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Journal of General Education and Humanities
Vol. 5, No. 3, June 2026, pp. 3899 – 3916, https://doi.org/10.58421/gehu.v5i3.1494
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Development of InShot-Based Interactive Learning Videos for Probability Learning in Grade VIII Students

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Article Info

Article history:

Received 2026-04-27
Revised 2026-06-19
Accepted 2026-06-23

Keywords:

ADDIE Model
Interactive Learning Videos
Inshot
Mathematics Education
Probability Learning

ABSTRACT

Probability learning is often considered difficult because students struggle in understand abstract concepts and relate them to real-life situations. In addition, the integration of contextual, interactive multimedia aligned with local tourism contexts in mathematics learning remains limited, even though such approaches can support more meaningful, student-centered learning experiences. This study aimed to develop and evaluate an InShot-assisted interactive learning video integrated into the tourism context of Pagaralam City to support probability learning among junior high school students. This research employed a Research and Development (R&D) approach using the ADDIE model, comprising analysis, design, development, implementation, and evaluation stages. Data were collected through interviews, expert validation questionnaires, and teacher and student response questionnaires conducted during one-to-one, small-group, and field trials. The results showed that the developed media achieved high feasibility and practicality in supporting probability learning. The integration of contextual tourism content, interactive video features, and mobile-based learning media created more engaging, meaningful, and interactive learning experiences for students. The developed media also supported students' participation and conceptual understanding through contextual and visual learning activities. Therefore, this study contributes to contextual mathematics education by integrating local cultural potential with interactive multimedia learning in probability instruction.

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1. INTRODUCTION

Mathematics plays a fundamental role in education because it serves as the foundation for various scientific disciplines and technological development [1]. In addition to functioning as a universal symbolic language, mathematics contributes to the development of logical, critical, creative, and systematic thinking skills that are essential for solving problems in everyday life [2], [3], [4]. One of the mathematical topics closely related to

reasoning and decision-making is probability. Probability learning requires students to understand uncertainty, analyze possible outcomes, and interpret data logically in various real-life situations such as economics, health, industry, and social phenomena [5]. Therefore, probability is not only a mathematical concept but also an important analytical tool for developing students' higher-order thinking skills and problem-solving abilities.

However, probability remains one of the mathematical topics that students frequently find difficult to understand. Previous studies reported that students often experience difficulties in determining sample spaces, identifying events, interpreting probability data, and applying probability concepts in contextual problems [6], [7], [8]. These difficulties are strongly related to learning practices that still emphasize memorizing formulas and procedural calculations rather than conceptual understanding [9], [10], [11]. As a result, students tend to solve problems mechanically without fully understanding the underlying concepts. In addition, probability learning is often presented abstractly and is rarely connected to students' real-life experiences, making it difficult for students to relate mathematical concepts to meaningful situations [8]. This condition contributes to passive classroom participation, low learning motivation, and limited student engagement during mathematics learning activities.

To address these problems, integrating technology-based learning media has become increasingly important in mathematics education. Interactive audio-visual media can improve conceptual understanding, strengthen memory retention, increase student engagement, and create more meaningful learning experiences [12], [13]. This is in line with multimedia learning principles, which explain that students understand concepts more effectively when verbal explanations are integrated with relevant visual representations. Interactive video media also provide opportunities for students to learn actively through visual observation, contextual examples, and independent exploration of learning materials [14]. In accordance with constructivist learning principles, learning becomes more effective when students actively construct knowledge through interaction with their environment and learning experiences. Therefore, mathematics learning media should not only serve as information-delivery tools but also facilitate meaningful, contextual, and student-centered learning experiences that encourage active participation and conceptual understanding.

