

The Effectiveness of the Local Wisdom-Based Moral Reasoning Learning Model on Critical Thinking Skills and Mutual Cooperation Character

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Abstract

This study aims of determine the effectiveness for the Sasak local wisdom-based Moral Reasoning learning model to critical thinking skills and the character of mutual cooperation. The effectiveness test involved 70 fourth-grade elementary school students at Mataram City. Practicality analysis was conducted by observing teacher and student responses. Effectiveness analysis used multivariate analysis (MANOVA) and transformed to effect size (ES) to measure effectiveness to the Sasak local wisdombased Moral Reasoning learning model in improving critical thinking competencies and the character of mutual cooperation. The results show that the Sasak local wisdom-based Moral Reasoning learning model is highly effective in improved critical thinking skills and the character for mutual cooperation. The magnitude of the Effect Size (ES) on critical thinking skills is 0.943 (high effectiveness), the ES on the character of mutual cooperation is 0.932 (high effectiveness), and the ES simultaneously on both is 0.992 (high effectiveness). Based on these results, it is recommended to use a Moral Reasoning learning model based on Sasak local wisdom for improved students' critical thinking skills or mutual cooperation character.

Keywords: Moral Reasoning Learning Model, Sasak Local Wisdom, Critical Thinking Skills, Mutual Cooperation Character

INTRODUCTION

Behavior that erodes morals, misinformation, and other consequences of technological advancements require careful filtering, using skills development and critical thinking to anticipate the various hoaxes mentioned above. Critical thinking skills are essential 21st-century, including critical thinking, collaboration, communication. These critical thinking skills and character education are seen as crucial for careful scrutiny and solutions to be sought (Butler, 2024). Critical thinking skills have actually been focused on since the 2013 Curriculum was implemented, but in reality, teachers have not for improved critical thinking in students well (Shutaleva, 2023). Based on the results of monitoring and Q&A that have been tried in schools in Mataram including SDN Model Mataram, SDN 31 Mataram Selaparang, SDN 3 Ampenan, SDN 30 Ampenan, information was obtained (1) Teachers gave High order thinking skill questions, only a small portion or less than 50% of students were able to answer well and systematically, (2) when students were given analytical questions, they were not yet able to explain and reason according to the desired answer, their answers were based on the answers in the teacher's book (3) when given questions, only 1 to 3 people were able to answer by explaining, the others only answered briefly without explaining the meaning. (4) When working on assignments, students were seen working on questions quickly so they could finish without thinking about the answers properly, tending to be less careful and less critical, the answers given were short based for answers in the teacher's book.

After examining the above, it was found that: First, teaching or learning activities at the classroom have not emphasized the process for g critical thinking skills, learning is still Low order thinking skills (LOTS). In the learning that is currently taking place, not many teachers are creating situations and an atmosphere that allows students to carry out critical thinking (Arisoy & Aybek, 2021). When students are not trained to think deeply, they will have difficulty absorbing each concept they learn and applying it in practice (Facione, 2012). Second, even though teachers understand and understand that their lessons must develop students' critical thinking skills, their implementation is still not optimal, resulting in learning being dominated by the teacher. When students are not trained to think deeply, they will have difficulty absorbing each concept they learn and applying it in practice (Warsah et al., 2021). Third, in the learning tools that have been developed by teachers, it seems to facilitate students to think critically, but when the learning tools are implemented in the classroom, it seems that students only wait and receive information

from the teacher, as if the teacher is only source for information in teaching. This is reinforced by Slamet (2016) that the current teaching situation, most of them are moving towards distributing the teacher's share of active students, calm, teachers give students welcome, teachers explain, students observe, active students are calm, teachers give students welcome, teachers explain, students observe (Bugg, 1997). Critical thinking skills are not the only problem experienced by learning, other problems are also very pressing to be addressed in learning (Rivas et al., 2022).

Likewise, the spirit of mutual cooperation is not yet evident in the practice of social interaction. Observations and interviews conducted on September 5 and 6, 2023, at several elementary schools in Mataram City SDN 31 Mataram, SDN 24 Mataram, SDN 2 Cakranegara, and SDN 8 Cakranegara showed that the spirit of mutual cooperation is still lacking. First, students prioritize themselves during group discussions. Smart and diligent students tend not to want to be peer tutors for their peers, only wanting to be right and able to do things themselves. Second, students are less willing to participate or play a role in mutual cooperation (*gotong royong*). The number of students participating in community service activities is small, with students preferring to leave these tasks to gardeners and janitors. The influence of globalization and modernization has a negative impact on children, as they become accustomed to instant and easily accessible things. By habitually playing with gadgets even when gathering with friends, close social relationships and a lack of direct communication occur, making those close to them feel distant. This behavioral picture indicates a decline in the spirit of mutual cooperation among school students. The causes of moral degradation according are; (1) the continued fading of native customs which have honorable values and the entry of foreign customs which are not in line with one's own customs, (2) the lack of support and enthusiasm of citizens to maintain and preserve customs (Tohri et al., 2022).

Various studies that incorporate traditional products into learning have yielded positive results, such as research conducted by (Dwi, 2020). Incorporating local wisdom into improving teaching methods is worthwhile because values for Sasak local wisdom, customs and practices of the Sasak people, include giving and receiving, openness, cooperation, mutual assistance, compassion, and a commitment to achieving peace, security, and safety. Integrating these values requires a concerted effort to explore, explore, and analyze, and actualize the local traditional values of the Sasak people in shaping the personalities for the students, from generation to generation, thus becoming a Sasak identity (Ramdan & Muzakar, 2022). Through local wisdom, learners can learn cultural values that can influence actions, attitudes, and thinking skills. The local wisdom integrated into the teaching is the local wisdom of the Sasak people of Lombok, including one lower number, which is stacked, and two lower numbers, which are used to protect oneself and others from human demotion. These two lower numbers represent *maliq and rice husk*. Furthermore, in the novel "Research on the Origins and Customs of Lombok," these values are further elaborated, including *tatas, tuhu, tresna, reme, and sesuai-paut* (respective). Local wisdom takes the form of local expertise, local intelligence, local energy sources, social systems, local values or norms of virtue, and local customs (Wagiran, 2012). Several other studies have been conducted on the local wisdom of the Sasak ethnic group. The Sasak ethnic group understands the tradition of *sangkēp* (conference) in resolving problems (conflicts) and formulating everything through mutual cooperation, such as marriage, death, building places of worship (Hikmawati et al., 2021). The local wisdom ethnic group fosters togetherness and mutual cooperation through the customs of *silih jot* (delivering food), *silih pēlangarin* (visiting each other), *silih ayoin* (visiting each other), and *silih ajinang* (respecting each other). These customs are clearly explained by Budiasmoro (2014) as a community's ability to maintain its values, thus reflecting its character and authenticity as a form of cultural identity.

