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The Effect of Steam Approach to Economics Media Based on Bima Local Wisdom in Elementary Schools

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Abstract

The purpose of this article is to contribute new learning concepts about critical thinking in social sciences, especially economics, as well as the belief that social character is not developed in Indonesian schools. We investigated how primary school teachers self-reported applying what they had learned about economics to their daily social views. With the aid of educational media, this experimental study aimed to ascertain the extent to which the STEAM method influences the meaning of studying economics from early in life. According to the findings, very few pupils comprehend how economics affects both the environment and them in day-to-day living. Not only did we discover that the STEAM technique had a significant effect on pupils' thinking processes. However, they also discover the impact of their characters. There are significant differences in the level of understanding of learning, one of which is influenced by local wisdom. The implications of these findings for sharpening primary school pupils' comprehension of social science courses are explored. We suggest that social science learning be implemented using many of the latest approaches. Focusing on improving character based on local culture is not enough to use the traditional approach that has been implemented so far.

Keywords: *STEAM, Economic Media, Problem Solving, the Value philosophy of Bima, Local Wisdom.*

Introduction

The trend towards STEAM (Science, Technology, Engineering, Arts, and Mathematics) in the world of education is increasing because it is an actualization of expectations in the world of work in the economic field, so it needs to be supported by curriculum development (Pilco, 2021). In line with that, the addition of art can improve students' abilities in many aspects. Research result Castro-Santos et al., (2023) stated that many universities have actively collaborated with high schools to develop STEAM with the aim of having graduates with appropriate competencies. The STEAM approach directs the actualization of comprehensive learning and creativity in scientific disciplines (Zou, 2021). This is done so that students are able to compete in the world of work in the future (Nagajek, 2023; Sanabria, 2023). Problem-solving skill of serious concern, this refers to opinion (Sanabria et al., 2023; Zou., 2021). Especially in elementary school (Chu et al., 2015; Peltier & Vannest, 2017; Pilco, 2021). The facts in the field are that elementary school students also need problem-solving skills in the economic sector, especially social skills-solving competencies; this is in line with research results (Nguyen et al., 2021). Therefore, it is a suggestion for the world of education and teaching to develop the field of economics in the study of solving social problems using STEAM (Ishibashi et al., 2022; Sanabria et al., 2023; Zou, 2021). This is consistent with the goal of raising the bar for education in Indonesia.

Learning in elementary schools today supports the development of human thinking with collaborative applications, the integration of other subjects, and the adaptation of innovative media (Hwang et al., 2019). Learning in elementary school greatly influences students' character based on learning experiences and motivation (Trajkovik et al., 2018). A holistic approach to elementary school students supports lifelong learning activities and mature personal development (Chan & Yeung 2019; Urhahne, 2020). Ideally, the STEAM approach will help teachers achieve maximum learning goals. Economics learning can be integrated into various other subjects, such as social sciences, history, and others. Without realizing it, economic literacy will increase a person's competence in making personal or collective decisions regarding various economic choices and problems faced throughout their life (Rizkiwati et al., 2022). Economic

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education, which is considered naive, can be considered a process of scientific discipline from an early age for students. With the nature of naive conceptions in economics, students can develop a sharper way of critical thinking. It is important for children to understand economics so that they are not trapped by superficial knowledge that economics is always related to money, because if you study it more deeply, economics is not just about money (Suratno et al., 2021). It is expected of us as educators and future educators to be able to use critical inquiry techniques to support the teaching and learning process (Ginsberg, 2023).

Innovative learning media can provide an active, fun learning atmosphere, improve learning outcomes, and increase motivation and interest in learning (Bulkani et al., 2022; Silverman et al., 2019; Syawaluddin et al., 2020; Winarni et al., 2020). Research result Manurung & Panggabean (2020); Wangid et al., (2018) stated that teaching using media tends to be better, especially fairy tales for elementary school students. So economic material can be in the form of literature with reading strategies; apart from that, teachers feel that teaching materials that suit their needs, namely in the form of books equipped with pictures and full of color, will be interesting (Sunarti et al., 2023; Sung et al., 2019; Widiaty et al., 2021). Local wisdom material linked to learning is a very good combination to apply (Kurniawan & Kuswanto, 2021; Nikmawati et al., 2018). The importance of students' understanding in supporting sustainable development by re-instilling cultural character as the identity of Indonesian citizens (Suratno et al., 2021; Bulkani et al., 2022; Putry et al., 2018; Sofyan et al., 2019; Uge et al., 2019). The Bima region has many philosophies that are almost lost, one of which is the philosophy of *maja labo dahu* (shame and fear), the requirement for good meaning in everyday life for harmony in social life (Furkan et al., 2023). Economic literacy is highly correlated with the surrounding environment (Suratno et al., 2021).

