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#### **RESEARCH ARTICLE**

# Development of Visual Learning Media Based on A'rera Local Wisdom to Improve Learning Outcomes and Social Responsibility in Learning Science and Sciences Grade IV Elementary School

Firmansah Koesyono Efendi<sup>1\*</sup>, Ida Bagus Putu Arnyana<sup>2</sup>, Sariasa<sup>3</sup>, I Wayan Kertih<sup>4</sup>

<sup>1,2,3,4</sup> Ganesha Education University Elementary Education Students

ARTICLE INFO	ABSTRACT
Received: Nov 16, 2024	Learning media is a teacher tool that has an important role in the learning
Accepted: Jan 8, 2025	process in today's era, the use of visual learning media can make it easier for teachers to convey subject matter well to make it easier for students to
	understand learning. This research was carried out because it was
Keywords	motivated by the lack of development of visual learning media based on local wisdom which is the most important aspect to strengthen the
Visual Media	foundation, form character, and explore identity based on the goals of the
Local Wisdom	independent curriculum. The purpose of this research is to produce visual learning media products based on local wisdom to improve learning
Learning Outcomes	outcomes and student responsibility. The research design uses the research
Responsibility	and development model plomp. The goal of media development at SD Inpres Campagaloe 1 Bantaeng Regency is as a means of learning and to
	measure the quality of the media that has been prepared. The preparation
	of visual learning media involved experts, the results of the content validity test showed that a score of 81%, for the media validity test obtained a score
	of 92.1%, and the validity test of the paktisi obtained a score of 85.7% so it
	can be concluded that it is very valid. The practicality of visual learning media is shown by the results of the responses of teachers and students
	who obtained very practical criteria. Meanwhile, the visual media
*Corresponding Author:	hypothesis test is seen from the simultaneous test F which shows that H0 is rejected and Ha is accepted. This can be seen in the significant value
	obtained, which is $0.000$ while the significant value of the F test < $0.05$ .
firmansah.koesyono@gmail.c om	Effective visual learning media is used that can have a positive impact on learning outcomes and responsibility.

### **INTRODUCTION**

Learning is a very important activity for human life. Learning is actually an activity that is carried out to create an atmosphere or provide services to students in learning and can acquire knowledge, attitudes and skills well. Therefore, a teacher must be able to provide good and pleasant service so that students enjoy and absorb every learning process carried out. Learning activities involve two elements, teachers and students. The combination of them can produce educational interactions to achieve a certain learning goal. The learning process depends on the teacher as one of the learning resources. In conditions like this, there is a learning process when there is a teacher without the presence of a teacher in the classroom as a learning resource, it is impossible for there to be a continuous learning process. Teaching and learning activities involving students and teachers at school are carried out almost every day. Schools become infrastructure vehicles for students, most of their time is used in that place (Darman, R. A. 2020). The sustainability and success of the teaching and learning process is inseparable from the role of teachers as facilitators and as an example for students. Teachers must understand how students can gain knowledge from learning activities. Efforts to achieve education that can produce a quality person through learning. The achievement of a learning process is shown by a change in behavior for the better, involving three aspects of change,

cognitive, psychomotor, and affective. The achievement of these changes is influenced by various factors, namely educators, students, environment, facilities, infrastructure, learning methods, and learning resources (Septiani, P. 2023). The learning outcomes of students in science and science learning are expected to get good results. The active involvement of students can build a foundation for a basic understanding of the Social Sciences (IPS) subjects taught to achieve the criteria for reference learning objectives that have been determined. The achievement of maximum learning outcomes is determined by the conditions of the supportive learning environment, facilities, infrastructure, learning media, and the application of methods carried out by a teaching staff. The learning outcomes that have been obtained by students are measured by the acquisition of scores above the minimum completeness criteria (KKM). With the awareness of learning discipline so as not to interfere with the concentration of students in carrying out learning obligations so that they can obtain changes in each individual to achieve changes in behavior, learning outcomes and knowledge.

Activities in elementary schools are a support for students to gain additional knowledge and experience that can be linked in learning so that it can have an impact on student learning outcomes, one example of classroom cleanliness competitions, smart and careful competitions and religious competitions. With these activities, students continue to have a spirit of learning and learning discipline to achieve optimal results. Learning outcomes are a person's acquisition after participating in learning process activities which include cognitive, affective, and psychomotor aspects that can be expressed as symbols, letters, sentences or numbers so that they can reflect the quality of individuals in a certain process (Endang Sri Wahyuni, 2020). Furthermore, the responsibility of students in elementary schools who are expected to be good for the future as members of the community to instill a sense of social responsibility and care for local wisdom culture, there needs to be a synergy of the educational trilogy, including schools, families, and communities. From this formal and nonformal education, it provides a cognitive and affective domain for students to provide understanding and encourage the importance of social responsibility.

A person can be responsible by doing or completing the work that is a task, responsibility needs to be instilled in students and to implement their responsibilities such as, following lessons to completion, maintaining classroom cleanliness, and obeying school rules will have an impact to the next level. According to R. A. Sari & Murdiono (2020), character will be carried by students to the level of maturity. In general, responsibility shows a character that upholds integrity in a community. Among students, responsibility is something that should be done to bear the duties as school residents, both doing assignments, maintaining school facilities, cleaning the school environment, and maintaining the state of the classroom. That way, the enthusiasm of students can increase, especially in the teaching and learning process so that it can spur good learning outcomes. The attitude of social responsibility grows through external encouragement so that it can be expressed proactively towards the surrounding environment through its involvement. Judging from the historical, sociological and pedagogical foundations, it provides the basis for how important character education is to provide a sense of responsibility to students in making human beings according to their aspirations, this implementation can be carried out in schools to instill character values through activities in the classroom and environment at school. The national policy for the development of the nation's character states that there are seven of them, including the family environment, the school environment, the civil society environment, the political society environment, the mass media environment, the government environment, and the business environment. Thus, teachers must understand the change in students' attitudes, this is inseparable from the teacher's guidance by taking a persuasive and humanist approach, so that there is a change in behavior in students that can be observed and measured in the form of changes in knowledge, attitudes and skills. These changes can be interpreted as an increase in development that is better than before, for example from not knowing to knowing, being disrespectful to being polite. Based on the objectives of the National Education System of the Republic of Indonesia Law No. 20 of 2003 chapter II Article 3 contains: National education functions to develop abilities and shape the character and civilization of a dignified nation to educate the life of the nation in order to achieve the development of the potential of students to become human beings who believe in and devote themselves to God Almighty, knowledgeable, creative, healthy, independent, and become democratic citizens. In connection with the National Education System that has been listed above, it is expected and sought to form character and become a democratic citizen in carrying out community life. Especially in the realm of the school environment, students are one of the spearheads to build a social interaction in aligning common goals, the communication that is built can adjust students as best as possible to the environment to change and understand each other about adekuat (equality).