Integrating customs, especially the local wisdom of the Sasak, Lombok, Indonesia, is one way to achieve this. One way is by developing innovative forms of education that not only improve 21st-century competencies but also preserve the nation's traditional values (Mashami et al., 2023). Furthermore, Palomar et al. (2006) in Southwestern City found that incorporating tradition as part of the teaching method successfully improved students' activity and conceptual understanding because the teaching methods linked mathematical concepts and traditions to everyday life. This research demonstrates that local traditional wisdom can impact the character of a community where the tradition develops and thrives. Previous research also indicated that the values of local Sasak have not mainstream and the foundation of character in educational institutions in Lombok (Tohri et al., 2022). According to Sukadi

(2013), not many teachers in Bali use local tradition-based teaching methods. This was revealed in research by Suastra (2005), which concluded that teaching in Bali tends to rely on a Western curriculum. This is also in line with research Suja (2010), which found that the used of Western models is not functional in real life. This situation is evident among elementary school children of the Balinese ethnic group.

Based on this, a teaching model is needed that can integrate development for student competencies with student character. A learning model that can be integrated with local cultural studies is a form of local culture-based Moral Reasoning learning. The Moral Reasoning learning model involves students in the learning process by providing stimuli in the form of problems containing moral dilemmas so that it can train students to become accustomed to making moral decisions, stimulate students to think critically, train students to discuss and collaborate, and form students' character values. According to Kohlberg (1995), Moral Reasoning in teaching is known as the Moral Reasoning teaching model, a cognitive moral (Sarwanto et al., 2021).

The above studies demonstrate the lack of specific research integrating Sasak local wisdom with the Moral Reasoning learning model. This is the primary reason for conducting the study "Development of a Moral Reasoning Learning Model Based on Sasak Local Wisdom and Its Influence on Critical Thinking Skills and the Character of Gotong Royong in Students at Elementary Schools in Mataram City".

LITERATURE REVIEW

Moral Reasoning Learning Model

Teaching using Moral Reasoning is one approach to values. This approach to values consists of five approaches, one of which is the cognitive moral development approach, popularly known as the Form of Moral Reasoning. This Form of Moral Reasoning has been defined by many experts. The cognitive moral development approach emphasizes varying degrees of moral perspective (Kotluk & Tormey, 2024). Teachers can focus students on practicing moral reasoning through dialogues about moral issues, enabling them to make decisions about their own moral problems. Students can describe the levels of moral reasoning, including concern for rewards, serving one's own desires, following expected contributions, following and obeying authority, acting for the common good, and acting in accordance with general ethical principles. Methods that can be used in applying moral reasoning with this approach include conducting group dialogues with moral questions, both actual and abstract. This aligns with Djahiri (1985) view that moral reasoning, or seeking or determining moral clarity, is an approach used to seek or determine moral clarity through encouragement in the form of doubt. Therefore, teachers can provide encouragement in the form of doubt to students (Khaghanizadeh et al., 2023). Students can be brought to sort themselves out, then increase their moral values through conversations or dialogue with friends and teachers (Rehren & Sauer, 2024).

Sasak Local Wisdom

The Sasak ethnic has understood that media is the foundation of social life. They establish principles for community life, and they also seek guidance to determine punishments for violations of their community's rules. This media is known as krama (Aswasulasikin et al., 2022). This has existed since ancient, application of this cultural concept has become an inseparable part or factor. Sasak people are referred to as "krame" in social status, consisting of titi krame, base krame, and aji krame. Abstractly, krama is a traditional institution that encompasses local wisdom, comprising two components: krama, the customary body, and krama, the rules of social interaction. Ajikrama consists of words, aji, meaning price or number, and krama, meaning "clean," and often refers to "territory or community unity within a customary territory." Therefore, ajikrama is a customary symbol, meaning the clean numbers of a Sasak social hierarchy, appropriate to its customary territory. The Sasak people's number system, which serves as a goal and method for navigating their daily lives, consists of three sets of numbers: a stacked core system, and a system, which serves as a moral responsibility for the Sasak people (Mashami et al., 2023). Local wisdom values developed in schools according to Habibudin (2020) include; (1) *Mutual Ajinang* (mutual respect); (2) *Tertip-terpi* (orderly and orderly) contained in the values of obeying (obedience); (3) *Teguq* (responsibility); (4) *Solah perateq* (kindness); (5) *Soloh* (peace-loving); (6) *Tetes* (participatory); (7) *Saling saduq* (mutual trust); (8) *Besemeton* (brotherhood); (9) *Ra'i* (empathy) and (10) *Bedadayan* (cooperation). This is more clearly illustrated as below.

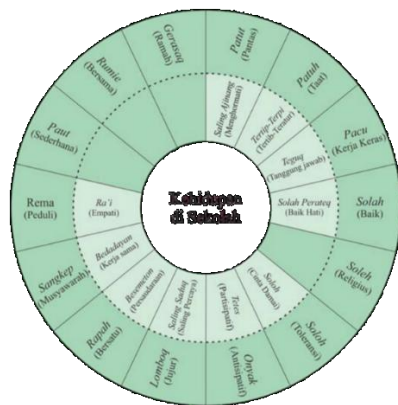


Figure (1). Sasak Local Wisdom Values Existing in Schools
(Source: Habibudin, 2020)

The development for Moral Reasoning learning model base for Sasak wisdom is a blend of Sasak local wisdom with the Moral Reasoning teaching form. In developing the Moral Reasoning teaching form based on Sasak local wisdom, the Sasak social system, especially the customs of *begundem* or *sangkep* (negotiation), is used as an important reference in formulating the syntax of the Wisdom-based Moral Reasoning teaching form.

