasyah, 2024).

To address these limitations, scholars and practitioners have advocated for contextual and student-centered learning models, including project-based, problem-based, and media-supported learning approaches. These strategies emphasize active engagement, collaborative inquiry, and relevance to students' real-life contexts, which are essential for developing critical and analytical thinking skills (Sardiman, 2012; Suyitno, 2014; Sugiyono, 2013).

Among these innovations, the development of digital learning media has emerged as a particularly effective tool for enhancing student engagement. Digital media are multimedia learning materials that incorporate text, images, audio, video, and interactivity to provide dynamic and learner-friendly content delivery (Rahmawati et al., 2023; Hayati, 2025). Such media have been shown to improve comprehension, motivation, and retention, especially when they allow learners to explore material independently and meaningfully.

To further strengthen the impact of digital learning, recent studies have highlighted the importance of integrating local wisdom into instructional content. Local wisdom refers to the cultural values, norms, practices, and traditional knowledge that are rooted in the everyday lives of communities (Koentjaraningrat, 2009). Incorporating these elements into teaching materials not only fosters cultural appreciation and identity but also contextualizes abstract academic content into familiar and meaningful experiences (Setiawan et al., 2021).

In the Indonesian context, local wisdom such as *hutan larangan* (protected forests) and *sungai larangan* (restricted rivers) represent indigenous practices of environmental conservation and social governance. These customs involve community-based agreements to manage natural resources sustainably, often reinforced through customary laws and sanctions. When these themes are embedded into IPS learning materials, students are more likely to understand and appreciate the relevance of the subject to their own cultural and ecological surroundings.

Several empirical studies support the integration of local wisdom in education. For example, research by Nikmah et al. (2020) and Sriyanti (2019) found that incorporating local values into social studies lessons significantly enhanced student engagement and academic outcomes. Similarly, Azmi and Zainil (2025) reported that students who engaged with culturally grounded materials developed a stronger sense of social identity and environmental responsibility. On an international scale, UNESCO (2024) has recognized the power of culturally relevant pedagogy, as seen in African schools where integrating traditional dance into lessons improved students' emotional and social well-being.

Despite this growing body of evidence, implementation remains limited. A preliminary study conducted by the present researcher in two junior high schools in Kuantan Singingi Regency found that most IPS teachers still relied on conventional methods such as PowerPoint presentations, and rarely incorporated local wisdom into their lessons. The examples used were often abstract or distant from students' daily realities, making it difficult for them to relate to the material. These practices contribute to the persistent issue of low student engagement and weak conceptual understanding in social studies classes.

Given these challenges and opportunities, this study proposes the development of interactive digital media based on local wisdom as a means to bridge the gap between curricular content and students' sociocultural contexts. By using accessible platforms such as Canva and Heyzine, the research aims to produce digital materials that are visually appealing, interactive, and rooted in the cultural narratives familiar to students. These media are designed to align with the competencies outlined in the national curriculum—specifically the themes of culture, environment, and social interaction taught in phases D to F of the IPS subject for grades VII to IX (BSKAP Kemendikbudristek, 2022; Suparno, 2022).

Through a Research and Development (R&D) methodology employing the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation), the study seeks to validate the feasibility and effectiveness of the developed media in increasing student engagement. It is anticipated that this innovation will not only enhance learners' motivation and understanding but also serve as a practical recommendation for IPS teachers seeking to revitalize their instructional practices in line with 21st-century educational demands.

In conclusion, the integration of digital technology and local wisdom represents a promising strategy to revitalize social studies education in Indonesia. By contextualizing learning within students' cultural realities and leveraging interactive media, teachers can foster deeper engagement and more meaningful learning experiences. This study aims to contribute to that effort by designing, validating, and evaluating a digital media product that supports the goals of both national curriculum standards and culturally responsive pedagogy.