Research result Alfulaila et al., (2019) states that multicultural-based learning is an absolute necessity; this is in line with the independent curriculum. Implementation of local wisdom materials can support effective learning (Syarifuddin et al., 2023) The Mbojo tribe, who make up the predominant ethnic group on the island of Sumbawa, are the original inhabitants of the Bima people. Many of the Bima regional philosophies need to be preserved, considering that the current generation does not know and understand their meaning and implications (Lestari & Astuti, 2023). The younger generation's lack of understanding of culture is increasingly worrying, marked by a decline in feelings of love and nationalism (Ikhsan & Dimyati, 2022). Overcoming this is very important to improve socio-cultural education for the younger generation so that they continue to know and use local cultural values, Pancasila, and Indonesian national identity (Agussalim et al., 2021; Ruyadi & Dahliyana, 2022). Critical thinking abilities are a necessary life skill in the twenty-first century, and pupils who are highly motivated to learn are more likely to attain high levels of critical thinking. In this case, it is also related to a person's logical and reflective decision-making when experiencing a problem. Someone who has a strong character and good self-management is very careful in controlling and managing emotions, and they are able to respond to what action to take after filtering some information (Paul & Elder, 2012).

Furthermore, the theories of caring economics and sustainable economics provide guidance on good character, which is related to social skills, high human spirit skills, and high social attitudes and is followed by simplicity. So teaching needs to be improved (Suchaina et al., 2023; Unlu, 2018; Wahjoedi et al., 2020). This can protect oneself from despicable behavior as stated by Logan in Hariyanto et al., (2022). Social skills are very necessary to build good character, not dominate conversations, and have ethics when discussing (Hopkins et al., 2011).

Initial observations were carried out at state elementary schools in the city of Bima for one month. Remarks center on three areas: reading comprehension, critical thinking, and learning support media. In terms of social problem-solving ability, it shows that: 1). students' financial understanding ability is relatively low at 29.9%; 2). students' ability to understand finances is classified as low at 29.9%; 3) students' ability to protect the environment is classified as low at 18.2%; and 4). The ability for social interaction between humans is relatively low, at 15.8%. This has an impact on characters that appear daily, such as irrational spending, a lack of respect for the environment, and frequent fights between peers. The percentages of these four social problems can represent all economic education studies that must be improved. The data indicates that, on

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average, pupils' problem-solving skills fall into the low group, with a proportion of 27.5%. It can be concluded that, overall, students show low performance in social problem-solving abilities.

Next, the second stage of observation was carried out, namely the media used. The research results show that teaching only takes place using the lecture method; no media has been used so far. As for the learning steps being the same every year, the impression that can be drawn is that the teaching is too monotonous. Teachers only focus on the aim of delivering material according to government textbooks; there is never any innovation in varied learning; they create a dull environment and don't employ any fresh or alternative teaching strategies. The problem also reaches students, who always solve their own problems independently of the problems and facts they are solving.

Third, observation results showing that teachers only use textbooks provided by the government as teaching references may reflect a lack of variety and innovation in learning media. The use of books is very rarely combined with other media or other contextually based supporting models, because of which learning that takes place both in class and in the classroom is only carried out conventionally and is not meaningful. Such that it encourages initiative in addressing issues in economic education, particularly in the social domain.

This observation can at least be a reason for researchers to wonder why students in elementary schools the ability does not have to solve problems systematically. Students only complete the questions given by the teacher according to the teaching material, for example, questions in the LKS book. It is rare for teachers to teach material by linking the surrounding environment, especially financial problems, human problems, and human problems with the environment. A social science learning approach that involves events or problems in the surrounding environment can indeed increase students' meaning and involvement in learning. This approach is known as context-based learning or contextual learning. By integrating economic learning with events or problems in the surrounding environment, teachers can provide a deeper, more purposeful learning environment for their pupils.

Turning away from the issue at hand, it is a positive step to address elementary school students' incapacity to solve social problems in the economic sphere by creating educational materials that encourage them to connect with nature, identify issues, formulate solutions, and work through them. The right media for contextual learning for elementary school students must be practical and interesting, so the teaching material offered is economic story media using the STEAM approach and local wisdom. The researcher's opinion is that the novelty of developing STEAM learning media was deliberately designed (Chou et al., 2023; Rukayah et al., 2022; Siregar et al.,2023; Sung et al. 2019).