Critical Thinking Skills

The development of a Moral Reasoning learning model based on Sasak local wisdom is a blend of Sasak local wisdom with the Moral Reasoning teaching form. In developing the Moral Reasoning teaching form based on Sasak local wisdom, the Sasak social system, especially the customs of *bendem* or *sangkep* (negotiation), is used as an important reference in formulating the syntax of the Wisdom-based Moral Reasoning teaching form (Ariadila et al., 2023). Critical thinking is a method of reflective thinking that is based on ideas or common sense and focuses on determining what should be believed and tried. Critical thinking is a method based on the steps of analyzing, observing, and evaluating reasons (Kusuma et al., 2024). Meanwhile, Walker (2005) reports that critical thinking is an intellectual way of generating plans, implementing them, analyzing them, synthesizing them, and evaluating a large amount of data obtained from monitoring, experience, and reflection, all of which are used as a basis for determining subsequent actions. Based on this definition, critical thinking is thinking that involves reasoning and common sense to solve problems (Dhamayanti, 2022). Critical thinking is a way of reflective thinking that focuses on ending what is believed or tried (Firdausi & Yermiandhoko, 2021). Critical thinking skills include the skills of accessing, analyzing, synthesizing data that can be learned, practiced and understood (Manurung et al., 2023). Critical thinking is a psychological activity that trains and improves the ability to think rationally, analytically, and logically in experiencing existing problems (Dermawan, 2015). Zetriuslita et al., 2016, also states that "Critical Thinking" is an activity that trains the ability to solve problems, analyze steps, and make logical, clear, and analytical decisions. Therefore, it can be concluded that critical thinking is a psychological activity that creates something that was previously unclear (Emily R. Lai, 2011). This means that critical thinking includes the skills of analyzing reasons, drawing conclusions using inductive or deductive reasoning, evaluating or assessing, and making decisions or solving problems.

Mutual Cooperation Character

Mutual cooperation is defined as a good deed or profession from all for all. Mutual cooperation is a traditional tradition that has developed and grown within Indonesian society (Laily et al., 2024). Mutual cooperation is defined as a good deed or profession from all for all. Mutual cooperation is a traditional tradition that has developed and grown within Indonesian society (Zakiya & Santoso, 2024). Gotong royong is still relatively new, but in fact the Gotong royong program already has a far-reaching track record, especially in rural Jawa (Dyah Puji Ardianasari et al., 2022). Rural residents, who are closely tied to agrarian life, require cooperation in agricultural activities, from seeding, planting, and tending to harvesting. Mutual cooperation exists not only in agriculture but also in rural areas (Sakti et al., 2024). These forms include mutual cooperation to help people who have died, helping people who have urgent needs such as

circumcision, marriage, birth, etc., and carrying out ordinary needs such as cleaning rivers, making roads, and the like.

METHOD

Research Design

This section outlines two things: the type and steps of model development. The research type section describes the type of research, while development steps section describes the stages of research product development according to the chosen research type.

Data Collection Methods

1. Qualitative data for Moral Reasoning learning based on Sasak local wisdom were obtained through expert and empirical experiments (expert validity and empirical validity). The expert experiments were conducted by experts from the formalized teaching group (tools experts, language experts, and learning content experts). The field experiments were conducted by students and formalized elementary school teachers. The experts evaluated the observation sheets and questionnaires.
2. Data on the practicality of teaching methods using the Sasak local wisdom-based teaching method were conducted by teachers and fourth-grade elementary school students using observation sheets and questionnaires.
3. Data on the effectiveness of the Sasak local wisdom-based Moral Reasoning teaching method for fostering Gotong Royong (mutual cooperation) behavior using observation methods outlined in observation sheets and questionnaires.
4. Data on the effectiveness of using the Sasak local wisdom-based Moral Reasoning teaching method for improving critical thinking skills using HOTS-level cognitive tests.

Instruments used in the research

The instruments use of this study; (1) a product questionnaire, which aim for test to validity for model development product, tested on learning content, language, and materials. (2) a teacher and student response questionnaire, which aimed to measure practicality for Moral Reasoning teaching model. The questionnaire contained closed-ended questions with five alternative choices.

All instruments used in this research were first validated by official experts, and then their CVR was calculated. The results for instrument tests are shown this Table 1.

Table (1). Summary for Instrument CVR Calculation Results

No.	Instrument	V1	V2	V3	Description
1	Learning Content Aspects	valid	valid	valid	28 valid items
2	Language Aspects	valid	valid	valid	12 valid items
3	Media Aspects	valid	valid	valid	23 valid items
4	User Responses	valid	valid	valid	10 valid items
5	Critical Thinking Skills Questions	valid	valid	valid	12 valid items
6	Mutual Cooperation Character Observation Sheet	valid	valid	valid	13 valid items

Next, item validity and instrument reliability tests were conducted on the expert-validated instruments. The validity or reliability results for instruments are presented in the following two sections:

Table (2). Summary of Instrument Trial Results

Statistics	Instrument	
	Critical Thinking Skills	Mutual Cooperation Character
Number of Respondents	50	50

t-Table	0.279	0.279
Validity	0.514-0.858	0.331-0.615
Reliability	0.918	0.755
Number of Items Dropped	2	0
Number of Items Used	10	13
Number of Items Before Test	12	13

Based from results of statistical tests of critical thinking ability and mutual cooperation character instruments (a) the t-Table value of both instruments is 0.279 (b) the validity of the critical thinking ability instrument is between 0.514-0.858 and the mutual cooperation character instrument is between 0.331-0.615 (c) the reliability of the critical thinking ability instrument is 0.918 and the mutual cooperation character instrument is 0.755 (d) the number of questions that are dropped on the critical thinking ability instrument is 2 out of 12 questions, so that 10 questions can be used, while on the mutual cooperation character instrument there are no items that are dropped so that all items can be used, namely 13 items can be used.