One digital application that has strong potential to support this learning process is InShot. InShot is a mobile-based video editing application that is simple, flexible, practical, and easily accessible for teachers and students [15], [16]. Compared with more technically complex multimedia software, InShot enables teachers to create interactive learning videos efficiently without advanced technical skills. This practicality makes InShot particularly relevant for classroom learning, especially in schools with limited technological infrastructure and limited media development resources. Previous studies also demonstrated that InShot-based learning videos have high validity, practicality, and effectiveness in improving students' learning outcomes and participation [17], [18], [19], [20]. Furthermore, interactive video learning has been shown to support students' understanding more effectively by combining visual, audio, Animation, and contextual elements in a single learning medium [21], [22]. Nevertheless, most previous studies primarily focused on the

https://doi.org/10.58421/gehu.v5i3.1494 3901

technical effectiveness of learning videos and have not specifically examined their implementation in probability learning integrated with local contextual content.

Several previous Research and Development studies have developed various mathematics learning media, particularly for probability materials. One of them was [23], who developed Android-based interactive media for probability learning at the high school level, but the product was not designed in the form of contextual interactive learning videos. Meanwhile, [24] and [25] developed interactive multimedia using Articulate Storyline, focusing mainly on desktop-based learning media. Other studies developed InShot-based learning media integrated with ethnomathematics and thematic learning approaches [26], [27], but these studies did not specifically focus on probability materials or integrate local tourism contexts into mathematics learning. These findings indicate that existing learning media still have several important limitations. First, probability learning media are still dominated by abstract explanations and procedural exercises that are less connected to students' real-life experiences. Second, the use of InShot in mathematics learning research remains relatively limited, particularly at the junior high school level. Third, there is still limited integration between interactive mobile-based learning videos and contextual local learning resources that are closely related to students' social and cultural environments. Consequently, students' opportunities to learn probability concepts through authentic and meaningful contexts remain limited.

From a pedagogical perspective, integrating local tourism contexts into mathematics learning is important because it supports contextual learning principles that emphasize connecting academic concepts with students' real-life experiences [5], [13]. Local tourism objects can provide authentic situations that make abstract probability concepts more concrete, meaningful, and easier for students to understand. Contextual learning environments also help students develop stronger conceptual understanding because learning materials are associated with familiar situations found in their surrounding environment [3]. In addition, integrating local tourism into learning activities can increase students' motivation, participation, and cultural awareness because the learning process becomes more relevant to their social and cultural backgrounds [14], [28]. Previous studies also indicate that contextual and interactive video-based learning contributes positively to student engagement and learning outcomes [13], [22]. Therefore, integrating local tourism contexts in mathematics learning is not only academically relevant but also pedagogically important for creating meaningful, student-centered, and contextually relevant learning experiences.

Based on these problems and research gaps, this study aims to develop InShot-assisted interactive learning videos integrated with the local tourism context of Pagaralam City for probability learning among grade VIII junior high school students. The novelty of this study lies in integrating mobile-based interactive video learning, probability materials, and local tourism contexts within a contextual mathematics learning framework. Unlike previous studies that primarily focused on technical media development or general multimedia effectiveness, this study combines interactive multimedia principles, contextual learning approaches, and local cultural potential to create more meaningful and engaging mathematics learning experiences. Theoretically, this research is expected to contribute to

the development of contextual multimedia learning studies in mathematics education, particularly in probability learning. In practice, the developed media is expected to serve as an innovative learning alternative that enhances students' conceptual understanding, motivation, participation, and engagement in mathematics learning activities.

2. METHOD

This study employed the Research and Development (R&D) method to develop an interactive learning video assisted by the InShot application on probability material for grade VIII students at SMP PGRI Pagaralam. The development procedure referred to the ADDIE model, which consists of five stages: analysis, design, development, implementation, and evaluation [29], [30]. The use of the ADDIE model was considered appropriate because it provides systematic stages in designing, developing, implementing, and evaluating learning media products.

The participants in this study included grade VIII students from SMP PGRI Pagaralam, three expert validators, and one mathematics teacher. The expert validators included a material expert, a media expert, and a language expert. The selection of validators was purposive, based on expertise, educational background, and experience relevant to the development of mathematics learning media. Meanwhile, the student participants were selected using purposive sampling techniques based on their involvement in probability learning activities and their willingness to participate in the study.