2. METHOD

2.1 Research Approach

This study employs the Research and Development (R&D) methodology, utilizing the ADDIE development model, which comprises five sequential phases: Analysis, Design, Development, Implementation, and Evaluation. The ADDIE model was selected due to its systematic and procedural characteristics, which facilitate a structured approach to the design, development, and evaluation of educational materials. As noted by Mulyatiningsih (2011), Sugiyono (2015), and Slamet (2022), the ADDIE model provides a rational and comprehensive framework well-suited for developing a wide range of educational products, including instructional media, teaching materials, learning strategies, and other pedagogical tools.

2.2 Research Subjects

Based on Sevilla (1992), Sugiyono (2015), *Slovin's formula* to determine the sample size from a population of 120 students using the formula: $n = \frac{N}{1 + N(e)^2}$ margin of error 10-15% then the research sample was tested on small groups (40 students in 1 school) and large groups (92 students in 2 schools). The

research was conducted in 2 junior high schools located in Sentajo Raya and Singingi Districts, Kuantan Singingi Regency, Riau Province. The research was conducted from January to April 2025.

2.3 Research Design and Procedures

The research steps are as follows: Analysis stage; direct observation at school, interviews with social studies teachers and students to identify social studies learning problems, teachers when teaching in class, media and learning strategies applied by social studies teachers. Interviews with students regarding the level of interest in learning social studies. The stages of developing the ADDIE model are carried out sequentially and in line with project procedures to support the success of digital media development. Presented in the following scheme:

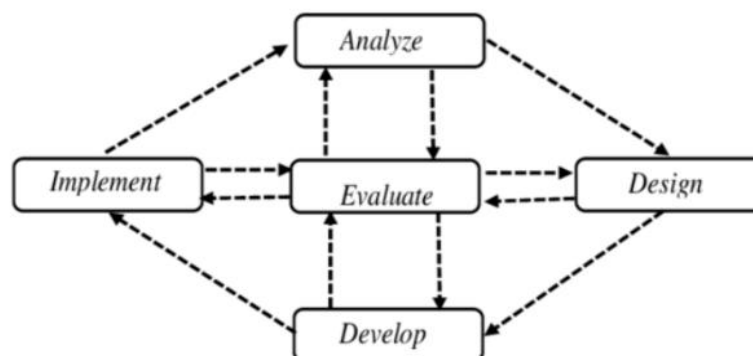


Figure 1. Schematic of the ADDIE Model Stages

The design phase of the digital-based learning media involves the use of a pre-selected development platform. The process begins with the collection of relevant content from diverse sources, including books, academic journals, and documents related to local wisdom, particularly the cultural narratives of the forbidden forest and forbidden river. These materials are then aligned with curriculum objectives, particularly those related to cultural knowledge and social interaction. Following this, a storyboard is developed to outline the structure of the digital content, which typically includes components such as the title page, user guide, table of contents, main instructional materials, glossary, and bibliography. Additionally, this stage involves the development of questionnaire instruments: one for expert validation by content and media specialists, and another to measure students' responses regarding their interest in the learning materials.

The digital media product development stage was developed through Canva and Heyzine flipbooks that were converted into interactive media. The reason for developing media using this platform is due to time and cost limitations so that media development will be completed more quickly using this platform. Material validation carried out by competent experts in the field of Social Sciences aims to assess the feasibility of the material. Media validation by media experts who have competence in the field of media innovation to assess the appearance, presentation, and understandability of the design. Improvements were made based on input from material experts, and the final media product can meet the feasibility standards. Implementation Stage, Media was tested in two stages: a small group trial in 1 class VII of SMP A and a large group trial in 2 classes in Junior High School A & B. This trial aims to determine the effectiveness of digital media in increasing students' social studies learning engagement. The evaluation phase is the final stage of development. Evaluation is conducted through measurement and analysis of data obtained during implementation, both in the form of student responses and expert assessments. The evaluation in this study includes qualitative and quantitative data analysis. Qualitative data were obtained from documentation, interviews, and observations that describe student responses and expert input on the learning media.