The relationship of social interaction of students as a bridge in connecting with other students, in this case, a togetherness and/or mutual help can be done so that it is well established to realize cohesiveness. According to Soekanto (2012: 54), social interaction is a key to all people's lives, without social interaction, coexistence is not possible. Meeting people will result in life association in a social group. Such a life association will occur when individuals and/or groups of people work together, talk to each other, for a common goal, so it can be said that social interaction is the basis of social processes that point to dynamic social relationships. Reciprocal relationships between students that are established between two or more people in order to build togetherness and mutual understanding. This shows that there is a strong positive relationship of social interaction of students. Thus, as school residents can instill a sense of social responsibility among others as a form of concern to achieve common goals, the harmony of students is expected to support in creating a good relationship. In addition, teachers and educators have an important role as school residents in providing supervision, coaching, and teaching. This role can help students in establishing good mutual relationships between students with each other, guidance helps students get to know and relate to the environment at school based on ethics and social responsibility and can get to know the school environment objectively. The concept of the approach taken in building social responsibility is in line with Personal Social Responsibility (Ganiem, Ambadar, Soekardjo, Mona, 2020), based on an altruistic attitude, meaning the act of voluntarily helping others selflessly. Altruism is the act of prioritizing the interests of others above one's own interests can develop a good cooperative attitude among others. Various ways have been carried out by a teacher to provide guidance, teaching, and facilitate students in the learning process including instilling an attitude of responsibility, alternative teaching, applying rules to be obeyed for students and imposing sanctions for violators thereby instilling a sense of responsibility towards themselves and others. The reality in today's era, learning outcomes and responsibilities have not met expectations due to the influence of rapid development, including in the world of education, many things are starting to erode with the influence of westernization. Local wisdom values such as gotog royong which are community habits. However, the reality is that the value is starting to fade. Students are spoiled with technology so that they are more consumptive and sensitive to each other, regardless of the social environment. That way, learning in the classroom by presenting visual learning media so that teachers can re-cultivate a sense of responsibility among fellow students within the school scope. Presenting media is an adoption of a real object, providing a description of real life (Ridha, M. Z. 2022). The enthusiasm of students for mutual cooperation is still very minimal, most of them are only involved in getting recognition for teachers, without any encouragement in themselves as a result of the meaningfulness in establishing togetherness does not give an impressive feeling. Research data from Leila Mona (2019) on the empowerment of social responsibility characters, as many as eighteen students, showed that only six people showed a tendency to participate in mutual cooperation at school and outside the school environment. The cultivation of social responsibility attitudes towards students still needs to be carried out and improved as part of the elements of society, the transformation of students is not only from the cognitive realm but also requires awareness and understanding of the affective realm related to attitudes, values, feelings, and emotions.

According to Nur Novtian Maya's research (2020), the responsibility of students is still very minimal, there are some students who still cheat on other students' assignments and blame their friends for giving the wrong answer when students get bad grades. Students also do not care about the cleanliness of the classroom, this is proven when the recess hour has ended, the chairs and desks are messy and the classroom is still dirty. Students who are less responsible will experience learning difficulties in receiving subject matter so that it has an impact on poor learning outcomes.

There are poor learning outcomes in social studies subjects, research by Intan Indah Tri Murti (2021) states that the low scores of students can be seen from the acquisition of daily test results where as many as 60% of students still get a score less than the minimum completeness standard (KKM) that has been determined with a standard score of 75. Student participation is still very lacking, the learning atmosphere is not supportive in arousing the spirit of learning and activeness.

After an analysis of several important points as a note related to learning outcomes and responsibilities, namely: (1). Students' awareness in maintaining the cleanliness of the school environment is still lacking, littering carelessly, (2). Students are not so enthusiastic about participating in lessons in class, (3). Existing visual media is not interesting to students, (4). Students still tend to be selfish so that there is no collaboration to take action arera. (5). The visual media used is still lacking in relevance to the students' performance in the lesson, so that learning is still monotonous, (6). The learning outcomes in social studies learning are still low, (7). The lack of visual media that can trigger an increase in learning outcomes, due to the lack of the latest learning resources in schools (8). There are still many students who obtain learning outcomes at the minimum standard of completeness, (9). The lack of responsibility of students in maintaining school facilities. It was found that in the preliminary study, it was still found that students did not pay attention to the subject matter conveyed by the teacher, such as talking to their classmates and doing something unrelated to the ongoing lesson (Arfandi, A. 2020). In fact, the enthusiasm of students in the learning process still needs attention, it is inseparable from the control of classroom conditions and learning time, therefore teachers must be able to understand classroom conditions well. This is evidenced by the research of Yulita Pujilestari (2020), explaining that the learning process of students in the classroom still needs enthusiasm for learning in order to increase attention, by using visual media, displaying a concrete picture of a material, can also concentrate students' motivation in learning and students easily understand the subject matter, and can stimulate students' activeness. Visual media can provide a real picture of a material, because it not only displays text, but also has pictures, movements, animations that are interesting to students so that visual media can improve learning. Visual media is one of the supports that has an important role in achieving an optimal teaching and learning process because it is a teaching tool to help a teacher convey important messages or information substantively and more quickly and easily to convey to students. Through media that has been designed in such a way, students can pay attention to understand the learning material to the maximum, the creativity of teachers in creating learning media is needed so that they can actively and enthusiastically participate in learning. Visual media is one type of media that can be used in learning. The use of visual media in learning is necessary on the assumption that children with all their characteristics, have intelligence, creativity that varies so that they can be developed as superior children. The use of visual media is expected to be able to enlighten children about a concept being studied. Visual media in the world of learning is defined as learning materials that can be presented in an auditive form that can stimulate children's thoughts, feelings, attention, and abilities so that the teaching and learning process occurs (Riyana, 2012: 133).