This study was conducted ethically, with permission from the school obtained before conducting the research. All participants were informed of the study's purpose, and their participation was voluntary. The collected data were used only for research purposes and kept confidential.

The analysis stage was conducted to identify learning needs, curriculum characteristics, student difficulties, and problems encountered in probability learning. Data were collected at this stage through interviews and classroom observations with mathematics teachers and students. The findings indicated that students experienced difficulties in understanding probability concepts because learning activities were still dominated by procedural approaches and lacked contextual learning media.

The design stage involved preparing the initial design of the learning media. At this stage, the researchers designed the structure of the interactive learning videos, selected probability materials, determined learning objectives, arranged learning scenarios, and prepared visual designs integrated with the tourism context of Pagaralam City. In addition, the instruments used in the study, including validation and practicality questionnaires, were designed during this stage.

The development stage involved producing the interactive learning videos using the InShot application based on the previously designed storyboard and media design. The developed product was then validated by experts in materials, media, and language to assess content feasibility, media presentation, language appropriateness, and pedagogical suitability. The validation instruments were developed based on indicators adapted from previous studies on learning media development [31]. The material validation indicators included content accuracy, material suitability, conceptual clarity, and learning relevance.

Media validation indicators included visual appearance, layout, typography, Animation, audio quality, and interactivity. Meanwhile, language validation indicators included readability, sentence effectiveness, language clarity, and appropriateness of language use for junior high school students.

Before use in the research, the questionnaire instruments were reviewed and validated by expert validators to ensure content appropriateness and clarity of indicators. Revisions to the instruments were made based on the validators' suggestions. The questionnaires used a four-point Likert scale consisting of 4 (very good), 3 (good), 2 (poor), and 1 (very poor) [31].

The implementation stage was carried out through three product trials conducted in three stages: one-to-one Evaluation, small-group Evaluation, and field testing. The one-to-one evaluation involved 3 students representing high, medium, and low academic abilities to identify initial difficulties in using the media. The small group evaluation involved 9 students to evaluate the practicality and usability of the product in limited learning activities. Furthermore, the field test involved 30 grade VIII students of SMP PGRI Pagaralam to determine the practicality of the developed learning media in broader classroom implementation. At this stage, the mathematics teacher and students were asked to respond to the practicality, attractiveness, ease of use, and usefulness of the developed media.

The evaluation stage was conducted continuously throughout the development process to review and improve the product based on validation results and user responses. Evaluation activities included revising media content, improving visual presentation, refining language, and adjusting interactive components in response to suggestions from validators and users. This stage aimed to ensure that the developed learning media met validity and practicality criteria and were suitable for use in mathematics learning.

Data in this study were collected through interviews, questionnaires, and documentation. Interviews were used to identify learning needs and problems encountered in probability learning. The questionnaires consisted of validation questionnaires and practicality questionnaires. Validation questionnaires were used to assess product feasibility by material, media, and language experts, while practicality questionnaires were used to determine teacher and student responses toward the developed learning media. Documentation techniques were used to support the research implementation process, including photograph documentation, validation sheets, and learning activity records.

The data obtained from the validation and practicality questionnaires were analyzed using descriptive quantitative analysis by calculating the percentage score with the following formula:

$$P = \frac{\sum x}{\sum x_i} \times 100\% \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

Description:

P = Present Validity

$\sum x$ = Total Scores Obtained

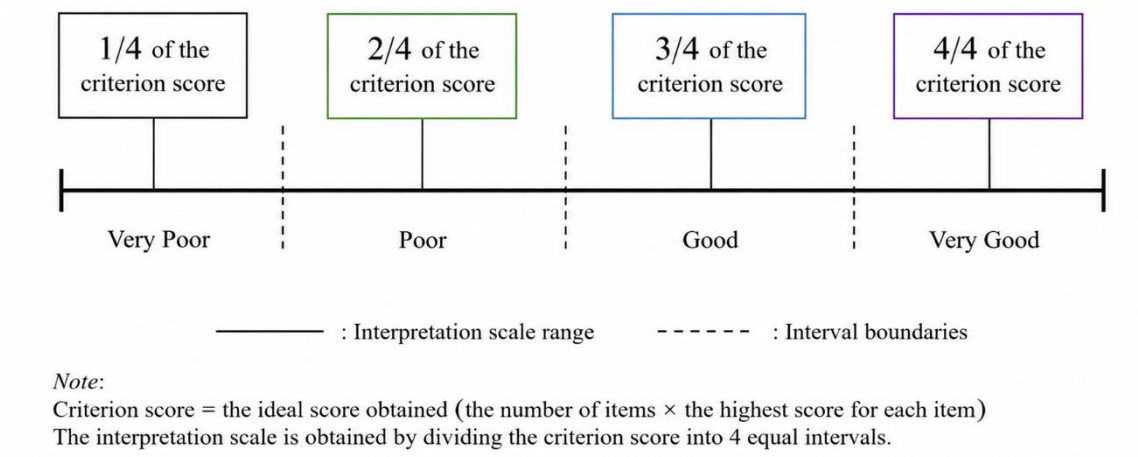
$\sum x_i$ = Maximum Score Amount

Based on the percentages obtained, the results were then classified into specific categories according to the interpretation criteria presented in Table 1. The interpretation categories were adapted from [31] (see Figure 1), which were developed based on rating scale analysis by dividing the ideal score criteria into four interpretation intervals (see Figure 1). In this study, the developed mathematics learning video, assisted by the InShot application, was considered valid and practical if it achieved a score of 51%-100%.

Table 1. Categories of Results, Percentage of Validation, and User Response Questionnaires

Percentage Value (%)	Categories
76% - 100%	Very Valid
51% - 75%	Valid
26% - 50%	Invalid
0% - 25	Very Invalid

Sources: [31]



Note:
Criterion score = the ideal score obtained (the number of items × the highest score for each item)
The interpretation scale is obtained by dividing the criterion score into 4 equal intervals.

Figure 1. Interpretation Scale
Sources: [31]

This study focused on evaluating the validity and practicality aspects of the developed media in the initial stages of product development research. The product development in this study was limited to validity and practicality testing because the research focused on producing a feasible learning media prototype before conducting broader effectiveness evaluation. Therefore, effectiveness testing was not conducted in this study. Further studies are recommended to examine the effectiveness of the developed media in improving students' learning outcomes and conceptual understanding in probability learning.

3. RESULTS AND DISCUSSION

3.1. Stage Results in the R&D Method (ADDIE)

3.1.1. Stages *of Analysis*

In the *analysis stage*, the needs and curriculum of existing learning are identified through interviews and observations to find out the problems experienced by students and teachers in learning material opportunities.

A. Needs Analysis

A needs analysis was conducted to identify obstacles in mathematics learning, serving as the basis for media development for grade VIII students. The results of interviews with teachers at SMP PGRI Pagaralam showed that students still had difficulty understanding probability materials, tended to rely on textbook examples or teachers' explanations, and experienced confusion when faced with a variety of questions. Teacher-centered learning was also found to be less interesting. In addition, the use of interactive video media based on the context of local tourism is still limited, and teachers have not used applications such as InShot due to limited facilities and technical knowledge. Therefore, more interesting, contextual, and interactive learning videos were developed to increase student engagement and help teachers deliver material more effectively.

B. Curriculum Analysis

The curriculum analysis examines the learning references used in schools, including learning outcomes, learning objectives, and teaching materials. The analysis shows that PGRI Pagaralam Junior High School implements the Independent Curriculum. The development of the video aligns with the Learning Objective Flow (ATP) in Phase D Mathematics, where students are expected to understand and use the concepts of probability and relative frequency to determine the frequency of outcomes in simple experiments. In addition, students are expected to be able to determine the value of opportunities, the relative frequency, and the frequency of expectations, as well as to take representative samples to obtain data relevant to the surrounding environment.