The utilization of STEAM (Science, Technology, Engineering, Art, and Mathematics) in the creation of educational materials has immense promise for enhancing students' capacity to tackle social issues and augmenting their comprehension of economic concepts. Using a STEAM approach can be the right solution because it helps students recognize and understand the surrounding cultural context, which can increase the relevance of learning. Students are invited to formulate, discover, plan, and solve problems through the STEAM approach. In line with this, students not only learn theory but are also actively involved in the problem-solving process. The involvement of diverse disciplines such as art, technology, and mathematics can open the door to innovation in problem solving. Recognition of contextual values and the STEAM approach in economic learning not only helps students develop academic skills but also forms a creative, reflective, and contextual mindset in facing social and economic challenges. The hope is to be able to become a character for superior generations in the future (Batt et al., 2020; Chou et al., 2023; Ishibashi, 2022; Minces et al., 2023; Nguyen et al., 2021; Pilco., 2021; Sanabria et al., 2023; Siregar et al., 2023; Suster et al., 2020; Zou, 2021).

Through this article, we want to contribute new knowledge about the application of the STEAM approach as a new approach in today's world. This learning can be applied to improve critical thinking skills and have a positive impact on students' social character, by considering local culture in social studies material in Indonesian elementary schools. Based on a quantitative survey of Indonesian students in primary schools (N=56), we investigated what teachers and students reported regarding understanding of economic concepts as well as concepts of local Bima culture. We also investigate the impact of understanding

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economic concepts on students' character from various parental background factors. Furthermore, the topics discussed are related to perspectives of understanding and research in the field. The article concludes with an outlook in which we discuss the implications of the findings for social studies teaching in elementary schools.

Based on previous research facts and facts in the field, we explore the following hypotheses:

Hypothesis 1: Acceptance of a teaching concept will increase the likelihood of it being applied to learning activities.

Hypothesis 2: there is a negative influence between learning processes that do not consider local culture.

Hypothesis 3: we hope to find various influences on learning outcomes between the control class and the experimental class.

Research Context

Research on Economics for Elementary School Students

Every country has an interest in developing economic education because this field is closely related to the welfare of society (Amirov, 2020). In the development of the theory, it states that each country's curriculum must consider the realm of economic learning interests so that it is not seen as naïve (Davies, 2019). Experimental techniques have produced deep insights into the economy in recent decades; they have been tested on children and have become one of the fields that contributes to and explores various advances (List et al., 2023). The importance of instilling reading and economic literacy simultaneously for elementary school students can make students focus more on social science concepts (Rodgers, Y., Hawthorne, S., & Wheeler, 2007). The trend currently occurring in Indonesia, known as "industrial revolution 4.0," has brought about a complete technological transformation in various aspects of people's lives. Therefore, educators must produce students who have knowledge of appropriate technology and have soft skills in this field (Fandyansari & Sefaverdiana, 2020). This hope is not yet significant for the PISA 2023 results, namely that Indonesia received an increase in ranking, but the score decreased or was better than the previous year's score. A decrease in reading literacy scores has a big impact on the quality of education, so there is a need for better distribution of education (Muslimah & Pujiastuti, 2021). In addition, parental support is very important for students to understand economics from an early age and increase self-efficacy (Rastiti et al., 2021; Rolnick, AJ, & Grunewald, 2007). However, the role of an economics teacher cannot be replaced (Momota & Ogawa, 2018). In current economic theory, caring economics sees wealth as a more basic element that supports the long-term welfare of fellow humans, so this needs to be instilled from an early age (Suchaina et al., 2023). In Indonesia, the concept of caring economics is very appropriate to the context of Pancasila and the 1945 Constitution, which will influence student character.

Research On Economic Concepts and Character Impacts

Currently, character education is being intensively improved by the government through the curriculum, with one of the breakthroughs being the implementation of the Pancasila student profile project to support the character dimensions of Pancasila. Research (Amri et al., 2020) states that economics learning can change the development of students' character education. The teachers agreed and acknowledged the program's reforms, improvements, and adjustments to the education system (Sihombing et al., 2021). In terms of developing character, elementary schools need to provide students with economic literacy books that are visually attractive, easy to understand, and full of cartoons. This will help students internalize the concept of economic literacy from an early age and develop the behavioral patterns needed to lead a prosperous life in the future (Utami, 2014). The concept of economic learning is very close to the educational values put forward by Ki Hadjar Dewantara in supporting character education based on the concepts of green economy, caring economy, and circular economy (Ferary, 2021). Research findings Kuzma et al., (2022) has provided evidence about the effectiveness of teaching financial literacy to elementary school children, which has an impact on heart pedagogy as a preparation for facing life.