Utilizing various sources to be used as a medium in learning activities is one of the efforts to overcome obstacles. The function of the media in the learning process as a stimulus presenter and increases harmony, especially in the reception of information, so that the media also functions as an intermediary and a medium of representation of the real object. In the world of education, the learning media used must be relevant to the condition of students (Susilo, A. A., & Sofiarini, A. 2020). The Importance of Visual Media in the world of education, visual media is a channel or bridge of learning messages conveyed by teachers to students. Through the learning tool, visual media can convey messages or information in a technical and creative manner which displays pictures, graphs, and clear layouts and locations, so that students can receive and use well, which will further arouse students' passion for learning. By using visual media, it can clarify and make the subject matter more effective and function students' sense of sight with the characteristics taught (Winarto, W., Syahid, A., & Saguni, F., 2020).

The benefits of using media, with the existence of learning media, teachers will help convey messages to students so that it will activate students in providing feedback, feedback, and encouraging students to do the right practices. The more interesting the learning media created, the more it will arouse the spirit of learning, and provide meaningful experiences to students with attractive media displays and evaluation activities (Maulani, S., et al., 2022). Basically, learning media that is in accordance with the character of students can also encourage children to be motivated to learn can also provide students with significant results, helping to develop imagination in learning activities. However, the fact shows that the learning outcomes and activities of students are still low due to the behavior of students entering and exiting during learning and the presence of students who do not follow the lessons causing them not to listen to or receive lessons from the teacher fully (Rosadi, F., & Karimah, N. A. N. 2022).

It is hoped that an educator will be equipped with various activities so that they can more actively participate in training and or seminars in capacity building as an educator, currently, such easy access in exploring various learning resources, for example, surfing the internet network about how to use learning media that is in accordance with the rules and the right factors in determining the media, for example, can pay attention to learning objectives that will be achievements, suitability of materials and media, and the situation of students (Febriana, R. 2021). Teachers are required to be creative in presenting learning tools, including visual learning media, in an effort to anticipate the enthusiasm of students in elementary schools. The flow of unstoppable technological developments has an impact on student behavior. Students are allowed to put aside lessons from school and be lazy in learning. The presence of visual media learning can stimulate or replace the daily activity tools of students in order to arouse their passion for learning (Febriana, R. 2021). In addition, the research of Febrian Afisrta (2016) found empirical evidence that showed that there was a significant comparison of the use of visual media in the experimental class with a very good average score, while in the control class that did not use the average media, the average score was sufficient. The learning process in the classroom using visual media, students' interest and attention to the material is more visible and enthusiastic compared to classes that do not use visual media. Furthermore, Halen Dwistia (2019) research related to the relationship between the use of visual media and social behavior shows that there is a change in behavior by actively involving students to demonstrate the results of observations submitted by teachers through the visual media used and providing opportunities for students to convey responses or arguments.

Based on the results of the research study, it is necessary to take steps to find out the interest, talent, and motivation for the subject matter. According to Nana Sudajana (2015: 8), stating that the display of visual symbols or images can clarify verbal symbols, allowing students to more easily understand the meaning of the message discussed in the lesson.

The results of observation records obtained are that at Elementary School Cluster 29 Campagaloe, Bissappu District, Bantaeng Regency, teachers who use visual media aids in learning are still very minimal, as evidenced by the media used is still very conventional, meaning the media used from the past until now. Lack of creativity in packaging teachers' learning in delivering subject matter only uses the lecture method without any help in the form of media, focusing on textbook guidelines in accordance with the latest print. On the same basis, it is also the reason for choosing visual media as a learning resource in schools in the cluster.

Similarly, the facts obtained when the researcher conducted an interview, according to the homeroom teacher of grade IV at SDI Campagaloe 1 in August 2023, revealed that by using video media, students were happier and more enthusiastic to take part in lessons, to find out the results of the teacher's science and science learning using two methods with tests and non-tests. The evaluation of summative tests of students was more dominant in obtaining an interval value of 75-77, while non-tests did not have a significant difference in interval values ranging from 77-78, meaning that teachers' teaching aids still need to be improved or by using other types of media. The weaknesses of existing visual media, the researcher concluded that (1) visual learning media does not provide clear instructions on the content, (2) the use of language is not simple/ambiguous, (3) the existing media does not pay attention to the contrast of coloring for certain objects, (4) the existing visual media only uses a sheet of manila paper to display the content of the material without considering the reach side of the observer (student), (5) The media used is more dominant in animated images.

In connection with Taseman's (2020) research on visual media, he explained, by using visual media, students are more active and enthusiastic in participating in the learning process. Package books, LKS, and whiteboards are used as sources in making learning media for educators. In the lower grades, students prefer to play with fun learning, while in high grades such as grade 5, it is not much different from the lower grades, by using simple visual media only focused on package books and the teacher's explanations that lead to theoretical acceptance. The IPAS teaching module focuses on describing cultural diversity and local wisdom in the region. However, the media in the Student Worksheet (LKPD) only displays various cultural diversity in Indonesia such as traditional settlements in Toraja, South Sulawesi, angklung music on the island of Java, and saman dance. There is no learning media that connects to mutual cooperation that is in accordance with the profile of Pancasila students. In the discussion of the topic of culture and local wisdom in the teaching module

of the science subject, the teacher is fully guided textually by the existing teaching material, does not develop new ideas to create learning as an example of the media in the teaching module being adopted into the LKPD without any creation or just to give up its position. The importance of mutual cooperation for students to form a strong character so that they can foster social attitudes, responsibilities and a sense of togetherness.

The problems that exist in the school, from the results of observations, have been found that many students still lack knowledge about local wisdom in the region, lack of media sources based on the new curriculum, teachers are still minimal with media development ideas, lack of knowledge about digitalization, and lack of media used as teaching aids in conveying information. To preserve the culture of local wisdom a'rera as early as possible can be instilled in students as a stick of estapek or the successor of local residents in showing identity or as a characteristic of the region, more than that, that as human beings who live in the midst of the community bear social responsibilities that need each other. A'rera can contribute to the learning outcomes of students which include 3 aspects, cognitive, affective, and psychomotor. With a high sense of cooperation, there is interaction in discussion groups to seek information, identify and analyze to answer the problems discussed. In connection with the research, Wulan Dwi (2021) explained that by working together, there was an increase in learning outcomes, in which there was interaction, so that there was participation in completing tasks in groups. The average improvement of the six indicators of students' communication skills was very good.