Data Analysis Methods

1. Validity testing is used to address the case at the conclusion of the problem. This analysis method is used to process expert reviews. The analysis technique uses the Lawshe method. In this case, five expert lecturers are involved. Each expert (subject matter experts - SME) answers questions using the answer options: inappropriate, less appropriate, and appropriate.
2. Practicality testing is used to answer the questions from the third problem formulation. To determine the practicality of the model, teacher and student responses are analyzed by processing data from descriptive and percentage questionnaires.
3. Effectiveness testing uses inferential analysis using t-tests and MANOVA tests to answer the questions in the third and fourth problem formulations using a hypothetical experiment. In this case, the hypothetical experiment research concept uses pre-tests and post-tests to determine whether there is an increase in the bound elasticity rate.

RESEARCH RESULTS

The results from statistical analysis for experimental and control class on variables of critical thinking skills and mutual cooperation character are shown this Table 3 below.

Table (3). Results for Statistical Analysis

Statistics		Exp Critical Thinking (A1Y1)	Exp Mutual Cooperation (A1Y2)	Control Critical Thinking (A2Y1)	Control Mutual Cooperation (A2Y2)
N	Valid	70	70	66	66
Mean		0,6643	0,6057	0,3318	0,4121
Median		0,7000	0,6000	0,3000	0,4000
Mode		0,70	0,60	0,30	0,40
Std. Deviation		0.20361	0,19307	0,35308	0,20744
Variance		0,011	0,009	0,023	0,12
Range		0,40	0,40	0,60	0,50
Minimum		0,50	0,40	0,10	0,20
Maximum		0,90	0,80	0,70	0,70
Sum		46.,0	42,40	21,90	27,20

The results from statistical analysis for critical thinking ability to experimental group (A1Y1) showed an average is 0.664 by standard deviation is 0.203. Meanwhile, for control group (A2Y1), an average of 0.331 was obtained with a standard deviation of 0.353. Data analysis on the character of mutual cooperation for

experimental class (A1Y2) showed an average is of 0.605 and a standard deviation is 0.193. Meanwhile, the control class (A2Y2) obtained an average is 0.412 and a standard deviation is 0.207.

Prerequisite Test Results

Before data analysis using MANOVA, classical tests were performed, which are prerequisites for analysis, included normality of data distribution, homogeneity, and multicollinearity testing.

The results for normality test for data distribution analyzed use SPSS platform are shown in the table 4. below.

Table (4). Results for Data Distribution Normality Test

Class	Standard Deviation	Number	Sig.
A1Y1	0,10361	70	0,143
A2Y1	0,15308	66	0,371
A1Y2	0,09307	70	0,130
A2Y2	0,10744	66	0,409

The analysis results show that the data distribution is greater than 0.05 for all tested variables, indicating a normal distribution.

Furthermore, the homogeneity test for variance matrix is presented in Table 5 below.

Tabel (5). Box's Test of Equality of Covariance Matrices

Description	Volume
Box's M	11,596
F	3,803
df1	3
df2	3639100,546
Sig.	0,110

The Box's M test above yielded a value of 11.596; the F-value was 3.803, and the sig. value was 0.110, which is greater than 0.05. Therefore, the variables for critical thinking ability (Y1) and mutual cooperation (Y2) are considered homogeneous.

A multicollinearity test between the dependent variables in this study yielded results as shown in this table 6.

Table (6). Multicollinearity Test Results

Variables		Y1	Y2
Y1	Pearson correlation coefficient	1	0,535
	2-tailed significance		0,000
	N	136	136
Y2	Pearson correlation coefficient	0,535	1
	2-tailed significance	0,000	
	N	136	136

The obtained r value of $0.535 < 0.8$ indicates that the critical thinking ability (Y1) and mutual cooperation character (Y2) variables don't experience multicollinearity. Based for results of prerequisite tests carried, it can conclusion that the classical tests as prerequisites, normality for data distribution, homogeneity, or multicollinearity, have all met the requirements.

Hypothesis Testing

After the prerequisite testing has been fulfilled, the next step is to test the effectiveness of the Moral Reasoning learning model based on Sasak local wisdom on critical thinking skills as shown in the ANOVA results in Table 7 below.

Table (7). One-Way ANOVA Test Results for Critical Thinking Ability

Source Variation	Sum of Squares	Df.	Mean Sum from Squares	F	Sig.
Between	0.33247	1	0.33247	8.173	0.005
Within (error)	14.908	134	0.02230		
Total (Residue)	15.245	113.353			

Based on Table 7, a dependent variable, critical thinking ability, was found to have an F value of 8.173, while the Sig. value was $0.005 < 0.05$. This indicates that the Sasak local wisdom-based Moral Reasoning teaching model has an effect on critical thinking ability.

The t-value for critical thinking ability, taken from F value is 8.173, and the Sig. value less than 0.05, indicates a significant difference in critical thinking ability between experimental class (A1) or the control class (A2). Average A1Y1 was $0.664 > A2Y1$ 0.331. This is further supported by ES value is 0.943 (high effectiveness category).

Testing the effect of the Sasak local wisdom-based Moral Reasoning learning model on the character of mutual cooperation, the formulation of the second hypothesis was tested using ANOVA. The results are below.

Table (8). One-Way ANOVA Results of Mutual Cooperation Character

Source Variation	Sum of Squares	Df.	Mean Sum from Squares	F	Sig.
Between	0.09359	1	0.09359	1.945	0.027
Within (error)	11.250	134	0.01721		
Total (Residue)	11.396	128.787			

Based on Table 8 the dependent variable, the mutual cooperation character, obtained an F value of 1.945 and a Sig. $0.027 < 0.05$. Therefore, H1 is accepted while H0 is rejected. It is stated that this is an effect to Moral Reasoning learning model based on Sasak wisdom on the mutual cooperation character.

The t value for the mutual cooperation character is calculated from the F root of 1.945. The Sig value < 0.05 indicates a significant difference in the mutual cooperation character between the trial/experimental group (A1) and the comparison/control group (A2), where the average A1Y2 is $0.605 > A2Y2$ is 0.412. This means that learning with the Moral Reasoning learning model based on Sasak local wisdom is more effective in improving the mutual cooperation character than learning without the Moral Reasoning learning model based on Sasak local wisdom. This is supported by the ES value of 0.932, which is included in the high effectiveness category.