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Therefore, a superior curriculum that supports students' economic character in line with national identity must be developed by educational institutions (Agussalim et al., 2021; Ruyadi & Dahliyana, 2022). This can support sustainable development (SDGs) (Purnomo et al., 2023). As for the character developed through the application of problem-based learning and collaborative learning models, student character can be cultivated in the following areas: tolerance, teamwork, honesty, good behavior, critical thinking, logical thinking, and creative thinking (Astra, 2018). Likewise with critical thinking skills (Haryanto et al., 2022). In this case, the sustainable growth of national character development in Indonesia depends on the revitalization of regional traditional culture (Agus et al., 2021). So it is very necessary to combine the local wisdom of each region and regenerate cultural values (Ikhsan & Dimyati, 2022). This is very necessary because there are many behavioral disparities that occur as a result of the young generation's lack of knowledge of national character values and local culture (Hilmi, 2015; Irayanti et al., 2022).

Research on the Influence of The STEAM Approach Using Bima Culture-Based Economic Learning Media

The study of STEAM (Science, Technology, Engineering, Arts, and Mathematics) education is currently becoming a new trend in learning approaches. This concept can not only be used in the field of science but can also be applied to other fields of science (Zou, 2021). In the Systematic Literature Review research study conducted by Salas-Pilco (2021) stated that research on STEAM in Asia-Pacific grew from 2016 to 2020. Several research studies from preschools, elementary schools, and middle schools were found during the review. Regarding transdisciplinary educational approaches, the characteristics and difficulties of contemporary STEAM education are examined. STEAM is very suitable as an approach for elementary school students (Suryanti et al., 2024). Based on the percentage of graduates with degrees in economics and natural sciences who were able to follow engineering and technology programs offered in the field of study, especially natural sciences and mathematics, and who are only now starting to integrate this point of view into real formation, this is a response to an assessment of course offerings and curricula in light of social and economic issues in this new historical context (Sanabria-Rangel et al., 2023). The integration of cultural values is a need for future generations, especially the Bima culture. It is important to develop STEAM within the scope of formal education because teachers do not yet fully understand it (Rukayah et al., 2022). The addition of art in STEM has been proven to increase student creativity (Aguilera & Ortiz-Revilla, 2021). Thus, the addition of cultural elements is allowed to generalize national cultural values. In their research, Sudarsono et al. (2022) have suggested that the STEM approach can be carried out by applying Bima culture, so it needs to be developed further through the STEAM concept. There are many Bima cultural values that can be developed in economic learning materials using the STEAM approach. Lestari & Astuti (2023) states the meaning of this *Nggusu Waru* motif: *Maja Labo Dahu,* which means shame and fear; *Bae Ade,* which means having a sensitive soul; *Maja Labo Dahu,* which means dare to be angry; and *Lembo Ade,* which means patience. *Taho Hidi* means living a balanced life; *Wara Di Woha Dou* means being able to exist in society; and *Nggahi Rawi Pahu* symbolizes a place where words and deeds are in harmony. *Ntau Ro Wara* Apart from being a philosophical guide to life, the *Nggusu Waru* motif has a deep philosophical meaning for the Bima people. Various architectural styles can be found in important and famous buildings in the city today. Apart from that, Bima really needs broad and early public understanding of protecting the environment because of forest destruction, which needs to be addressed as a green economic concept (Furkan et al., 2023).

Research On Increasing Understanding of Thinking and Learning Economic Concepts

Concepts and methods related to sustainability and greening that are sensitive to social science are essential because successful models and best practices are difficult to adapt to new situations (Affolderbach, 2020). This concept is not easy, so it requires students to understand it more critically to provide solutions to problems in the surrounding environment. Using innovative learning models can improve students' thinking abilities (Hsu et al., 2022). Critical thinking skills can be developed through STEAM education, which is one of the main themes of today's children's curriculum. This will help students become better thinkers and assessors (Liu & Wu, 2022). The level of transfer and critical thinking skills of the students involved can increase when the STEAM curriculum is able to become transdisciplinary to achieve fundamental understanding with other curriculum areas (Wilson et al., 2021). Students who have critical thinking skills can apply what they learn in class to difficulties or challenges that arise at home or in society,

