



The Effectiveness of the Tudang Sipulung Integrated Project-based Learning Model to Improve the Character of Mutual Cooperation at the Elementary School Level

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

This research aims to analyze the effectiveness of the Tudang Sipulung integrated project-based learning model to improve the character of mutual cooperation at the elementary school level. This type of research is Research and Development (R&D). The development design model used in this research is the ADDIE model, which consists of the stages of analysis, design, development, implementation, and evaluation. The subjects of this research were fourth grade students at PAM Pilot Elementary School. Techniques for collecting data through validation sheets, questionnaires and observation sheets. The data obtained qualitatively corresponds to the development research stage. The results of this research show that during the effectiveness trial, the Mutual Cooperation Character of Students in the Tudang Sipulung Integrated Project Based Learning Model based on the assessment aspects given was in the medium category, namely 0.48. This means that the students' mutual cooperation character during learning after using the tudang sipulung integrated project-based model is as expected, so that the use of the tudang sipulung integrated project-based

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learning model is successful in cultivating the students' mutual cooperation character in the classroom during the learning process. The Tudang Sipulung integrated project-based learning model was declared effective in improving students' cooperative character.

Keywords: Effectiveness of project based learning model; tudang sipulung; gotong royong.

1. INTRODUCTION

Education has a very important role in shaping individual character and personality, as well as preparing the younger generation as important pillars in society. In Indonesia, Pancasila values have a special position as a moral and ethical foundation that binds the entire nation. Pancasila as the source of all sources of values is the basis and estuary of every decision and action in education, in other words: Pancasila as the source of the value system in education [1].

Learning in formal and non-formal schools is guided by the goals of national education, namely to develop Indonesian people and make the life of the nation intelligent. Humans who have faith and devotion to God Almighty, have noble character, are independent, have a stable personality, are physically and mentally healthy, have skills and knowledge and also have a sense of responsibility in national and social life.

The learning model is a form of learning that is depicted from beginning to end, which is presented in a unique way by the teacher. In other words, a learning model is a wrapper or frame for the application of a learning approach, method, strategy and technique [2]. The learning model is a conceptual framework that describes systematic procedures for organizing learning experiences to achieve certain learning goals and functions as a guide for learning designers and teachers in planning and implementing teaching and learning activities [3]. Meanwhile, according to Joyce, a learning model is a plan or pattern that is used as a guide in planning learning in class or learning in tutorials and to determine learning tools including books, films, computers, curriculum, etc. [4].

From the definitions above, it can be concluded that a learning model is a pattern used by a teacher in a lesson that is depicted from beginning to end, presented in a unique way by the teacher, which includes learning approaches, methods, strategies and techniques.

According to Darmawan and Wahyuddin, the project-based learning model is a learning model that provides educators with the opportunity to manage learning in the classroom by involving

project work [5]. In line with that, the project-based model is a model, strategy, or student-centered learning method, where students are invited to develop their own the abilities that exist within them by creating learning projects (activities), so that it is hoped that they can develop their creativity and critical thinking abilities will be awakened by using this model where to complete a project requires effort and hard work and working cooperatively with the group [6].

The project-based learning model offers a student-centered approach to learning, emphasizing active, collaborative learning and the practical application of knowledge. By utilizing one of the local Bugis/Makassar wisdoms, namely the Tudang Sipulung culture, which is then integrated into a project-based learning model, it can provide a real and relevant context for students.

Tudang sipulung literally means sitting together. However, conceptually it is a space for people to voice their interests in order to find solutions to the problems they face [7]. Implementation can be official or informal. Starting from the smallest level in the family, between families, within institutions (schools), within regions, between regions, within countries, to between countries. In Tudassipulung, those who are asked for their opinion are obliged to give their opinion even if their opinion is the same as the other participants.

Mattulada explains in Latoa's book that the Bugis people's pattern of thinking in social and cultural life includes three things, namely first, whatever their social level and rank, they are creatures of the same rank as God's creation, secondly, humans in their life goals desire virtue, and thirdly, humans are in building the values of social and cultural institutions, always trying to achieve harmony between collective interests and individual interests [8].