In MANOVA there are several test statistics can use to make decisions on inter-class differences, which are presented in Table 9 as follows.

Tabel (9). Hasil Pengujian Multivariat

Multivariate Tests						
Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	0,977	2821.510 ^b	2.000	133.000	0,000
	Wilks' Lambda	0,023	2821.510 ^b	2.000	133.000	0,000
	Hoteling's Trace	42.429	2821.510 ^b	2.000	133.000	0,000
	Roy's Largest Root	42.429	2821.510 ^b	2.000	133.000	0,000

Multivariate Tests						
Effect		Value	F	Hypothesis df	Error df	Sig.
Class	Pillai's Trace	0,729	179.253 ^b	2.000	133.000	0,000
	Wilks' Lambda	0,271	179.253 ^b	2.000	133.000	0,000
	Hotelling's Trace	2.694	179.253 ^b	2.000	133.000	0,000
	Roy's Largest Root	2.694	179.253 ^b	2.000	133.000	0,000

Based on Table 9, the F value is 179.253, with a Sig. 0.000, which is less than 0.005, indicating significant significance. This indicates that the Sasak local wisdom-based Moral Reasoning teaching contributes significantly to critical thinking skills for character of mutual cooperation.

The detailed differences of critical thinking skills (Y1) and the character of mutual cooperation (Y2) students at the experimental class (A1) or control class (A2) are demonstrated in Table 10 below.

Table (10). Tests of Between Subjects Effects

Source	Dependent Variable	Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	Y1	3,755a	1	3,755	222,254	< 0,05
	Y2	1,273b	1	1,273	126,559	< 0,05
Intercept	Y1	33,706	1	33,706	1995,082	< 0,05
	Y2	35,193	1	35,193	3498,385	< 0,05
Class	Y1	3,755	1	3.755	222,254	< 0,05
	Y2	1,273	1	1.273	126,559	< 0,05
Error	Y1	2,264	134	0,017		
	Y2	1,348	134	0,01		
Total	Y1	40,42	136			
	Y2	38,24	136			
Corrected Total	Y1	6,019	135			
	Y2	2.621	135			

Based on Table 10 above, there is a relationship between the Moral Reasoning teaching base for Sasak local wisdom (A) and then critical thinking skills (Y1) obtained an F score of 222.254 while the Sig score is less than 0.05. It is concluded that there is a difference in the value of critical thinking skills (Y1) caused by differences at teaching patterns (A). Relationship between teaching model (A) and the character for mutual cooperation (Y2) gives an F is 126.559 with a Sig. <0.05. This indication that is a difference character of mutual cooperation caution of differences in learning models. Thus, it can be stated that learning with the Moral Reasoning learning model containing Sasak local wisdom has a significant effect simultaneously on critical thinking skills and the character of mutual cooperation (Y2). The joint t-value obtained at F Wilks Lambda A was 15.00 with a significance of less than 0.05, meaning there was a difference in critical thinking ability (Y1) and mutual cooperation character (Y2) between the experimental test group (A1) and the control group (A2) with an average (Y1Y2A1) of 0.634 > (Y1Y2A2) of 0.372. It was stated that teaching using the Moral Reasoning teaching model containing Sasak local wisdom was more effective in improving critical thinking ability and mutual cooperation character compared to learning without using the Moral Reasoning learning model based on Sasak local wisdom, as strengthened by an ES score of 0.992 (high effectiveness category).

Determine the effectiveness for teaching using Moral Reasoning model contain Sasak local wisdom of variables of critical thinking ability and mutual cooperation character of grade IV in elementary school students in Mataram City, the t-test was reviewed as shown in this table 11 below.

Table (11). t-Test Results

Variables	N	Mean	SD	F	T	Sig.	ES	Category
A1Y1	70	0,6643	0,20361	222,254	2,859	0,005	0,942	High Effectiveness
A2Y1	66	0,3318	0,35308					
A1Y2	70	0,6057	0,19307	176,559	1,116	0.027	0,933	High Effectiveness
A2Y2	66	0,4121	0,20744					
A1Y1Y2	70	0,6350	0,19834	179,153	13,384	0,000	0,938	High Effectiveness
A2Y1Y2	66	0,3720	0,28026					

1. The t-value of critical thinking ability obtained F score for (FAY1) is 222.254 and Sig score, is 0.005 smaller than 0.05. The conclusion is that there is a significant difference in the critical thinking ability variable for experimental class (A1) with the control (A2) on average (Y1A1) is 0.664 > (Y1A2) is 0.331. This means that teaching using the Moral Reasoning learning model containing Sasak local wisdom is more effective in improving critical thinking skills than without using the Moral Reasoning learning model. This is also strengthened by ES is 0.943 (high effectiveness).

2. The t-value for mutual cooperation character obtained F score for (AY2) is 176.559 and Sig score is 0.027 is smaller than <0.05. There was a significant difference for the mutual cooperation (Y2) character between the experimental group (A1) and the control group (A2), as evidenced by the average (Y2A1) of 0.605 > (Y2A2) of 0.412. This means that teaching using the Moral Reasoning teaching model contain Sasak wisdom is more effective for improv mutual cooperation character compared to not using the Moral Reasoning teaching model, as reinforced by the ES score of 0.933 (high effectiveness category).

3. The joint t-value obtained with an F score of 179.153 and a Sig. score of 0.000, less than 0.05. There was a significant difference for critical thinking skills (Y1) or mutual cooperation (Y2) character between experimental class (A1) or control group (A2), with an average (Y1Y2A1) of 0.635 > (Y1Y2A2) of 0.372. This means that teaching using the Moral Reasoning model based on Sasak wisdom is more effective of simultaneously improve critical thinking skills and mutual cooperation character compared to not using the Moral Reasoning teaching model, which is strengthened by an ES score of 0.918 (high effectiveness category).