3.1.2. Design Stages

The *Design stage* involves preparing a learning media design in the form of interactive videos, including determining the content, presentation flow, and visual design, as well as the learning context tailored to the needs, especially students' characteristics. In this study, the design of mathematics learning videos in the probability material for class VIII of SMP PGRI Pagaralam was carried out by compiling a framework as a guide to facilitate the video production process, which is presented in Table 3 below.

Table 2. Main Parts Design Framework

Video Section	Integration of the Tourism Context of Pagaralam City	Inshot-Assisted Design	Remarks
Openings	Displaying footage of tourist attractions and megalithic sites in Pagaralam City.		Smooth transitions, voice narration, and soft background music.

Video Section	Integration of the Tourism Context of Pagaralam City	Inshot-Assisted Design	Remarks
Guiding/triggering questions	Ask what the tourist attractions are in Pagaralam City.		Animation, voice narration, cutting feature, and video pause to give students time to answer.
Connecting Prior Knowledge	Relate the material to the students' experiences in the learning activities.		*Subtitles*, Dialogue Animation, features tours of Pagaralam City and voice narration.
Presentation of the Concept	Explain the definition of probability, sample space, sample point, and probability formula.		Text, Animation, Crop feature, video pause to give students time to answer, and voice narration.
Guiding/triggering questions	Ask if students have understood the initial concept of probability.		Text, Animation, and voice narration.

Video Section	Integration of the Tourism Context of Pagaralam City	Inshot-Assisted Design	Remarks
Questions	Questions based on the tourism context, namely, the climbing path of Mount Dempo		Text, voice narration, and background music are soft and guide the viewer along the climbing path on Mount Dempo.

After the design framework is prepared, the next stage is the production of an interactive learning video, assisted by the InShot application, consisting of 17 clips: an opening section, triggering questions, Connecting Prior Knowledge, the presentation of concepts, and practice questions. The completed video is saved and uploaded to Google Drive to facilitate access and optimize storage space, resulting in a product in the form of an interactive learning video on probability materials.

3.1.3. Stages *of Development*

At this *stage of development*, learning videos are made using the InShot application based on the prepared design. The product is then validated by media, material, and language experts to ensure the feasibility of content, display, and pedagogical aspects before revision.

Table 3. Validation Results by Validators (Media Experts, Subject Matter Experts, and Linguists)

MEDIA MEMBERS				
Yes	**Aspects Assessed**	**Score Score**	**%**	**Categories**
1.	An interesting early look at the learning video	3	75	Valid
2.	Visual display suitability (colors, images, and animations).	4	100	Highly Valid
3.	The transitions between parts of the video are presented smoothly and not confusingly.	3	75	Valid
4.	The duration of the learning video is according to the time and needs of learning in the classroom.	3	75	Valid
5.	The quality of the images and animations in the video is clear and does not interfere with the delivery of the material.	3	75	Valid
6.	The audio quality (narration and background music) sounds clear and balanced.	3	75	Valid
7.	Learning videos are easy to operate and accessible to teachers and students.	4	100	Highly Valid
8.	Interactivity in videos (questions, pauses, or activities) can encourage student activity.	3	75	Valid
9.	Interactivity in videos can encourage active student engagement.	3	75	Valid
10.	The use of the tourism context of Pagaralam City is relevant and supports the understanding of the concept of probability.	3	75	Valid