Tudang sipulung in this case has several aspects of cultural value, namely first Siri' in the sense of siri' massiri' contains motivation to change, improve and develop the fate of individuals and groups. Siri' works as motivation because it awakens the desire to succeed, with the desire to

gain respectable value and dignity in the eyes of superiors and subordinates. The realization of the concept of *siri'* is an obligation for every individual and group, because losing *siri'* is the same as losing oneself for the Bugis-Makassar community. Both *Tongeng* mean the values of honesty and sincerity. This basic value reflects a person's condition in a public space which must be based on the values of honesty and sincerity. Third, *Lempuk* (straight action), this basic value is related to the attitude or actions of a person in the deliberation process who must behave honestly and correctly, not act fraudulently so as to create fair conditions.

In a *tudang sipulung*. *Abbulu sibattang* contains the meaning of a sense of solidarity to help others, in every challenge and difficulty. The sense of solidarity is also accompanied by a spirit of mutual respect which in the Bugis-Makassar expression is called *sipakatau* [9]. With the learning model developed by researchers, it will encourage teachers and students to understand and apply the Pancasila student profile, one of which is the character of mutual cooperation in everyday life.

Mutual cooperation is the crystallization of the development of character values [10]. *Gotong royong* is also one of the characteristics of the Pancasila student profile with the aim of Indonesian students having the ability to work together, namely the ability to carry out activities together voluntarily so that the activities carried out can run smoothly, easily and easily. The elements of mutual cooperation are collaboration, caring and sharing. Local wisdom is a cultural element that must be explored, studied and revitalized because its essence is very important in strengthening the foundations of national identity in facing the challenges of globalization and changing times [11].

Gotong royong is a concept or tradition in Indonesian culture that refers to cooperation in carrying out activities. *Gotong royong* is a cultural practice in Indonesia that involves people working together for the common good. *Gotong royong* is a traditional value that has been passed down from generation to generation and is deeply rooted in Indonesian society [12]. The term "*gotong royong*" can be translated as *Gotong royong* is a significant cultural phenomenon in elementary schools in Indonesia. So that the explanation above can be concluded that it is important to create a generational learning model that has the characteristics of a Pancasila student profile which of course can be

formed through learning. One of the profiles of Pancasila students that the author will form is mutual cooperation and the author then develops a learning model that will improve the character of mutual cooperation as one of the profiles of Pancasila students, namely a project-based learning model that is integrated with local wisdom, namely the *tudang sipulung* culture.

While the study mentions the cultural relevance of the *Tudang Sipulung* integrated project-based learning model, it would be beneficial to explore this aspect in more detail, discussing how the model is integrated with local wisdom and how it contributes to the development of national identity in facing the challenges of globalization and changing times.

2. METHODS

This type of research is Research and Development (R&D). The development design model used in this research is the ADDIE model. Which consists of the stages of analysis, design, development, implementation, and evaluation. The subjects of this research were fourth grade students at PAM Pilot Elementary School. Techniques for collecting data include validation sheets, questionnaires, and observation sheets. The data obtained qualitatively corresponds to the development research stage.

3. RESULTS

An overview of the effectiveness of the learning model can be obtained at the implementation and evaluation stages which refer to the ADDIE design which is carried out by implementing or applying all research and development products to users, namely model teachers and students. Observers are needed to observe and assess the learning implementation process based on the instruments provided. has been validated at the development stage. The effectiveness of a development product shows the impact produced after implementing the *Tudang Sipulung* Integrated Project Based Learning Model.

An illustration of the effectiveness of the *Tudang Sipulung* Integrated Project Based learning model can be seen from the increase in the character of mutual cooperation among students, the ability of teachers in implementing learning. Learning effectiveness will describe the achievement of learning outcomes after implementing the *Tudang Sipulung* Integrated Project Based Learning Model. All research results related to the effectiveness of learning models can be described as follows:

3.1 Observation Results of the Implementation of the Tudang Sipulung Integrated Project Based Learning Model

Observations on learning management by teachers were carried out with the aim of observing the teacher's ability to present learning through an integrated project-based learning model, Tudang Sipulung as a development product. Observation of the teacher's ability to manage learning through observation sheets refers to the teacher's activities carried out at each stage of the learning phase or syntax that has been developed. The results of observations regarding the implementation of learning by the teacher are shown in the following Table 1.