The questionnaire will be validated by experts based on its indicators; the material expert questionnaire has 10 indicators, the media expert questionnaire has 11 indicators, the student response questionnaire to teaching media has 8 indicators, and the social studies learning interest and passion questionnaire has 10 indicators. Each questionnaire was compiled based on predetermined indicators:

content suitability, language clarity, and visual appearance. These instruments were compiled systematically to ensure the validity of the data obtained. Riduwan & Akdon, (2010); Sudijono, (2014); Arikunto (2016); Quantitative analysis was conducted using percentage analysis techniques. Namely, by comparing the scores obtained with the maximum score, then converting them into feasibility categories based on a classification table. The results of the study indicate the level of success of the media developed in social studies learning, meeting the feasibility criteria for increasing student engagement in social studies learning, culture, traditions, and interaction. The following digital media feasibility qualifications:

Table 1. Qualification Eligibility Media Digital

Eligibility Results	Qualification	Criteria
85%-100%	Very Good	Very Worthy
70%-84%	Good	Worthy
55%-69%	Quite Good	Quite Decent
40%-54%	Not Good	Not Worthy
0%-39%	Very Less	Not Feasible

Miles and Huberman (1994) analyzed qualitative data by presenting interactive analysis steps, namely through three main stages: data reduction, data presentation, and drawing/verifying conclusions. The data reduction stage was carried out by sorting, focusing, and simplifying the initial data obtained from observations, interviews with teachers during the observation stage, and written responses from material and media experts. Repetitive or irrelevant data were grouped thematically for further study. Next, in the data presentation stage, the researchers organized the results of observations and responses into descriptive narratives, thematic matrices, and relevant direct quotations, making it easier to see patterns and relationships between data. The formula for the percentage of feasibility can be explained as follows:

Explanation:

Q: Eligibility Percentage

X: Total Validator Answer Score (actual score)

Xi: Maximum Score 100%: Constant Number

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

The final stage is drawing conclusions and verifying, where researchers review the summarized findings to ensure the consistency and validity of the data's meaning. The results of this analysis are used to strengthen the interpretation of the feasibility, effectiveness, and acceptability of digital media products by end users, teachers, and students. These results ensure that all input from informants is used as a basis for decision-making in developing and refining interactive media products that meet student needs.

3. FINDINGS AND DISCUSSION

3.1 Results of Digital Media Development

The development of digital media based on local wisdom (hutan larangan and sungai larangan) successfully passed all stages in the ADDIE model, starting from the analysis stage to the evaluation stage. In the analysis stage, researchers identified problems that emerged in SMP A and SMP B in Sentajo Raya and Singingi Districts, Kuantan Singingi Regency, namely the limited innovation of social studies learning media and the limitations of teachers in explaining examples of local wisdom values that are closest to students, so that social studies learning is less interesting. For this reason, digital media was developed that combines narratives, images, and videos as a form of adaptation to school conditions. Furthermore, in the design stage, researchers compiled materials based on Basic Competencies for grades VII, VIII, & IX with phases d, e, f of cultural and social interaction materials. The materials were systematically arranged through a storyboard containing components such as

covers, concept maps, material content, and bibliography. Research instruments were also designed, including validation questionnaires from media experts, material experts, student response questionnaires, and learning interest questionnaires. The development stage is carried out by compiling and editing the material through Canva and converting it into digital media using the Heyzine platform , as seen in the following image:

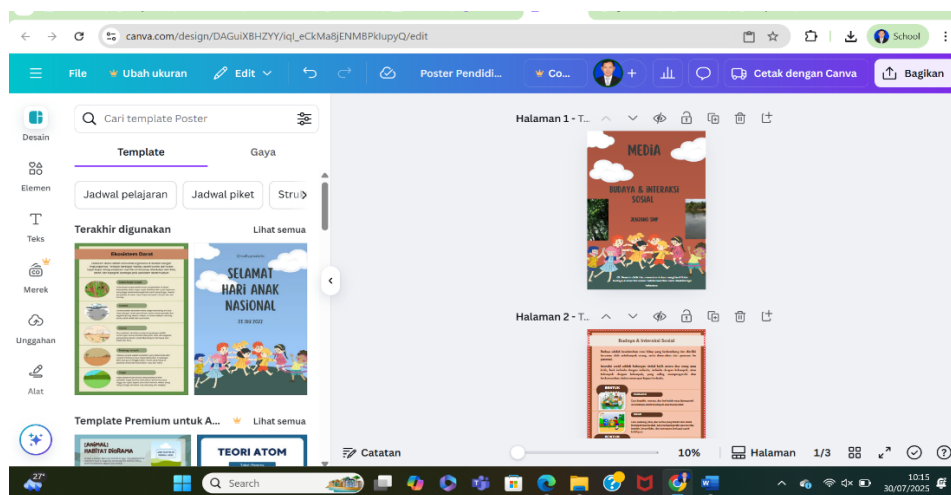


Figure 2. Process of Compiling Digital Media Materials Using Canva

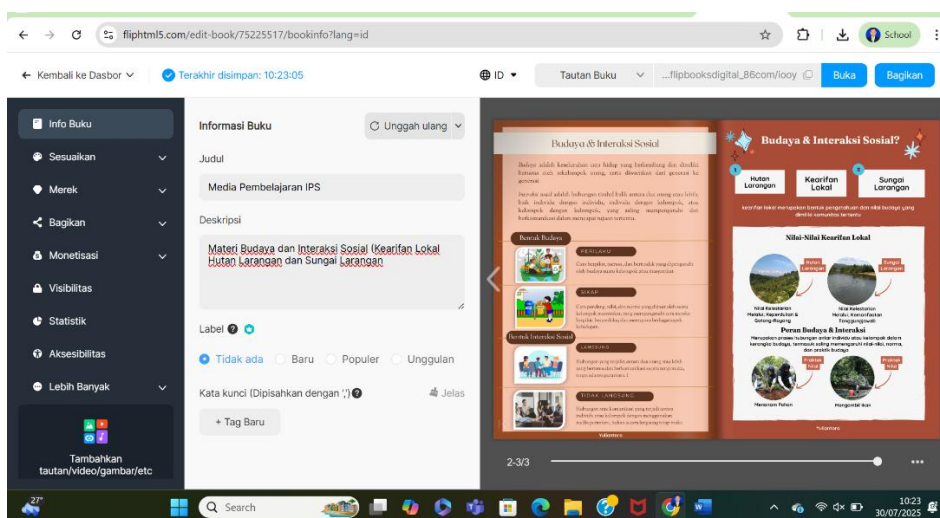


Figure 3. Digital Media Conversion Process Through the Heyzine Platform

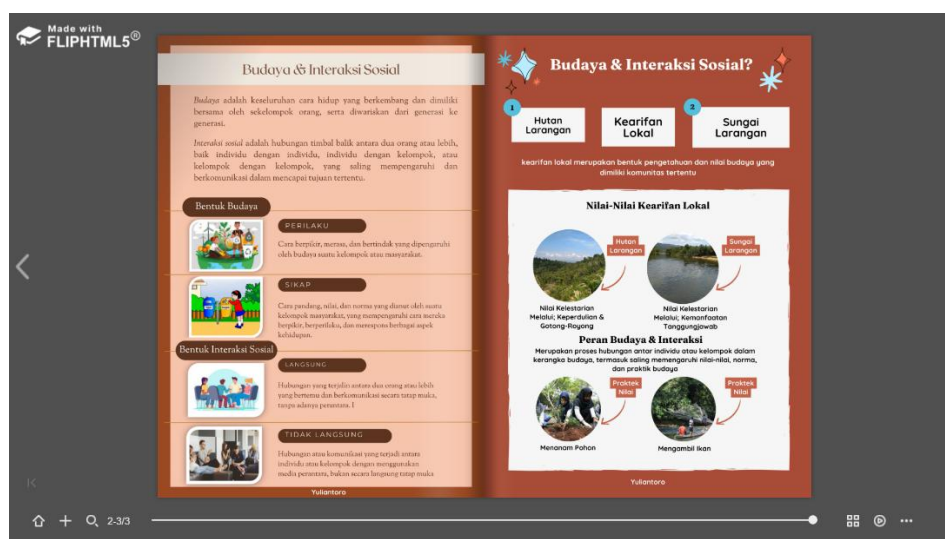


Figure 4. Full Digital Media View

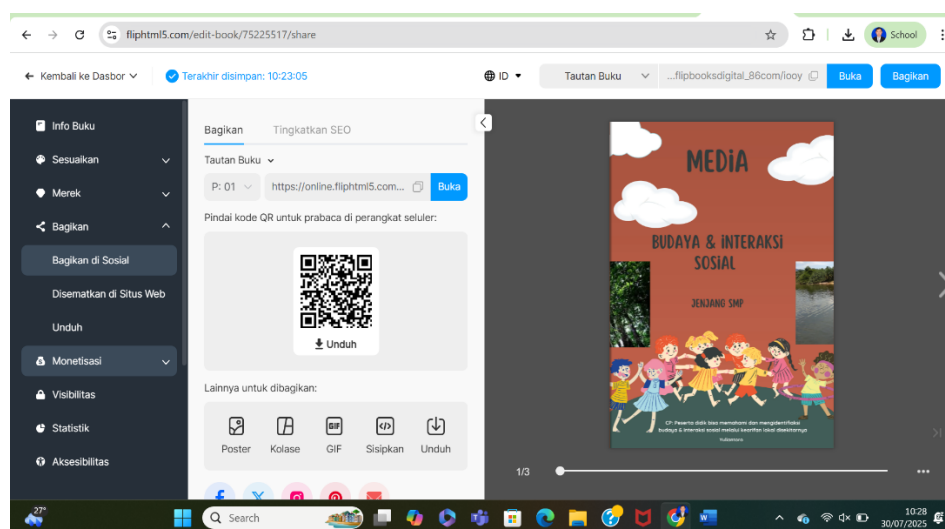


Figure 5. Digital Media Can Be Accessed Through Links or QR Codes

The development of digital media based on the local wisdom of the *hutan larangan* and *sungai larangan* was achieved if teachers allowed access to digital media in addition to using Infocus monitors in the classroom. The reason for developing media using Canva and Heyzine flipbooks is due to time and cost constraints, so media development will be completed more quickly using this platform. This media can also be accessed via gadgets or personal computers during social studies lessons, supported by a very adequate technology-based laboratory, greatly facilitating teachers in delivering material through digital media. This successfully developed media can be accessed via links and QR codes, demonstrating its use of contemporary technology. This digital media can also be accessed in print if classroom learning is limited by electricity. This media is also said to be flexible, meaning that even with limited school facilities, print versions can be used.