DISCUSSION

The Effectiveness for the Moral Reasoning Learning Model Based on Sasak Local Wisdom in Improving Critical Thinking Skills

Critical thinking skills can be developed by emphasizing systems, forms, designs, principles, and the strong relationships between one factor and another. In teaching that emphasizes problem-solving, all of these aspects must be reinforced in students (Varatha Raju & Thambu, 2020). The form of teaching that leads to solutions to problems based on local wisdom has a positive influence on critical thinking skills (Prayogi et al., 2024). These studies confirm the findings of the results of the application of the Moral Reasoning teaching form which influences students' critical thinking skills, encouraging students to think actively about moral problems and make moral decisions. Moral progress in this Moral Reasoning teaching form is observed as progress in the level of thinking in making moral estimates, from a small level to a larger level (Khaghanizadeh et al., 2023).

Furthermore, Moral Reasoning learning through moral dialogue can enliven the group atmosphere, provide opportunities for students to use their questioning skills and analyze problems, provide students with more intensive research into issues or problems, ultimately leading to solutions, improve leadership and brainstorming skills, make students more active and participate in dialogue, and provide opportunities for students to develop respect for their peers who have helped the group achieve its goals, encouraging students to develop better personalities. Positive findings related to the Sasak local wisdom-based Moral Reasoning learning model on critical thinking skills are supported by the development of a design, such as a teaching module and its appendix, which detail learning activities using the Sasak local

wisdom-based Moral Reasoning learning model. This model stimulates students, both in groups and individually, through various ideas to become accustomed to solving problems based on their moral reasoning.

The application of the Sasak local wisdom-based Moral Reasoning learning model has a positive impact on students' critical thinking skills, including: *Dawunang* (presenting problems); *Sangkep/berembuk* (deliberation and discussion), *Aji Krame* (analysis and identification of values), and finally *Ketangkil* (presentation and evaluation). Students are required to actively participate in discussions to determine existing moral values, utilizing various forms of interesting and meaningful local wisdom. This is in line with the conditions of teaching in the 21st century, which advances critical thinking skills and personality as important teaching goals in elementary schools (Warsah et al., 2021) and (Rivas et al., 2022).

The Effectiveness of the Moral Reasoning Learning Model Based on Sasak Local Wisdom in Improving the Character of Mutual Cooperation

The results of the study showed that during the teaching process, especially in the second stage, namely *Sangkep* (consultation), at this stage students were given the opportunity to analyze moral dilemma cases given through comic media, then students were asked to discuss the contents of the story and determine what attitude should be taken towards the existing case. After discussing, students chose and decided together, the appropriate attitude based on the reasons so that students could make decisions in accordance with joint decisions and in accordance with their moral reasoning, answer the opinions of other groups, and were trained to respect each other's comparisons of opinions, resulting in a very helpful development of positive actions and the character of mutual cooperation of students (Musaddat, 2021). This category of dialogue activity is a characteristic of collaborative teaching that allows students to carry out active interactions, exchange ideas and opinions, and learn to appreciate comparisons (Sunifa Asri et al., 2024). This is supported by research conducted by Ryan (2003), who found that teaching problem-solving using Moral Reasoning actually provides a positive learning atmosphere and the ability to express opinions, and supports personality development in high school students in the United States. Similarly, research conducted by Hijah Veronica (2016) examined the effectiveness of Moral Reasoning and imitation in improving social skills by focusing on emotional intelligence in social studies.

The researchers' findings confirm that significant contributions to each perspective are due to the implementation of Moral Reasoning teaching based on Sasak local wisdom. This approach focuses on problem-solving and creating solutions through collaboration and moral reasoning, incorporating Sasak local wisdom, making learning more meaningful. Similarly, Suastra et al. (2017) reported that teaching science based on Balinese local wisdom can improve students' personality. This is in line with the meaning of local wisdom itself, namely that wisdom develops from solutions to problems that are local and valid and limited to the area where it develops and grows (Muliadi et al., 2024) and (Rasya et al., 2024).

The Effectiveness of the Moral Reasoning Learning Model Based on Sasak Local Wisdom in Improving Thinking Skills and the Character of Mutual Cooperation

The effectiveness of the Moral Reasoning learning model based on Sasak local wisdom on students' critical thinking skills and mutual cooperation personality is due to the characteristics and advantages of the Moral Reasoning teaching form which integrates Sasak local wisdom through collaborative teaching activities with reference to the philosophy of constructivism (Fauzan et al., 2023). The advantages of the Moral Reasoning teaching model based on Sasak local wisdom are based on the character of each level in the activity of analyzing moral values based on local wisdom by promoting group activities so that students gain experience analyzing values based on cases collaboratively and deciding on the attitudes of the Sasak community. The five phases of the Moral Reasoning learning model with Sasak local wisdom in the learning activity steps as the basis of teaching activities, so that through the construction of the levels of the form, it is designed to be able to improve critical thinking skills and the character of mutual cooperation of students. The success of the Moral Reasoning teaching model based on Sasak local wisdom in improving both views is also supported by various studies that use traditional products in teaching, proving positive results (Piesesa & Camellia, 2023). And Sochima's (2013) research demonstrated that utilizing traditional products as a learning resource contributes to improving students' skills. This teaching

method demonstrated positive results by linking mathematical concepts and traditions to everyday life (Hidayah et al., 2022).

This analysis activity is carried out in groups so that it requires activeness and cooperation, it requires how to respect opinions so that with this activity the character of mutual cooperation develops well, by working together and working together (*sangkep and Reme*) to find solutions to moral dilemma problems based on Moral (Paut/Patut). It is stated that the Moral Reasoning model with greater moral estimation makes its critical thinking method (Piesesa & Camellia, 2023). In this way, the position of a teacher means that he/she is involved in developing the personality of students through teaching (Hanafiah et al., 2023). The teacher's position in the dialogue stage using the Moral Reasoning learning model is: (1) to ensure that students master the dilemma presented (2) to help students experience the moral aspects of the case (3) to push students' views on the decisions to be made and (4) to push students to interact with each other (Muhammad Fauzan Muttaqin & Hadi Rohyana, 2023) With the form of Moral Reasoning teaching based on local Sasak wisdom, critical thinking skills and mutual cooperation character can be improved. (Fitriyah & Ramadani, 2021).