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thereby helping them survive in everyday life (Rahmawati et al., 2020). Integrating STEAM with project-based learning strategies in the subject is one way of implementing it (Rahmawati et al., 2021). According to Putri et al., (2023), stated that compared to students in Malaysia, Singapore, and other Malay countries, Indonesian students have relatively low critical and creative thinking abilities. Therefore, collaborative application of economic content through the Science, Technology, Engineering, Art, and Mathematics (STEAM) approach, can improve students' critical and creative thinking abilities. The independent curriculum learning concept is in line with the STEAM approach, which aims to improve critical thinking skills in the context of the Society 5.0 Era and help the world achieve the Sustainable Development Goals (SDG) by 2030 (Indahwati et al., 2023). In this case, it requires the habit of learning to work with a team (Fernández & Checa-Romero, 2023). Research result Sukro et al., (2021) states that to increase students' awareness of the environment in everyday life, learning projects can aim to integrate ecology-focused STEAM into chemistry education with a focus on environmentally caring attitudes. This concept is also related to the concept of good economic learning in the future.

Method

The procedures will be described in this step, along with a discussion of types, test subjects, data gathering methods, tools, and data analysis. This research uses an experimental method with a randomized control group pretest-posttest design, which is a quantitative approach. This design involved two groups, namely the experimental group who received the STEAM (Science, Technology, Engineering, Art, and Mathematics) learning approach in economic media and the control group who received conventional learning. This research was designed to test the effectiveness of STEAM-based learning (X1) compared to conventional learning (X2) in increasing students' understanding of problem solving. Experimental designs help control for outside variables that might influence research results, thereby making stronger conclusions about the impact of treatment on the dependent variable using N-gain data. Examining variations in students' problem-solving abilities through the use of locally wise instructional resources is the goal of this study. Thus, the purpose of this research is exploratory, as it evaluates the effectiveness of different instructional resources.

Table 1. Measurement of Economic ProblemSolving Ability

Class	Pretest	Treatment	Posttest
E	01	X1	02
K	03	X2	04

Information:

E: Experimental group sample taken randomly

K: Control group samples taken randomly

01: Experimental group data is given a pre-test

02: Experimental group data is given a post-test

03: Control group data is given a pre-test

04: Control group data is given post-test

This research involves developing and testing an essay test instrument to measure economic problem-solving abilities. Meanwhile, data analysis involves testing item difficulty, discrimination, validity testing, and reliability testing. In addition, a homogeneity test that uses the Fisher method and deep testing procedures is included to assess the variance between the experimental and control groups. (Santoso, 2008). The

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procedure for statistical testing includes a homogeneity test using the pooled variance t-test at a significance threshold of 5% and a test for normal distribution (Anshori & Iswati, 2019).

Results Presentation

Findings

The research results obtained from the test instruments were related to students' critical thinking abilities. The display of the range of critical thinking abilities on one reading topic is presented in Table 2 as follows:

Table 2. Economic Problemsolving Abilities of The Experimental Group and Control Group for Each Test

Group Type	Experiment					Controls				
	SMI	X_{maks}	X_{min}	$\bar{X}$	S	SMI	X_{maks}	X_{min}	$\bar{X}$	S
Post test	30	29	19	23.80 (79.33%)	2.89	30	24	6	17.72 (59.07%)	3.66
Pre-test	30	20	6	13.04 (43.47%)	4.44	30	23	6	13.48 (44.93%)	5.13

Table 2 shows that from the pre-test to the post-test, both the experimental and control groups' scores increased. The highest score in the experimental pre-test group was 20, the ideal score (mean) was 13.04, or 43.47%, the lowest score was 6, and the standard deviation was 4.44. In the post-test, the optimum score increase (mean) was 23.80, or 79.33%, with a standard deviation of 2.89. The highest score increase was 29, and the lowest score increase was 15. With a mean score of 13.48, or 44.93%, the pre-test control class had the maximum score of 23, the lowest score of 6, and a standard deviation of 5.13. Meanwhile, the highest post-test score increase was 24, the lowest score remained 6, the ideal score increase (mean) was 17.72, or 59.07%, and 3.66 was the standard deviation. The mean of the experimental group increased significantly from the pre-test to the post-test, going from 13.04 to 23.80, and the percentage also increased significantly, going from 43.47% to 79.33%). A lower standard deviation in the post-test indicates that students' scores have become more homogeneous. In the control group, there was an increase in the post-test, both in terms of mean (the mean rose from 13.48 to 17.72) and percentage (from 44.93% to 59.07%). A lower standard deviation on the post-test also indicates that students' scores have become more homogeneous. From the test data, it can be concluded that both groups showed improvement, but the increase in the experimental group tended to be greater, and the percentage reached a higher value. The increase in standard deviation in both groups indicates that the distribution of student scores became more homogeneous at the post-test. Visually, elementary school students' economic problem-solving abilities can also be demonstrated through the diagram below.