Figure 6. Digital Media Coverage Display

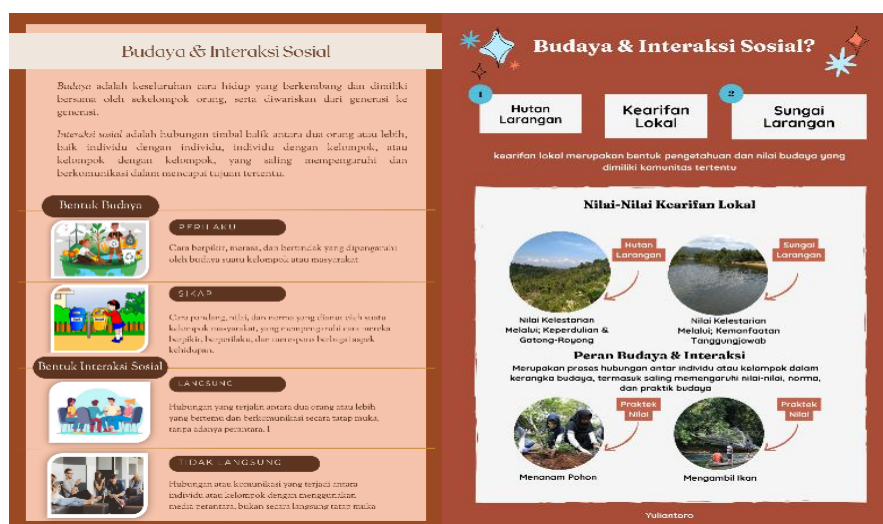


Figure 7. Digital Media Content Display

The implementation phase involves the application of digital media in social studies instruction to students. Input from experts and student feedback regarding media refinement are ongoing. After the materials are compiled using the Canva platform, they are then converted into digital media through the Heyzine platform. The evaluation phase then involves submitting the digital media for review by experts, both content experts and media experts. After refinement based on expert input, the digital media can be implemented as a standard in the classroom and even become a reference in social studies instruction in junior high schools, which is implemented by other social studies teachers.

3.2 Expert Assessment Results

The context of digital media shows that the structure of the material presentation has accommodated the principle of scaffolding, namely the gradual presentation of information starting from the general concept of local wisdom of the forbidden forest and forbidden river. The images presented in digital media are not merely decorative, but are relevant and factual visual documents, such as photographs of manifestations of local wisdom related to cultural material

and social interactions. This can be concluded that digital media with contextual visual elements will be more capable of increasing the cognitive engagement of participants compared to conventional media such as ppt. The results of the digital media feasibility analysis are shown below:

Table 2. Results of the Digital Media Feasibility Assessment

No	Stage Evaluation	Total Score	Percentage	Eligibility
1	Evaluation Expert Material	47	94%	Very Worthy
2	Evaluation Expert Media	52	95%	Very Worthy
3	Small Group (Students)	1440	90%	Very Worthy
4	Large Group (Students)	3386	92%	Very Worthy
	Average			Very Worthy

The product results were validated by two experts, namely material experts and media experts. The results of the validation by material experts showed that the total score obtained was 47 out of a maximum score of 50, then calculated as $\frac{47}{50} \times 100$, with a percentage of 94% which was classified as the "very good" category from the "very eligible" eligibility criteria for testing. Validation by media experts also provided higher results, namely the total score obtained was 52 out of a maximum total score of 55, then calculated as $\frac{52}{55} \times 100$, with a percentage of 95% which was classified as the "very good" category from the "very eligible" eligibility criteria. The validated product was then implemented in small group trials (40 students) and large group trials (92 students) in grades VII, VIII, and IX at SMP A & B. In the small group trial, students showed enthusiasm in understanding the contents of digital media, with the results of the participant response questionnaire assessment reaching a total score of 1440 from a maximum score of 1600, then calculated $\frac{1440}{1600} \times 100$, with a percentage of 90% which is categorized as "very good". The large group trial, with a total score of 3386 from a maximum score of 3680, then calculated $\frac{3386}{3680} \times 100$, with a percentage of 92%, is categorized as "very good".

3.3 Results of Student Learning Engagement

The initial process before the implementation of digital media only used conventional media, the results of measuring engagement and interest in learning in social studies learning. Trials were conducted in small group classes showing results of $\frac{1200}{2000} \times 100$ and large groups showing results of $\frac{2760}{4600} \times 100$ with both small and large group trials having the highest percentage scale of 60% which is included in the "medium" category of student engagement and interest in learning. The results indicate that digital media needs to be used in further trials to see changes in student engagement and interest in learning. The results of this measurement have received approval from the social studies teacher and students, so the results can be displayed like this, and there is no other purpose, other than for research, let alone with the aim of degrading the learning system at this school. The results of the initial measurements before the use of digital media can be depicted in graph 1 below.