Average		**80**	**Highly Valid**

MATERIAL EXPERT

Yes	Aspects Assessed	Score Score	%	Categories
1.	The probability material in the learning video is in accordance with the Learning Outcomes in the Independent Curriculum.	4	100	Highly Valid
2.	The presentation of probability materials supports strengthening conceptual understanding.	3	75	Valid
3.	The material is presented contextually through the integration of tourism in Pagaralam City according to the principles of meaningful learning.	4	100	Highly Valid
4.	The material presented encourages students to reason and think critically.	4	100	Highly Valid
5.	The examples and illustrations in the video are relevant to the daily lives of learners.	4	100	Highly Valid
6.	The questions or activities in the video support active and reflective learning.	3	75	Valid
7.	The depth and breadth of probability material in the video is in accordance with the learning level of the students.	3	75	Valid
8.	Use of language that is easy for students to understand	4	100	Highly Valid
9.	The presentation of the material provides a space for students to relate the concept of probability with real experiences in the surrounding environment.	4	100	Highly Valid
10.	The material is presented with an approach that encourages students' learning independence.	4	100	Highly Valid
Average			**92,5**	**Highly Valid**

LINGUIST

Yes	Aspects Assessed	Score Score	%	Categories
1.	The language used is in accordance with the rules of good and correct Indonesian language.	4	100	Highly Valid
2.	The language used in the learning videos is easy for students to understand	4	100	Highly Valid
3.	The language used does not contain ambiguous or confusing elements for students.	3	75	Valid
4.	The language used is formal.	4	100	Highly Valid
5.	The narration in the video is delivered with a clear and easy-to-understand intonation.	3	75	Valid
6.	The use of letter variations is not excessive.	3	75	Valid
7.	Doesn't use too many different typefaces.	3	75	Valid
8.	The sentences used are clear, effective, and do not cause double interpretation.	4	100	Highly Valid
9.	The choice of words is done precisely.	3	75	Valid
10.	The text or text displayed in the video is easy to read.	3	75	Valid
Average			**85**	**Highly Valid**

The validation results (Tabel 3) indicate that the developed InShot-assisted interactive learning video achieved a high level of feasibility in terms of media design, material quality, and language appropriateness. The material aspect obtained the highest validation score, indicating that integrating contextual probability concepts into the tourism

context of Pagaralam City successfully supported meaningful, conceptually appropriate learning. In addition, the media validation results indicate that the video's visual appearance, interactivity, and accessibility were considered appropriate for junior high school students. The language validation also confirmed that the narration, subtitles, and instructional language were sufficiently clear and understandable for students. Based on validators' suggestions, several revisions were made to improve the technical quality, conceptual clarity, and interactivity of the developed media before implementation.

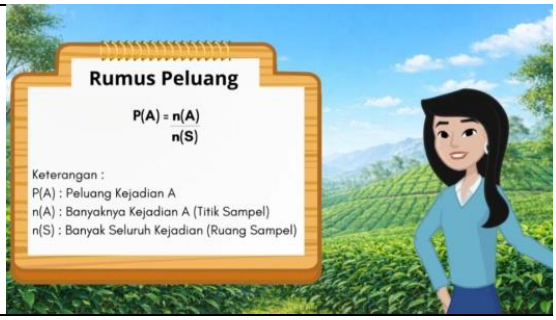
Table 4. Improvement Results from Media Expert Validator's Suggestions and Inputs

Yes	Expert Advice	Revision
1		
	There is a lag in the learning video at 2.36 minutes.	*The lag* in the learning video has been fixed.
2		
	Display of Animation before adding the STKIP Muhammadiyah Pagaralam logo to cover the AI-generated watermark	Animated display after adding the STKIP Muhammadiyah Pagaralam logo.
3		
	The video looks like it was made before subtitles were added, from start to finish.	The video looks like it has subtitles added from the beginning to the end.

Table 5. Improvement results from the suggestions and inputs of the subject matter expert validator

Yes	Expert Advice	Revision
1.		
	The learning video only explains the definition of event opportunities; it does not explain the meanings of sample rooms and sample points.	A brief, clear explanation of the meaning of the sample room and sample point has been added.
2.		
	There are no stages in answering presentation questions that can confuse students.	At the end of the learning video, there is an explanation of the stages in explaining the answers to the presentation task.