Students are given knowledge about caring for preserving regional culture, maintaining and encouraging the importance of instilling the character of social responsibility in creating a friendly environment. In various ways or exploring various sources including the use of learning media can contribute to instilling an attitude of social responsibility in students, a teacher uses visual media as a tool in conveying messages, transforming teaching materials to students to provide an understanding of the importance of instilling social attitudes to create a sense of mutual cooperation (togetherness) as a form of manifestation of preserving culture area. The principle of a'rera as a social responsibility in learning science and technology in order to provide a stimulus or reawaken the passion for togetherness through visual media learning. Combining students' daily lives with science lessons at school can contribute to the identity of a student in elementary school. The content of social studies lessons contains a sense of social responsibility, caring for others, sensitivity to the surrounding environment to create meaningful learning in life. Soekarno and Koentjaraningrat (2013: 11) said that Gotong royong is a joint work in an effort to meet needs and face problems together. This mutual cooperation is a positive activity that has existed for a long time. And it has many benefits for individuals and the environment. Including life in the school environment, there are not a few students who are engrossed in themselves due to indifference to the conditions in which they are located. Of course, this needs to be done as early as possible in implementing the value of unity or togetherness in completing something. Spoiled with his daily environment, his life activities are preoccupied with the handfulness of his cellphone for online games, as a result of which it causes mute communication between peers, not caring. The improvement of learning outcomes is influenced by several factors, including, with the use of media when carrying out the teaching and learning process to activate students' participation in the classroom, media as one of the sources of obtaining information provided by teachers so that they can form knowledge. Achievement at the maximum stage is not only the role of the teacher in the classroom as a facilitator or knowledge transfer. From the results of the initial observations made by the researcher, the factors of the problem include, a sense of prestige in getting along with others, being pampered with instant things so that they are lazy to help fellow students, the existence of egocentrism that feels more superior to other peers, the absence of continuous coaching both internally and externally (supervision and coaching of parents). There has been no research on the development of visual media to improve learning outcomes and responsibility, the concept that needs to be done as a solution offer from the research product is the development of visual learning media based on local wisdom. The media is sought to contribute to the improvement of learning outcomes and a sense of social responsibility that is effective and efficient. Some previous studies only conducted research with experimental research methodologies and ontologically only other subjects have not learned science and science. In addition, there is more dominance between motivation and learning outcomes, the use of visual media with the Project Based Learning model, the use of visual media, and the internalization of the value of mutual cooperation character.

As a novelty, namely developing visual media based on local wisdom a'rera in which there are simple images as representatives of real objects to support improving learning outcomes and social responsibility of students in elementary schools. That way, the visualization of objects or events is systematically arranged from realistic to abstract, learning is more effective if the object of the event becomes a teaching material that can be visualized to resemble the real situation. A teacher displays visual media with nuances to mutual cooperation. Students see and learn what the benefits of togetherness are in completing everything, both working together in doing group assignments, a sense of responsibility in preserving the environment according to the students' experience, and can form students' own character. One of the teachers' methods in solving the problem of the value of local wisdom a'rera to improve learning outcomes and social responsibility for students. Providing maximum IPAS learning, the visual media of IPAS lessons presents learning with the nuances of mutual cooperation by packaging it in such a way in order to achieve learning goals and foster a sense of concern for students. Thus, the researcher wants to continue his research to obtain more in-depth data as an answer to the problem of the value of local wisdom a'rera to improve learning outcomes and responsibility in the concept of learning science and technology with the development of further media. Therefore, the title, "Development of Visual Learning Media Based on Local Wisdom A'rera to Improve Learning Outcomes and Social Responsibility in Grade IV Ipas Learning in Elementary Schools" was formulated.

## **RESEARCH METHODS**

### **Research design**

There are many development models in research, each model has its own advantages. The reason for choosing the Plomp Model is because it is seen as more flexible and simple at each step of development activities and can be adjusted to the characteristics of the research. Some of the stages include, (1). In the preliminary investigation phase, at this initial stage, a needs analysis will be carried out including student analysis, curriculum analysis, material analysis and media analysis. (2). Design, the researcher will design a product for problem solving with the results of the work plan which will be realized in the next stage in the realization phase. (3). Realization/construction, production activities will be carried out for the development of visual learning media. (4). Test, evaluation, and revision, this phase will carry out systematic information collection, processing, and analysis activities to obtain results in accordance with the objectives. (5). Implementation, the last stage will be a trial of learning media products from the development results (Kemmbangan Plomp, 2013).

### **Research subject**

The research subjects for the validity test consisted of 2 media experts, 2 content experts and 2 practitioner experts with a total of 6 experts. As for the practicality test, the subjects are 11 teachers and 26 students in grade IV. Furthermore, for the effectiveness test of the subject, there were 60 students consisting of two classes.

### Data collection techniques and data collection instruments

To support research in collecting data, several steps are needed, there are two types of data collection techniques, namely test and non-test. The evaluation test data collection technique is given to measure the learning outcomes of students after using visual and non-test learning media in the form of documentation, observation, and questionnaires. In accordance with the established data collection techniques, this research instrument uses, namely: 1). Responsibility questionnaire sheet, 2). Observation sheet of student activities, 3). Test questions.

### Data analysis techniques

The analysis was carried out to find out the understanding of the success of the visual media developed, the results obtained were then considered for product improvement. The analysis of the results of the validity and practicality test in the research is carried out in several steps, including:

#### a. Give answer values on the following criteria:

The assessment was carried out to determine the level of validity and practicality of the visual media to be developed, based on the scores obtained through the table below:

No.	Criterion	Score
1.	Strongly agree	5
2.	Agree	4
3.	Simply Agree	3
4.	Disagree	2
5.	Disagree	1

#### Table 3.11 Assessment criteria

#### b. The percentage value is given, namely:

V alidity/practicality level =  $X = X 100\% \frac{\text{Skor yang diperoleh}}{\text{Skor tertinggi}}$ 

### Validity data analysis

Data from validation sheets were analyzed using quantitative analysis. The analysis was carried out using the Likert scale with: agree, disagree. Validity data was analyzed using the formula (Fatmawati, 2016) as follows:

V = (total score of all validators)/ (total maximum score) X 100%

### Information:

### V: Tilapia validity of learning media

The visual learning media developed is declared valid if the results of the questionnaire have a percentage value of  $\ge 60\%$ , if the valid criteria are met, then it can be implemented.