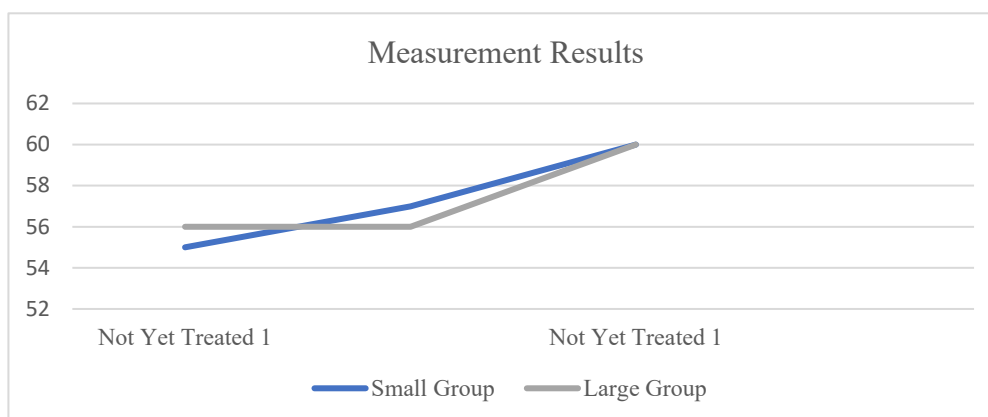


Figure 8. Results before treatment

Based on the results of the application of digital media to increase student learning engagement in junior high school social studies, this learning engagement was assessed in two groups (small groups and large groups). The results of the learning engagement assessment are presented in the following table:

Table 3. Results of Student Learning Engagement

No	Implementation Stage	Media Usage		Information
		Before	After	
1	Small Group	60%	90%	Very High
2	Large Group	60%	93%	Very High

The results of student learning engagement before and after the use of digital media based on the local wisdom of the forbidden forest and the forbidden river in social studies learning. Implementation was carried out in small groups, student learning engagement increased from a score of 1200 (60%) to 1800 (90%), rising from the category "medium" to "very high". While implementation in large groups, the learning engagement score increased from 2760 (60%) to 4278 (93%), also rising from the category "medium" to "very high". This increase shows that the implemented local wisdom-based digital media is able to provide a more interesting learning experience and arouse students' curiosity about social studies learning materials in junior high schools, thus having an impact on increasing student engagement and interest in learning. This increase occurred after there was teacher treatment in the social studies learning process at school.

4. CONCLUSION

This study aimed to examine the effectiveness of digital media based on local wisdom in enhancing student engagement and learning interest in social studies at the junior high school level. The research followed the ADDIE development model, beginning with an analysis that identified key challenges in Kuantan Singingi Regency—specifically, the lack of innovative learning media and teachers’ limited ability to present examples of local cultural values relevant to students. In response, the study developed digital media incorporating narratives, images, and videos aligned with the Basic Competencies for grades VII, VIII, and IX, particularly focusing on the themes of culture and social interaction. The media was systematically designed using storyboards and developed through Canva and the Heyzine platform. Validation by media and content experts, followed by implementation and evaluation stages, revealed a significant increase in student engagement, with small-group trials showing a 90% "very high" engagement rate and large-group trials reaching 93%. Despite these promising results, the study is limited by its focus on region-specific content and its implementation in a relatively small number of schools, which may affect the generalizability of the findings. Future

research should consider expanding the scope to include diverse cultural settings and a broader range of schools to examine the adaptability and effectiveness of local wisdom-based digital media across different educational contexts.

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