Table 6. Improvement results from the linguist validator's suggestions and inputs

Yes	*Expert Advice*	*Revision*
1.		
	Video view before the added *subtitles* of the video's male characters.	The video looks better after subtitles are added to the male characters.
2.		
	Video Previous formula is written using a slash (/).	A video view after using the per in the probability formula.

3.		
	The video display has provided activities that invite students to interact.	Display a video after adding activities that invite students to interact.

After going through the validation and improvement process based on expert input (in Tables 4, 5, and 6), the interactive learning videos on probability materials that have been declared valid are then used to test practicality. The trial was conducted at SMP PGRI Pagaralam, involving teachers and students to obtain their responses on the practicality of the developed product.

3.1.4 Stages *of Implementation*

The *implementation* stage is carried out through product implementation trials for grade VIII students of SMP PGRI Pagaralam in stages, starting from individual tests, small groups, and field tests to obtain user feedback, which is then used as a basis for product improvement before being applied in wider learning in grade VIII of SMP PGRI Pagaralam. During the implementation process, data are collected through teacher and student response questionnaires to assess the practicality of the media used.

Table 7. Recapitulation of Practical Results of Interactive Videos from Teacher and Student Responses

Yes	Practical Respondents	Research Stages			Average Final Score	Categories
		One-to-One	*Small Group*	*Field Test*		
1.	Teacher	-	-	85%	85%	**Very Practical**
2.	Students	87,5%	88,8%	89,1%	88,5%	**Very Practical**

Based on the practicality test results, both teachers and students responded positively to the developed learning media. The teacher response obtained a practicality percentage of 85%, while the average student response reached 88.5%, both categorized as very practical. These findings indicate that the developed interactive video was considered easy to use, attractive, and supportive of classroom learning activities.

During implementation, students showed active engagement in the video-based learning activities. Students appeared enthusiastic in responding to triggering questions, observing contextual tourism illustrations, and discussing probability problems presented in the video. The pause-and-response features integrated into the video also encouraged students to participate more actively during classroom discussions. In addition, several students demonstrated improved confidence in expressing their answers and explaining probability concepts in real-life situations in the Pagaralam tourism context.

The field test results also showed that integrating local tourism contexts helped students connect abstract probability concepts to familiar situations in their surroundings. This contextual presentation created a more meaningful learning atmosphere and increased students' attention during the learning process. Teachers also reported that the developed media helped simplify concept explanation and created more varied classroom interactions compared with conventional learning methods.

3.1.5 Evaluation Stages

The evaluation stage was conducted to assess the overall quality of the developed product based on the validity and practicality results obtained during implementation. The evaluation results indicate that the developed InShot-assisted interactive learning video is feasible and practical for supporting probability learning activities in junior high school. The media successfully integrated contextual learning principles, multimedia elements, and local tourism content into a more engaging learning experience.

In addition to supporting conceptual understanding, the developed media also increased students' participation and classroom interaction during learning activities. The contextual presentation of probability materials through tourism situations in Pagaralam City encouraged students to relate mathematical concepts to their real-life experiences. These findings support previous studies emphasizing that contextual and interactive video-based learning can improve student engagement and learning motivation [10], [11], [14], [28].

However, this study still has limitations, particularly its reliance on digital devices and internet access for optimal media use. Furthermore, this research focused only on validity and practicality testing; therefore, broader effectiveness evaluation has not yet been conducted. Future studies are recommended to examine the effectiveness of the developed media in improving students' conceptual understanding and learning outcomes in probability learning.

3.2. Discussion

This development research aims to produce interactive learning videos on probability materials, assisted by InShot, for the tourism context of Pagaralam City, using the systematic ADDIE model. The selection of this model is based on its effectiveness in producing structured learning media across the analysis, design, development, implementation, and evaluation stages [30].