### Practicality data analysis

The data from the practicality sheet were analyzed using quantitative analysis. The analysis was carried out using the Likert scale by: agree, disagree, . The value of product practicality with the following formula:

#### P = R/SM X 100%

#### Information:

P = Practicality value.

R = The average number of scores for all items, calculated by calculating the number of scores given by respondents divided by many respondents.

SM = The maximum number of points for the entire item.

### Effectiveness data analysis

The purpose of effectiveness data analysis is an investigation to find out whether the learning objectives can be achieved by students. The analysis was carried out by looking at the way students solved the question items in accordance with the indicators that had been set. The results of the pretest were not analyzed quantitatively because the pre-test score was not compared with the post-test score. The analysis of the data of the students' pre-test results aims to provide information about the students' initial knowledge. The results of the work at the time of participating in the learning, and the results of the post-test to be analyzed so that the progress shown by the students from the beginning to the end of the learning can be seen.

 $S = R/N \ge 100\%$ 

### Information:

S: Students' grades.

R: The number of scores obtained by students.

N: Maximum score.

The percentage of testing the effectiveness of visual learning media products to determine the proficiency of students is as follows:

score = X = X 100% jumlah siswa yang tuntas jumlah seluruh siswa

### **Effectiveness test statistics**

### Normality

The normality test was carried out to find out whether the samples taken in the study were normally distributed or not. The normality test in the study used the Liliefors test. The liliefors test is a test that is often used to determine the normality of the data. The normality test of Liliefors is as follows:

- a. Organize data from smallest to largest
- b. Performing data checks
- c. Perform cumulative frequency compilation
- d. Calculate empirical proportions based on cumulative frequency
- e. Calculate the z-value to find out the theoritical proportion in the table
- f. Perform theoritical proportion calculations
- g. Compare the empirical proportion with the theoritical proportion, and then look for the largest difference at the observation point between the two.
- h. Draw conclusions with test criteria if D calculates < D (n,a), n is the number of samples and a=0.05, then H0 is accepted.

### Homogeneity

The homogeneity test was carried out to determine whether the sample used in this study was obtained with a homogeneous variant population or not. In the research conducted for homogeneity testing using the application of the SPSS (Statistical Product And Sevice Solution) program with a statistical test (test of variance) test. The test is used to find out if the independent variable has variance with the bound variable. In this study, the independent variable is visual learning media based on local wisdom a'rera and the bound variable is learning outcomes and social responsibility. Interpretation of the normality test is:

- a. If the probability value < 0.05, then the data comes from a population that has unequal or non-homogeneous variants.
- b. If the probability value > 0.05, then the data comes from a population that has the same or homogeneous variant.

### Anonymous

The Manova (Multivariate Analysis Of Variance) test is a multivariate analysis test used to jointly test the effect of one independent variable on two or more bound variables. The manova test is carried out to test variables simultaneously or together by using statistical tests to draw hypothetical conclusions using the following:

- a. Pillai's Trace Test
- b. Wilk's Lambda Test
- c. Hotelling's Trace Test
- d. Roy's Largest Root Test (Ghozali, 2019).
- e. Correlation test between bound variables

The correlation test between variables is intended to determine whether there is a significant relationship (Candiasa, 2004). This correlation test was carried out to see whether the same aspect was measured in the variables bound by learning outcomes and responsibilities. Correlation can be determined by calculating the correlation coefficient of the two variables. Collinearity can occur if the two variables are strongly correlated with each other. According to Hadi (2001) if rxy > 0.8, then the inter-independent variables are collinear. If rxy < 0.8, then the inter-relative independent variables are not collinear. If r counts > 0.8 between learning outcomes and responsibilities, then the two

bound variables are linear and vice versa if r counts < 0.8 then it is not collinear. To test collinearity, correlation can be tested using the help of SPSS.

### Hypothesis test

Drawing conclusions that end in acceptance or rejection of the hypothesis begins with testing. The end result is two options in the form of accepting or rejecting a hypothesis (H), another opposing statement, so that the Zero hypothesis (H0) and the alternative hypothesis (Ha) are obtained as previously explained. The hypothesis testing discussed here is only a test of hypotheses that contain the same meaning (not different), hereinafter called the zero hypothesis (H0) and hypotheses that contain different meanings (more than or less than), hereinafter called alternative hypotheses (Ha) (Subana, 2023).

## **RESEARCH RESULTS AND DISCUSSION**

### A'rera visual learning media validity test

Validation from various experts is needed to obtain data that the product is worthy of being tested by students in terms of content validity. In addition, validation of media experts needs to be carried out to ensure the validity of using media, as well as validation of practitioner experts to obtain data that shows that the products developed are worth testing in terms of practicality. The results of the field trial will be applied as material in revising the product that is being repaired. After obtaining the results of the analysis from the validators, the data was processed and summarized to evaluate the level of validity of visual learning media based on local wisdom a'rera. The results of the data that have been summarized can be presented in the following table.

No.	Validators	Score	Percentage	Average	Information
1.	Contents Member	52,7	81%		
2.	Media Members	87,5	92,1%	86,2%	Highly Valid
3.	Expert Practitioners	81,5	85,7%		

Table 4.7	Results	of validation	test recapitulation

From the results of the recapitulation, it was found that the average validity of the products from experts was 86.2%. This shows that the average assessment of experts, visual learning media based on local wisdom a'rera is categorized as valid which is very valid so that it can be used effectively in the learning process.

## Practicality test of A'rera visual learning media

Product testing is carried out to find out the process, system, concept is tested directly in the field or school environment. In the context of learning media, the trial was carried out using visual learning media based on local wisdom a'rera to user groups, for example, students or teachers. The purpose of the learning media trial is for the process of collecting data and information in accordance with the practicality and user response. In the learning that will be carried out, they will use visual learning media. During the trial, various records will be collected such as evaluation of media use, feedback, learning practices, and user satisfaction. The next step will be validation by content experts, media experts, and practitioner experts. After that, then the field trial will be carried out as a form of response for teachers and students. The revised learning media products will be tested for feasibility on a larger scale, namely grade IV students of SD Inpres Campagaloe 1 as a sample of 26 people and 11 teachers. Based on data collection, the results obtained from the calculation of the percentage of teacher responses are as follows.