CONCLUSION

In accordance with the formulation of the research problem, several things are worthy of being the conclusion of this research; (1) The design of the Moral Reasoning learning model based on Sasak local wisdom in elementary schools to improve students' critical thinking skills and mutual cooperation character is carried out base to needs analysis products developed are in accordance with the concept/idea of developing the Moral Reasoning learning model based on Sasak local wisdom and are suitable for use in learning. (2) The practicality of the Moral Reasoning learning model based on Sasak local wisdom is the result of the implementation response that has been carried out, stated as practical based on the responses of teachers and students as users. (3) The effectiveness for influence of the implementation of the Moral Reasoning learning model based on Sasak local wisdom on the critical thinking skills of grade IV in elementary school students at Mataram City is high effectiveness. (4) The effectiveness of the influence of the Moral Reasoning learning model based on Sasak local wisdom on the mutual cooperation character of fourth grade elementary school students in Mataram City is classified as high effectiveness. (5) The effectiveness of influence for Moral Reasoning teaching model containing Sasak wisdom together for critical thinking skills and mutual cooperation character is included in the high effectiveness. This shows that Moral Reasoning learning model base of Sasak local wisdom in learning has a positive effect on the critical thinking skills and mutual cooperation character of grade IV in elementary school students at Mataram City.

REFERENCES

1. H. A. Butler. 2024. "Predicting Everyday Critical Thinking: A Review of Critical Thinking Assessments," *J. Intell.*, vol. 12, no. 2, doi: 10.3390/jintelligence12020016.
2. A. Shutaleva. 2023. "Ecological Culture and Critical Thinking: Building of a Sustainable Future," *Sustain.*, vol. 15, no. 18, doi: 10.3390/su151813492.
3. B. Arisoy and B. Aybek. 2021. "The effects of subject-based critical thinking education in mathematics on students' critical thinking skills and virtues*," *Eurasian J. Educ. Res.*, vol. 2021, no. 92, pp. 99-120, doi: 10.14689/ejer.2021.92.6.
4. I. Warsah, R. Morganna, M. Uyun, H. Hamengkubuwono, and M. Afandi. 2021. "The Impact of Collaborative Learning on Learners' Critical Thinking Skills," *Int. J. Instr.*, vol. 14, no. 2, pp. 443-460, doi: 10.29333/iji.2021.14225a.
5. N. Bugg. 1997. "Teaching critical thinking skills," *Radiol. Technol.*, vol. 68, no. 5, pp. 433-434, doi: 10.4324/9780429342042.
6. S. F. Rivas, C. Saiz, and C. Ossa. 2022. "Metacognitive Strategies and Development of Critical Thinking in Higher Education," *Front. Psychol.*, vol. 13, no. June, doi: 10.3389/fpsyg.2022.913219.
7. A. Tohri, A. Rasyad, M. Sururuddin, and L. M. Istiqlal. 2022. "The urgency of Sasak local wisdom-based character education for elementary school in East Lombok, Indonesia," *Int. J. Eval. Res. Educ.*, vol. 11, no. 1, pp. 333-344, doi: 10.11591/ijere.v11i1.21869.
8. A. Y. Ramdan and A. Muzakar. 2022. "Principles in Sasak Local Wisdom as Character Education Values for Children," *JPPM (Jurnal Pendidik. dan Pemberdaya. Masyarakat)*, vol. 9, no. 1, pp. 61-71, doi: 10.21831/jppm.v9i1.25334.
9. Hikmawati, I. W. Suastra, and N. M. Pujani. 2021. "Local wisdom in Lombok island with the potential of ethnosience for the development of learning models in junior high school," *J. Phys. Conf. Ser.*, vol. 1816, no. 1, doi: 10.1088/1742-6596/1816/1/012105.
10. R. A. Mashami, S. Suryati, B. M. Harisanti, and Y. Khery. 2023. "Identification of Local Wisdom of The Sasak Tribe

In Chemistry Learning as an Effort to Strengthen Student Character," *J. Penelit. Pendidik. IPA*, vol. 9, no. 1, pp. 337–345, doi: 10.29303/jppipa.v9i1.2434.

11. Sarwanto, S. L. E. W. Fajari, and Chumdari. 2021. "Critical Thinking Skills and Their Impacts Sarwanto Laksmi Evasufi Widi Fajari & Chumdari Faculty of Teacher Training and Education Universitas Sebelas Maret University, Indonesia," *Malaysian J. Learn. Instr.*, vol. 18, no. 2, pp. 161–188, [Online]. Available: <http://e-journal.uum.edu.my/index.php/mjli>.

12. N. Kotluk and R. Tormey. 2024. "The impact of varying levels of compassion in ethics education case studies on students' moral reasoning," *J. Moral Educ.*, vol. 00, no. 00, pp. 1–21, doi: 10.1080/03057240.2024.2411962.

13. M. Khaghanizadeh, A. Koochi, A. Ebadi, and A. Vahedian-Azimi. 2023. "The effect and comparison of training in ethical decision-making through lectures and group discussions on moral reasoning, moral distress and moral sensitivity in nurses: a clinical randomized controlled trial," *BMC Med. Ethics*, vol. 24, no. 1, pp. 1–15, doi: 10.1186/s12910-023-00938-5.

14. P. Rehren and H. Sauer. 2024. "Another Brick in the Wall? Moral Education, Social Learning, and Moral Progress," *Ethical Theory Moral Pract.*, vol. 27, no. 1, pp. 25–40, doi: 10.1007/s10677-022-10351-3.

15. A. Aswasulasikin, D. Fadilah, and Y. A. Hadi. 2022. "Inculcating of sasak local cultural values in learning at elementary school," *J. Educ. J. Pendidik. Indones.*, vol. 8, no. 2, p. 96, doi: 10.29210/1202222460.

16. S. N. Ariadila, Y. F. N. Silalahi, F. H. Fadiyah, U. Jamaluddin, and S. Setiawan. 2023. "Analysis of the Importance of Critical Thinking Skills for Student Learning," *J. Ilm. Wahana Pendidik.*, vol. 9, no. 20, pp. 664–669.