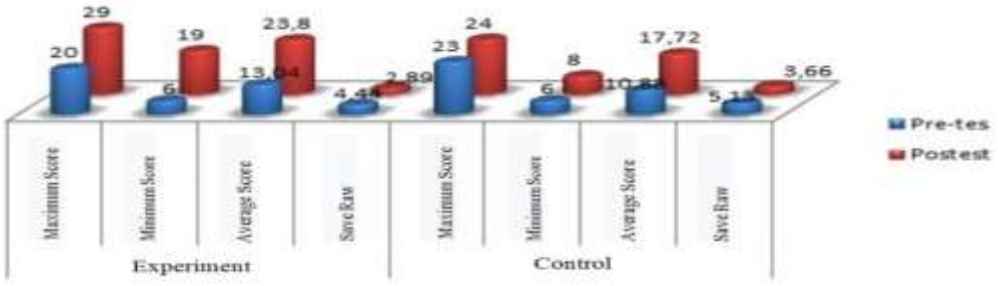

Figure 1. Economic Problem Solving Ability Profile Diagram Experimental and Control Groups

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The diagram above shows that there is a higher difference after treatment in the experimental group using media compared to normal learning.

Table 3. Economic ProblemSolving Ability for Each ProblemSolving Stage

Type of Test	Step Solutions to problems	Experiment			Controls		
		Score Max	Average	Categories	Score Max	Average	Categories
PreTest	Understanding the Problem	2	1.23	Enough	2	1.31	Enough
	Develop a plan	4	1.00	Low	4	1.03	Low
	Carry out the Plan	2	1.44	High	2	1.48	High
	Check again	4	0.73	Enough	4	0.73	Enough
Post Test	Understanding the Problem	2	2.00	High	2	1.76	High
	Develop a plan	4	2.39	Enough	4	1.47	Enough
	Carry out the Plan	2	1.95	High	2	1.72	High
	Check again	4	1.60	High	4	1.01	Enough

Based on Table 3, the results of this research examine students' problem-solving abilities at certain stages (planning, implementing, and rechecking) based on the two groups. Both the experimental and control groups' problem-solving skills during the planning stage of the pre-test were low. However, at the post-test, there was a significant improvement, and problem-solving abilities at the planning stage became quite good for both groups. In the pre-test and post-test, the ability to implement plans to achieve goals in both groups (experimental and control) was classified as high. In the pre-test, rechecking ability was considered sufficient for both groups. However, in the post-test, the experimental group showed significant improvement and was classified as high, while the control group remained moderate. The significant improvement in the planning and rechecking stages in the experimental group shows the effectiveness of learning, while the control group also experienced improvement, but at a lower level. This indicates that students' problem-solving skills are developing more favorably as a result of the teaching strategy used in the experimental group.

Table 4. Data From Homogeneous Test Results in Each Group

Aspect Abilities		Pre-test		Gains	
		Experiment	Controls	Experiment	Controls
to Solutions problems	N	25	25	25	25
	Variance (S2)	19,707	26,343	0.029	0.030
	$F_{count} = \frac{S^2_{besar}}{S^2_{kecil}}$	1,337		1,034	
	F_{table}=F0.05(24.24)	1.98		1.98	
	Conclusion	Homogeneous		Homogeneous	

Table 4 above indicates that a statistical analysis using the F test (ANOVA) has been performed for the observation data in the table that is explained; that is, all observation data's F test value (Fobs) is less than the F-table value (F0.05, 24.24); Fobs <; F0.05, 24.24. To ensure a typical distribution of the eightnote data, these are the details: 1) pre-test data for solving economic problems in the control group; 2) post-test data for solving economic problems in the control group; 3) N-gain data for solving economic problems in the experimental group; 4) economics N-gain data split the control group. Based on the description above, it

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can be concluded that all observation data is said to have a typical distribution. Because the data has certain patterns or characteristics, differences between groups are not statistically significant. All observation data is considered homogeneous so that it has uniform variance between groups, and comparisons between groups can be interpreted correctly. When the variance between groups is thought to be homogeneous, the pooled variance t-test is employed. Meanwhile, the F test is used to test the balance of initial abilities between groups (one-factor ANOVA test).