## 97.2 = 72.9/75 X 100%

The conclusion of the calculation results is that the recapitulation of student responses was obtained of 97.2. Adjusted to the convection table, scale 5 is in the range of  $80\% < 97.2 \le 100$  can be categorized as very practical. After data analysis was carried out on the responses of teachers and students. Furthermore, it can be arranged in detail to see the validity of visual learning media based on local wisdom a'rera. The following are the results of the recapitulation presented in the form of a table.

No.	Respondents	Score	Percentage	Average	Information
1.	Teacher	98,6	98,6%	97,9%	Very
2.	Student	72,9	97,2%		Practical

Table 4.10 Results of calculation of teacher and student responses

From the results of the recapitulation, it was found that the average response of teachers and students was 97.9%. This shows that the average assessment of the responses of the two is in accordance with expectations, visual learning media based on local wisdom a'rera is categorized as very practical so that it can be used in the learning process.

### The effectiveness of A'rera visual learning media

Product trials are carried out to determine the level of effectiveness in the use of learning media that is being developed, product trials are an important stage in the development process because they go through the empirical testing stage. After product development, the testing or trial stage is carried out to obtain data and information about the effectiveness of a product or concept before dissemination to users. The effectiveness of visual learning media is determined by the results of student tests that are carried out at the end of learning so that it can show a response to students' ability to meet learning achievements. The instrument to test the effectiveness is in the form of 20 multiple-choice questions. Looking at the results, students tend to have met the minimum completeness test was carried out on 60 students consisting of two classes. The provision of tests is followed by the provision of media products that have been developed. This approach is designed to assess the effectiveness of the media that has been used in improving learning outcomes. The evaluation of the use of a'rera visual learning media was carried out at the end of the learning meeting. The evaluation was carried out to see the success of the development of a'rera visual learning media in improving learning outcomes in science and science subjects.

### Normality test

The data normality test was carried out in order to find out that the sample data came from a normally distributed population, for the normality test using the Lilliefors technique or called Kolmogorov-Smirnov assisted by the SPSS application. The criteria for the normality test, if the Lcal value < Ltabel with a significant level > 0.05, the data is said to be normally distributed. The results of the data analysis can be presented in the following table:

Tests of Normality						
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic					
	S	Df	Sig.	Statistics	Df	Sig.
	.228	26	.201	.902	26	.418
a. Lilliefo	ors Significance Cor	rection				

Table 4.11 Normality test results

The results of the normality test using the Lilliefors technique or called Kolmogorov-Smirnov with a significant level of 0.05 show a result of 0.418 > 0.05, it can be concluded that the data is normally distributed.

### Linearity test

The linearity test was carried out to find out whether the relationship between the two linear variables was significant or not. The test is guided by the provisions of the criteria for making decisions on the linearity test, namely if the value is greater than 0.05, then the conclusion can be drawn, namely that there is a linear relationship between the learning outcome variable and the responsibility-bound variable. The following linearity test results are presented in the form of a table:

Table 4.12 Linearity test results

ANOVA Table							
			Sum of Squares	Df	Mean Square	F	Sig.
Learning	Between	(Combined)	10.829	3	3.610	1.689	.198
Outcomes *	Groups	Linearity	10.734	1	10.734	5.022	.035

Responsibi	Deviation from Linearity	.095	2	.047	.022	.978
lities	Within Groups	47.018	22	2.137		
	Total	57.846	25			

Based on table 4.13 above, it is known that the significant value of Deviation from Linearity is 0.978, this shows that the coefficient greater than 0.05 is 0.978 > 0.05 so that in conclusion the relationship between learning outcomes and responsibility has a linear relationship.

### Homogeneity

The homogeneity test is used to find out whether the variant data is the same or not, the decision making of the homogeneity test calculation data is based on significant if the significance level > 0.05, then it can be said that the variant in the sample in the study is homogeneous. The calculation uses the levene statistical formula, the results of the test analysis can be presented in this table:

Tets Of Homogeneity of Variances				
Levena Statistic	df1	DF2	Sig.	
1.433	1	24	.388	

Table 4.13 Variant homogeneity test results

Based on the results of the homogeneity test, the significant value variant obtained was 0.388. The sample criteria are said to be homogeneous if the significance level > 0.05. The values in table 4.15 show a result of 0.388 > 0.05, so it can be concluded that the samples used in the study are homogeneous or the same.

### Manova test

The results of the manova test were taken from the analysis of the pillai's trace test, wilk's lambda test, hotelling's trace test, and roy's largest root test, this test was carried out with the help of the SPSS application program with the General Linear Model Multivariate. The results of the data analysis test can be presented in the form of the following table:

	Multivariate Tests <sup>a</sup>						
Effect	Effect		F	Hypothesis df	Error df	Sig.	
Intercept	Pillai's Trace	1.000	149107.304b	2.000	23.000	.000	
	Wilks' Lambda	.000	149107.304b	2.000	23.000	.000	
	Hotelling's Trace	12965.852	149107.304b	2.000	23.000	.000	
	Roy's Largest Root	12965.852	149107.304b	2.000	23.000	.000	
Х	Pillai's Trace	.025	.300b	2.000	23.000	.743	
	Wilks' Lambda	.975	.300b	2.000	23.000	.743	
	Hotelling's Trace	.026	.300b	2.000	23.000	.743	
	Roy's Largest Root	.026	.300b	2.000	23.000	.743	
a. Design: Intercept + x							
b. Exact sta	atistic						

#### Table 4.14 Manova test results

The table above shows the results of the analysis of the data of the Multivariate Media Significant Test which for pillai's trace, wilk's lambda, hotelling's trace, and roy's largest root has a value of 0.743 < 0.05. This shows that all are significant so that a conclusion can be drawn that there is an influence between the variables of learning media on learning outcomes and the responsibilities of grade IV students.

### Hypothesis test (simultaneous test F)

The simultaneous test F was carried out to determine whether the independent variables together had an influence on the dependent variables. This simultaneous test was carried out to compare Fcalung < Ftable. It can be seen that the guidelines used to accept or reject the hypothesis are: If Fcal < Ftabel then Ho is accepted and if Fcalung > Ftabel then Ho is rejected. The decision is made if the significance  $\leq 0.05$ , Ho is accepted and if the significance on the F test > 0.005 (0.000 < 0.05) so Ho is rejected.