17. E. Kusuma, A. Handayani, and D. Rakhmawati. 2024. "The Importance of Developing Critical Thinking Skills in Elementary School Students: A Literature Review," *Wawasan Pendidik.*, vol. 4, no. 2, pp. 369–379, doi: 10.26877/jwp.v4i2.17971.

18. P. V. Dhamayanti. 2022. "Systematic literature review: The Influence of Inquiry Learning Strategy on Students' Critical Thinking Skills," *Indones. J. Educ. Dev.*, vol. 3, no. 2, pp. 209–219, [Online]. Available: <https://ojs.mahadewa.ac.id/index.php/ijed/article/view/1966/1530>.

19. B. W. Firdausi and Y. Yermiandhoko. 2021. "Improving Critical Thinking Skills in Elementary School Students," *J. Pendidik. Dasar*, vol. 11, no. 2, pp. 229–243.

20. A. S. Manurung, F. Fahrurrozi, E. Utomo, and G. Gumelar. 2023. "Implementing critical thinking in an effort to develop students' creative thinking skills. Papeda Journal: Journal of Elementary Education Publication, 5(2), 120-132," *J. Papeda*, vol. 5, no. 2, pp. 120–132.

21. Laily, Usman, Ali, Hidayati, and Nurul. 2024. "Cultivating the Character of Mutual Cooperation Through Entrepreneurship and Local Wisdom Themes in the Independent Curriculum," *J. Teknol. Pendidik.*, vol. 1, no. 3, p. 10, doi: 10.47134/jtp.v1i3.86.

22. A. Zakiya and G. Santoso. 2024. "Habituation of the Mutual Cooperation Character in Pancasila Education in Elementary Schools," *IJEBD (International J. Entrep. Bus. Dev.)*, vol. 7, no. 4, pp. 785–793, doi: 10.29138/ijebd.v7i4.2895.

23. Dyah Puji Ardianasari, Sri Utaminingsih, and Su'ad. 2022. "Increasing The Character Of Mutual Cooperation And Independence From Elementary School Students," *Al Qodiri J. Pendidikan, Sos. dan Keagamaan*, vol. 20, no. 2, pp. 261–266, doi: 10.53515/qodiri.2022.20.2.261-266.

24. S. A. Sakti, S. Endraswara, and A. Rohman. 2024. "Revitalizing local wisdom within character education through ethnopedagogy approach: A case study on a preschool in Yogyakarta," *Heliyon*, vol. 10, no. 10, p. e31370, doi: 10.1016/j.heliyon.2024.e31370.

25. L. D. Varatha Raju and N. Thambu. 2020. "Caring Moral Reasoning Through Forum Theatre in Teaching and Learning of Moral Education," *Muall. J. Soc. Sci. Humanit.*, vol. 4, no. 2, pp. 214–228, doi: 10.33306/mjssh/75.

26. R. Prayogi, S. Sapriya, M. J. I. Adam, and T. H. Nurgiansah. 2024. "Model of Civic Education as Moral Education," *ASANKA J. Soc. Sci. Educ.*, vol. 5, no. 1, pp. 43–51, doi: 10.21154/asanka.v5i1.8353.

27. S. Musaddat. 2020. "Social Characteristics and Local Wisdom in Sasak Folklore : Reconstruction of the Development of Digital Story Books in Elementary Schools," vol. 556, no. Access 2020, pp. 178–182, 2021.

28. E. Sunifa Asri, H. Hidayatussoalihah, M. Mertina, H. Halimatussakdiah, B. Nunike Sulvia Dewi, and L. Sumardi. 2024. "Ethno Parenting: Early Childhood Character Development Based on Local Wisdom of the Sasak Tribe," *Int. J. Educ. Digit. Learn.*, vol. 3, no. 2, pp. 73–82, doi: 10.47353/ijedl.v3i2.221.

29. E. Muliadi, A. Asyari, J. Jumarim, and U. Nasri. 2024. "Exploring Traditional Wisdom: Values Education in the Games of the Sasak Tribe, Lombok, West Nusa Tenggara, Indonesia," *J. Adv. Educ. Philos.*, vol. 8, no. 03, pp. 168–179, doi: 10.36348/jaep.2024.v08i03.004.

30. G. Rasya, M. Tahir, and I. Oktaviyanti. 2024. "Development of a Learning Module Based on Local Wisdom of the Sasak Tribe on Fifth Grade in Social Science Subject At Sdn 22 Ampenan," *Prog. Pendidik.*, vol. 5, no. 1, pp. 7–15, doi: 10.29303/prospek.v5i1.365.

31. F. Fauzan, R. A. M. Ansori, M. Dannur, A. Pratama, and A. Hairit. 2023. "The Implementation of the Merdeka Curriculum (Independent Curriculum) in Strengthening Students' Character in Indonesia," *Aqlamuna J. Educ. Stud.*, vol. 1, no. 1, pp. 136–155, doi: 10.58223/aqlamuna.v1i1.237.

32. M. S. L. Piesesa and C. Camellia. 2023. "Pancasila Student Profile Strengthening Project Design to Instill Independent, Creative, and Mutual Cooperation Character Values," *J. Moral Kemasyarakatan*, vol. 8, no. 1, pp. 74–83, doi: 10.21067/jmk.v8i1.8260.

33. L. N. Hidayah, N. Hasjim, and A. I. Al-Ma'ruf. 2022. "Nationalist and Mutual Cooperation Character Values in Andrea Hirata's Novel Aini," *Diglosia J. Kaji. Bahasa, Sastra, dan Pengajarannya*, vol. 5, no. 2, pp. 453–472, doi: 10.30872/diglosia.v5i2.359.

34. D. Hanafiah, B. Martati, and L. B. Mirnawati. 2023. "The Value of Mutual Cooperation in Pancasila Education for Grade IV in Elementary Schools," *Al-Madrasah J. Educator. Madrasah Ibtidaiyah*, vol. 7, no. 2, p. 539, doi: 10.35931/am.v7i2.18