Initial Ability Balance Test Results

Based on the results of the ANOVA test, the initial ability to understand economics can be seen in table 5 below.

Table 5. Anova Table of Balance Test Results of Initial Ability in Economics Problem Solving

Sources of Variance	SS	*V*	M.S	F_{obs}	F0.05 (1, 48)	Decision	Conclusion
Treatment (Tr)	2,420	1	2,420	0.105	4.04	Refuse t H0	Balanced
Error	1105.20	48	23,025				
Total	51107.62	49					

Based on table 5 above, it is known that the F_{count} (F_{obs}) value is 0.012, while the F_{table} value (F0.05, 1.48) is 4.04, meaning that because the F_{count} (0.012) value is smaller than the F_{table} value (4.04), then H0 is rejected. This indicates that there is no difference in the two groups' initial average capacity to address economic problems. The conclusion from rejecting H0 is that a balance of initial problem-solving abilities was achieved in both groups before treatment was given.

Hypothesis Test Results

Table 6 below provides information on the research hypothesis testing findings.

Table 6. Recapitulation of Research Hypothesis Test Results

Hypothesis to	*N*	*V*	**Tcount (tobs)**	**Ttable (t0.05.48)**	Decision
I	25	42	8,151	2,013	Refuse H0

Based on table 6, it can be seen that the t-count value (tobs) is 8.150 while the t-table value (t0.05, 48) is 2.013. If it can be interpreted that the t-count value (8.150) is greater than the t-table value (2.013), then H0 is rejected. The conclusion that can be drawn is that the STEAM approach to Bima local wisdom-based economic media in elementary schools has a significant influence on economic problem-solving abilities. This significant effect was measured through statistical analysis using the t test.

The stages of implementing the learning were carried out by two groups whose ability levels were not much different; this can be seen from the test results and material analysis before carrying out the test. Statistically, the average value of the control group and experimental group materials is considered the same. The outcomes of data analysis for every test item, particularly with the t-test, demonstrate that students who study with the STEAM approach to economic media are more adept at addressing economic problems than students who study with traditional learning methods. The experimental group's and the control group's abilities to solve economic problems differ significantly, as demonstrated by the application of the t-test as a statistical technique. Based on these findings, it can be concluded that the economics learning approach using the STEAM media approach makes a positive contribution to increasing students' economic problem-solving abilities.

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Discussion

The data findings showed that students' skills in solving economic problems in the experimental class and the control class actually differed from one another. The STEAM approach to economic media based on local Bima cultural values can motivate students in the learning process at each student's initial ability level. Learning media that use environmental activities and are linked to cultural values will improve critical thinking skills (Kurniawan & Kuswanto, 2021). This is shown in the learning process and student activities, which are better in the experimental class compared to the control class. In line with the research results Ramdani et al. (2021); Iswinarti & Suminar (2019); The ability of pupils to solve problems is improved by integrating local wisdom. It was determined that a student's love of culture will positively impact their ability to study and solve economic difficulties in their immediate surroundings.

The research results showing the significant role of learning using the STEAM approach and Bima local wisdom-based economic media in improving students' economic problem-solving abilities are positive findings and have important implications in the learning context. Students in the experimental group were able to solve problems in the form of stories, and the questions given triggered students to optimize their abilities and skills. This is in line with the research results Siregar et al., (2023) that STEAM can improve students' reasoning abilities. Research result Chou; et al., (2023) stated that STEAM learning based on Bima's local wisdom provides contextual relevance for teachers and students so that learning material becomes more meaningful and related to their local reality. The STEAM approach can encourage student creativity and innovation in interdisciplinary education, especially in the field of economics, because it includes elements of science, technology, engineering, art, and mathematics that are needed in the future (Salas-Pilco, 2021; Sanabria-Rangel et al., 2023). Next is the point of view, which is defined as problem solving, which must come from presenting questions that encourage students to look for and use critical thinking skills to explore various strategies to be used, as well as improve the way each problematic question has been carried out. This can be developed to produce more than one answer and one solution. According to (List et al., 2023) There are ten tips for conducting experiments on children. This is realized because the economic incentive in the future is (possibly) children's active response in the market.