ANOVAa							
Туре		Sum of Squares	Df	Mean Square	F	Sig.	
1	Regression	.165	2	.083	.300	.000b	
	Residual	6.335	23	.275			
	Total	6.500	25				
a. Dep	endent Variable: L	earning Media					
b. Pre	dictors: (Constant)	, Responsibility, Learr	ning Outcome	es			

Table 4.17	Simultaneous	Test Results F
rabic hir/	Jinuncous	I Cot Mesults I

Based on the table above, the value of the hypothesis test can be obtained simultaneously so that a decision can be obtained, then H0 is rejected and Ha is accepted. This can be seen in the significant value obtained, which is 0.000 while the significant value of the F test < 0.05. Therefore, it can be concluded that the independent variable, namely visual learning media, has a significant simultaneous influence on learning outcomes and responsibilities.

### DISCUSSION

### Design and build visual learning media based on A'rera local wisdom developed

The findings obtained in the field will then be discussed regarding the design and construction of visual learning media based on local wisdom of a'rera. Based on the initial observations that have been made at SD Cluster 29 Campagaloe, Bissappu District, Bantaeng Regency. There are several problems including the tendency of students to be bored in learning, less active in the learning process, and not enthusiastic. This happens because the learning media used is less varied, in the delivery of dominant subject matter storytelling and conventional media, for example in the submaterial of various local wisdom there is only one type of picture displayed. Researchers in search of information have conducted interviews with grade IV teachers of SD Cluster 29 Campagaloe to find out the implementation of learning. The teacher said that the existing learning media has not optimally supported learning, especially in science lessons. The design of a'rera visual learning media begins with the creation of temples, display and selection of images. Visual media design based on local wisdom a'rera has elements including covers, material lists, material introductions, images and subject matter, videos, sub-materials in which there are explanations and images of various cultures. Initially, the a'rera visual media that was made only included pictures along with explanations of the subject matter after getting input, there was a need for additional videos to help students move and the media became more interesting. A'rera Visual Learning Media has a design in the form of several slides and a series of images and videos with the help of a projector that can be used to zoom in and out so that it can reach from various sitting positions of students in the classroom. The development of visual learning media based on local wisdom a'rera is a media that is assisted by a projector when displayed in the learning process by taking a scientific approach, visual media combines images, animations, videos, and text. These simple products are combined with local wisdom of a'rera. Special features in visual learning media are packaged in such a way in the form of illustrations, images and videos that can attract students' attention.

The learning process of visual media based on local wisdom a'rera uses projector aids to make it easier for students to learn, with this tool the media displayed can be enlarged or reduced to overcome clarity in observing. It aims to provide a deep understanding of cultural diversity, local wisdom. In addition, character values can be strengthened such as independence, responsibility, creativity, confidence, criticality, love of reading, discipline and caring for the environment. In accordance with Eni's research, he explained that learning media is recognized as one of the most important factors in supporting the learning process, supporting factors include independent learning, increasing the attractiveness of learning, presenting real learning, and increasing understanding of the material. It can be interpreted that visual learning media based on local wisdom a'rera which is linked to the content of the lesson has a positive impact that can be used in the learning process. The development of visual media based on local wisdom in elementary schools has been adjusted to the subject matter in the latest curriculum mechanism.

Based on the explanation above, it can be concluded that visual learning media based on local wisdom a'rera which was specifically developed presents illustrations, images and videos on all explanations

of subject matter texts and is adjusted to the latest curriculum that will provide references for teachers and students to facilitate the learning process.

### Validity of visual media based on A'rera local wisdom

The validity of the development of visual learning media is assessed by experts. Evaluation criteria are carried out to ensure the level of validity of various aspects such as content, media, practitioners. First, in the content aspect, the level of validity with a percentage value of 81% so that it can be categorized as valid, the assessment indicators in this aspect show that the content of visual learning media based on local wisdom a'rera is relevant to the needs of students and is able to provide an overview of facts, theories, concepts, and is shown with completeness, accuracy and suitability of the material with the character of the students. The validity of the media has obtained input from experts, additional necessary to pay attention to the color contrast and the selection of images to be included. Furthermore, in the aspect of content, experts provide input on the use of sentences that are easy for students to understand or do not cause ambiguity. After making improvements in terms of media and content, it is in accordance with the needs, quality, and learning objectives that can attract students' attention and enthusiasm. The feasibility of displaying visual learning media based on local wisdom is based on the size of letters, color capture, image proportions, video capture, and illustrations that have been in accordance with the needs of grade IV students. Even so, there is still input from validators for the improvement of visual learning media products that will be tested on students. The assessment of the feasibility of visual learning media products is generally used to review the suitability of materials, indicators, and the adequacy of media images. The second aspect of media, the level of validity with a percentage value of 92.1% so that it can be categorized as valid, the selection of visual learning media according to the needs and level of abstraction of students in grade IV. The media presented can attract students' attention, active learning, and fun. Broadly speaking, the scope of media includes, the accuracy of targets, the efficiency and effectiveness of use, and the achievement of learning objectives. That way, learning media has met the standards of feasibility of use in delivering science and technology subject matter. The third aspect of practitioners, several components of practitioner indicators that have been tested have reached a level of validity with a percentage value of 85.7% so that they can be categorized as valid, with the existence of a feasibility test practitioners can provide quality substance and in accordance with user needs based on current developments. After the test, the practitioner aspect has met the eligibility standards. The scope of the practitioner test in general includes, ease of use, ease of delivering subject matter, and ease of making learning media.