The results of the development showed that InShot-assisted interactive learning videos on probability materials with the tourism context of Pagaralam City met the eligibility criteria based on validity and practicality tests. The developed products were considered

highly valid by media, material, and language experts, indicating that the content, display, and linguistic aspects were suitable for use in learning. This finding is in line with the study that confirms that learning media designed with a systematic approach and based on the needs of students tend to produce products that are more suitable for use in learning [29], [32].

In addition, the high level of practicality demonstrated in teachers' and students' responses indicates that this medium is easy to use and well-received in the context of real learning. This corroborates previous findings that using the InShot application in the development of learning video media can improve ease of access and flexibility in learning [19], [33]. In fact, other studies have shown that InShot-based videos can increase student engagement because they present the material visually and in a more contextually rich way [17].

The high practicality also suggests that integrating interactive videos in mathematics learning, especially in probability materials, can help students understand abstract concepts through more concrete visualizations. This is in line with research [23], [25], which states that interactive learning media in probability materials can improve concept understanding because they provide a more visual and exploratory learning experience. However, research also shows that without proper pedagogical design, video-based media does not always have a significant impact on students' understanding of mathematical concepts [7], underscoring the importance of instructional design quality.

The results of this study also show that the relevance of local contexts (Pagaralam City tourism) contributes to increasing student involvement in learning. These findings support a contextual learning approach that emphasizes the importance of associating material with students' real-world environments to enhance the meaning of learning [2]. Thus, the use of local context in learning videos not only strengthens learners' understanding of concepts but also increases the material's relevance to learners.

Furthermore, the positive responses obtained during the implementation process indicate that the developed media has the potential to support students' conceptual understanding and engagement in probability learning. The combination of visual explanations, contextual tourism illustrations, and interactive learning activities created a more meaningful learning experience for students. These findings are in line with [21], which states that interactive learning videos that combine audio-visual elements with interactive features, such as quizzes and simulations, can improve student engagement and understanding. In addition, research by [22] shows that learning videos designed in an educational way can significantly improve student learning outcomes.

However, this study's results also highlight limitations, especially in the media's reliance on devices and internet connections. This is in line with the findings [20], which state that the use of application-based digital media still faces accessibility constraints under certain conditions. Therefore, further development is needed so that learning media can be more adaptable and less dependent on specific technical conditions.

4. CONCLUSION

The development of InShot-assisted interactive learning videos integrated with the tourism context of Pagaralam City demonstrated that contextual and multimedia-based mathematics learning media can support more meaningful probability learning for junior high school students. The developed media was considered feasible in terms of content, media design, and language, indicating that integrating interactive video elements and local contextual content can create learning experiences that are more engaging, accessible, and relevant to students' real-life environments. The findings also indicate that interactive mobile-based learning media have the potential to encourage students' active participation, improve learning interaction, and support conceptual understanding in probability learning.

Theoretically, this study contributes to the development of contextual mathematics learning by integrating multimedia learning principles, constructivist learning approaches, and local-context-based learning into a single instructional media product. The integration of local tourism contexts into probability learning also strengthens the implementation of Contextual Teaching and Learning (CTL) principles, in which students construct mathematical understanding through situations closely related to their daily experiences. In practice, this study provides an alternative reference for teachers in developing innovative, contextually relevant mathematics learning media that are more adaptable to students' characteristics and the digital learning environment.

However, this study has several limitations. The product evaluation was limited to validity and practicality testing and did not comprehensively assess the media's effectiveness on students' learning outcomes or long-term conceptual understanding. In addition, the developed media were specifically designed for probability materials and involved a limited number of participants in a single school context, so that broader implementation may require further adaptation and testing.

Therefore, future studies are recommended to conduct effectiveness testing using experimental or quasi-experimental designs with larger, more diverse participants. Further development can also expand the application of contextual interactive videos to other mathematics topics and integrate additional interactive features to support more adaptive and collaborative learning experiences. In a broader context, this study contributes to the utilization of local cultural and tourism potential as meaningful learning resources in digital mathematics education.

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