The results of the analysis showed a significant difference in problem-solving skills between the experimental class (which used Bima local wisdom-based economic media with a STEAM approach) and the control class in the post-test. The use of Bima local wisdom-based economic media shows positive benefits in the context of economic learning. This may include introducing local cultural values, using real-life examples, or presenting economic material in the context of students' daily lives. These results can be a strong basis for encouraging the use of the STEAM approach and local wisdom-based media in economic learning at the elementary school level. Furthermore, these findings can provide guidance for the development of more contextual and effective learning strategies for improving students' problem-solving skills.

Support from research results on theories that have been presented by several STEAM approach experts shows consistency between empirical findings and theoretical concepts in line with economic material (Zou, 2021). Statement Rukayah et al., (2022) emphasizes the importance of learning media with a STEAM (Science, Technology, Engineering, Art, and Mathematics) approach in presenting material in detail and clearly. The research results show that the students critical and creative thinking abilities can be enhanced by using a STEM (science, technology, engineering, and mathematics) approach in accordance with the findings Aguilera & Ortiz-Revilla, (2021); Bush et al., (2020) reflects the positive impact of using this approach in a learning context. It is very important to promote STEAM for use in elementary school students' learning (Li et al., 2022; Suryanti et al., 2024). Because the current learning direction expects students to explore the knowledge and behavior of the Sustainable Development Goals (SDGs) (Zhou et al., 2022).

Thus, it can be concluded that this research supports the results of previous studies and provides support for the use of the STEAM approach and media based on the local Bima philosophy in the context of

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economic learning. This can be a guide for more interesting, effective, and contextual learning approaches to developing students' skills and personalities.

Views And Implications for Teaching Social Studies (Economics) In Elementary Schools

Economics learning in Indonesia still receives little attention, as evidenced by the teaching material being combined with natural sciences to become a social studies subject (Septiana & Winangun, 2023). As a result, students do not understand in detail how economic literacy is needed for everyday life. Previous research shows that it is good to learn economics from an early age so that students can think critically when learning the profits from trading, opportunity costs, and the rules of demand (Momota & Ogawa, 2018; Rupp, 2014). Independent thinking for students will support other economic concepts, such as caring economics (Suchaina et al., 2023; Vladeck, 2019; Witjaksono, 2016). In our survey of social studies students, the results observed were three students who were able to understand economics learning according to the correct concepts. They have a character that is not wise in managing personal finances and also does not respect and protect the environment. This tendency can be interpreted as meaning that teaching so far has not been on target because it combines science and social studies subjects so that students do not understand them effectively. However, it should be noted that research in Indonesia and elsewhere internationally always highlights students' lack of knowledge in understanding economic concepts and the natural resources around them according to the culture of their respective countries (Hidayati et al., 2020; Machado dos Santos et al., 2022; Utami, 2014; Winarni et al., 2020). Apart from that, findings in Indonesia state that teachers only focus on delivering material and not on critical thinking skills using the latest approaches (Sudarsono et al., 2022). This is a reference for using a broader steam approach in other subjects, especially economics, which are students' daily needs. In learning social sciences, especially economic concepts, it requires students to be able to think critically and solve problems in accordance with the culture and values contained in national identity. This plays an important role in developing students' understanding of sustainable economic concepts and theories. In the initial stages of developing the idea for the article, we proposed that economic concepts could be implemented with elementary school students using the STEAM approach (Suryanti et al., 2024). In line with our opinion, the curriculum development carried out may be good, but it does not yet consider the broader needs of students. Another view can be seen in the large amount of natural damage caused by students' inability to think more broadly (Furkan et al., 2023). Indahwati et al., (2023) claims to improve critical thinking skills in the Era of Society 5.0 and meet the 2030 Sustainable Development Goals (SDG), including STEAM-based independent learning.

Only a few students who take part in economic learning activities understand the concept of economic theory, and most of them claim to "not know" about this learning. This may be based on teaching that has not focused on improving critical thinking because of teaching carried out traditionally. In line with previous research, we provide suggestions for teachers to use learning approaches that are appropriate to their time. However, remote areas are not the reason that teachers do not know the latest learning approaches. Suchaina et al. (2023) found in their findings that to achieve national economic prosperity, it is important to support the creation of a sustainable, caring economic paradigm. He recommended it based on the results of his study from 2016 to 2022. The idea to improve the country's development emerged, namely that teachers play an active role in using innovative approaches to learning.

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