### Practicality of visual learning media based on A'rera local wisdom

The practicality of the learning media was tested to 11 teachers and 26 students which was carried out at SD Cluster 29 Campagaloe, in general grade IV teachers and students stated that a'rera visual learning media was very interesting because it contained a combination of creative images and videos. Elevating the cultures in the region so that it is easy to recall the subject matter, meaningful and fun. In its use, teachers are not dominant in storytelling and the existing media can be displayed based on the sub-material learned at each meeting, providing an opportunity for students to appear to convey income based on the results of observations. The use of media can be seen by teachers very easily and is helped to convey the subject matter, can optimize the time in providing subject matter according to the duration of the subject time. In learning, students are so enthusiastic, active, and interested in seeing from the newness, for SD Inpres Campagaloe 1 students for the first time using a'rera visual media to introduce the cultures in their area of residence so that students know the culture or customs that exist to be responsible in maintaining the values of ancestral heritage. The practicality test was reviewed from the responses of teachers and students who stated that they were very good. Thus, it can be categorized that the development of visual learning media based on local wisdom can be well received by users. The results of a good practicality test can show that media development products are easy to understand, master and use by teachers and students so that they can have a positive impact on the learning environment. Judging from the novelty, for students at SDI Campagaloe 1 for the first time, they are given visual learning media based on local wisdom that can direct students to be actively involved in maintaining and being responsible for the cultural heritage of their ancestors as an entity. A'rera's visual media stimulates students to instill and care about local cultural culture and find solutions to the problems they face. The causes of practical visual learning media are 1) have a good attraction because they are equipped with illustrations, images and videos

that suit the needs of students. 2) Media that is made complex but easy to understand, contains pictures and learning videos on each sub-subject. 3) The aspect of time efficiency to explain the material is more efficient because the material listed is given relevant examples so that students can remember the subject matter.

### The effectiveness of visual learning media based on A'rera local wisdom

Measuring the effectiveness test was carried out to students at SD Cluster 29 Campagaloe with the final results of the posttest, tending that students had obtained scores above the completeness standard in the science and science subject with a minimum standard of 75. The Lilliefors technique or called Kolmogorov-Smirnov with a significant level of 0.05 shows a result of 0.418 that the distribution of data is normally distributed. Development research on the improvement of learning outcomes measured through posttests is only in the form of knowledge. After studying the material using visual learning media, significant learning results were seen. This shows that the use of visual learning media makes a positive contribution in the field of education so that there is an increase in student learning outcomes, by utilizing a'rera visual media can overcome diverse student learning styles, learning methods pay attention to the active role of students. The research is in line with Purwaningsih (2022) the effectiveness of learning media was carried out after knowing the posttest score of the experimental class with the results of the calculation of the Sig (2-tailed) value of 0.001 which stated that it was less than 0.05, then H1 was accepted and H0 was rejected. The effectiveness of the use of visual learning media based on local wisdom a'rera is shown that students' learning activities have increased, which can be proven by the completeness of learning outcomes and learning goals achieved. The effectiveness of visual learning media is determined by the results of student tests that are carried out at the end of learning so that it can show students' ability to meet learning achievements. The instrument to test the effectiveness is in the form of 20 multiple-choice questions. Students who have met the minimum completeness standard with a score of 75 are considered complete, learning is considered successful if they together meet at least 75%. The criteria for the effectiveness of the development of visual learning media based on local wisdom in this study will be shown based on (1) a hypothesis test that shows that there is a difference in student learning outcomes in the treatment of using media and those who do not use learning media and (2) the classical completeness of student learning outcomes in the experimental class is fulfilled by more than 75%. The results of the hypothesis test using the f-test that have been carried out show a significant value of less than 0.05 (0.00 < 0.05). The results showed that Ho was rejected. Visual learning media is very effectively used in learning programs, especially in science and science subjects. This is evidenced by the results of student responses after participating in the learning process using a'rera visual learning media. Thus, learning media using visual media in IPAS learning is very effective because it can make students active during the learning process and can make it easier for students to understand the learning material delivered with the help of a projector.

## COVER

## CONCLUSION

Based on the results of the research on the development of visual learning media based on local wisdom a'rera, it can be concluded as follows: 1). The design and development of visual learning media based on local wisdom a'rera is made based on the needs and mechanisms of the latest curriculum. The media created is combined with images, text, animations and videos to attract learning interest and enthusiasm for learning for fourth grade elementary school students which has a positive impact on learning outcomes and responsibility. The concept of developing visual learning media products based on local wisdom is compiled based on the potential and carrying capacity as found in the initial observations. Visual learning media based on local wisdom a'rera combines several media components including, images, text, video, and animation in one technology that helps with projectors. Media elements and other supporting materials are collected so that they can be combined into a single unit in the form of visual media by displaying various interesting features with a total of 22 slides. The visual learning media in phase B material chapter 5 analyzes the appearance of nature and its use as well as local wisdom in Indonesia contains sub-material, mountains, highlands, lowlands, valleys, hills, regional local wisdom, and a variety of local wisdom.

2). The validity of the development of visual learning media based on local wisdom is assessed based on tests of content experts, media, and practitioners. The content aspect, the validity level with a

percentage value of 81% so that it can be categorized as valid, the media aspect, the validity level with a percentage value of 92.1% so that it can be categorized as valid, and the practitioner aspect reaches the validity level with a percentage value of 85.7% so that it can be categorized as valid. Thus, the validity of the learning media is very good. 3). The practicality of visual learning media based on local wisdom developed was assessed based on the results of teacher and student response questionnaires. The results of use show that the development product is considered very good, can be used, easy to understand, and provides benefits to users. From the results of the recapitulation, it was found that the average response of teachers and students was 97.9%. This shows that the assessment of visual learning media based on local wisdom a'rera is categorized as very practical so that it can be used in the learning process. 4). The effectiveness of the development of visual learning media based on local wisdom based on the hypothesis test shows that there is a difference in student learning outcomes in the treatment of using media and those who do not use learning media and the classical completeness of student learning outcomes in the experimental class is fulfilled by more than 75%. The results of the hypothesis test using the f-test that have been carried out show a significant value of less than 0.05 (0.00 < 0.05). The results showed that Ho was rejected. Based on the results of the effectiveness test, it can be stated that the development of visual learning media has been tested for its effectiveness so that it can be used in the learning process of IPAS.

## SUGGESTION

This research can be implicated by producing a product for the development of visual learning media based on local wisdom that has a positive impact on the learning outcomes and responsibilities of grade IV students. This is because the use of visual learning media contributes to the spirit of learning, activeness, and motivation. The suggestions given by the researcher are as follows: 1). For the education office, it is recommended to provide guidance to teachers so that they continue to work in the field of education, especially elementary schools regarding the development of visual learning media based on the wisdom of loal a'rera. 2). For teachers, it is recommended to develop visual learning media based on local wisdom a'rera to answer every development of the times to meet the needs of students and can help in conveying subject matter easily. 3). For students, it is recommended that visual learning media based on local wisdom be a reference to optimize learning for improvement, learning outcomes and responsibility. 4). For researchers, it is recommended to develop further visual learning media and the development of visual learning media based on local wisdom can be used as a reference in problems that contain existing local wisdom.

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