The Table 1 shows the teacher's ability to manage learning through the Tudang Sipulung Integrated Project Based learning model based on the syntax or learning steps carried out by the teacher. Learning management is seen at every stage of learning that has been explained in the model book. The aspect of observing the teacher's learning management ability shows a category that strongly agrees with the entire series of activities carried out starting from the observation aspect when the teacher carries out the introduction, the core of the learning, to the conclusion. The teacher's ability to manage learning also shows one indicator of learning effectiveness by implementing the Tudang Sipulung Integrated Project Based learning model.

3.2 Results of the Effectiveness of Students' Mutual Cooperation Character in the Tudang Sipulung Integrated Project-Based Learning Model

The instrument for effectiveness can be observed from student learning observations

carried out by giving a questionnaire to determine students' knowledge regarding the mutual cooperation character of students after learning using the Tudang Sipulung Integrated Project-Based Learning Model as a development product.

Observations of students' learning activities are carried out using a questionnaire sheet referring to students' activities carried out at each stage of the learning phase or syntax as a response to the teacher's activities when managing learning, then determining the percentage of students who actively participate in the learning process. Student activities were observed after implementing the Tudang Sipulung Integrated Project Based learning model in science and science learning.

The results of the questionnaire (Effectiveness) of students' mutual characteristics before implementing the Tudang Sipulung Integrated Project-Based Learning Model are shown in the following Table 2.

The Table 3 shows (Effectiveness) of the Mutual Cooperation Character of Students after implementing the Tudang Sipulung Integrated Project-Based Learning Model based on the assessment aspects given.

The Table 3 shows the teacher's ability to manage learning through the Tudang Sipulung Integrated Project-Based Learning Model based on the syntax or learning steps carried out by the teacher. This means that the students' mutual cooperation character during learning after using the tudang sipulung integrated project-based model is as expected, so that the use of the tudang sipulung integrated project-based learning model is successful in cultivating the students' mutual cooperation character in the classroom during the learning process.

Table 1. Observation results of the implementation (effectiveness) of teacher learning in the Tudang Sipulung integrated project-based learning model

| No. | Assessment Aspects | Average value | Information |
|-----|--------------------|---------------|----------------|
| 1. | Introduction | 3,5 | Strongly agree |
| 2. | Core | 3,6 | Strongly agree |
| 3. | Closing | 3,0 | Strongly agree |

(Source: Results of data processing with a Likert scale)

Table 2. Questionnaire (Effectiveness) of Students' Mutual Cooperation Character before Implementing the Tudang Sipulung Integrated Project-based Learning Model

| Student | Mutual Cooperation Attitude statement item | | | | | | | | | | Amount | Maximum Score |
|--------------------|--|---|---|---|---|---|---|---|---|----|--------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 1 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 27 | 40 |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 20 | |
| 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 26 | |
| 4 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 26 | |
| 5 | 2 | 2 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 22 | |
| 6 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 2 | 3 | 25 | |
| 7 | 2 | 2 | 3 | 4 | 3 | 3 | 2 | 3 | 3 | 3 | 26 | |
| 8 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 22 | |
| 9 | 2 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 23 | |
| 10 | 3 | 2 | 2 | 2 | 1 | 3 | 3 | 3 | 3 | 2 | 24 | |
| 11 | 3 | 2 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 23 | |
| 12 | 2 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 25 | |
| 13 | 2 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 23 | |
| 14 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 22 | |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 28 | |
| 16 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 22 | |
| 17 | 3 | 2 | 2 | 2 | 3 | 3 | 3 | 2 | 3 | 2 | 23 | |
| 18 | 2 | 3 | 3 | 2 | 2 | 3 | 2 | 3 | 2 | 3 | 25 | |
| 19 | 3 | 3 | 2 | 2 | 3 | 2 | 3 | 2 | 2 | 3 | 25 | |
| 20 | 2 | 3 | 2 | 3 | 2 | 2 | 2 | 3 | 3 | 2 | 24 | |
| 21 | 4 | 2 | 3 | 2 | 2 | 3 | 2 | 3 | 2 | 2 | 25 | |
| 22 | 2 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 3 | 2 | 25 | |
| 23 | 2 | 3 | 2 | 2 | 3 | 2 | 3 | 3 | 2 | 2 | 24 | |
| 24 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 3 | 2 | 3 | 23 | |
| 25 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 2 | 26 | |
| 26 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 22 | |
| 27 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 3 | 26 | |
| Pre-Test Average | | | | | | | | | | | 24.15 | |
| Standard Deviation | | | | | | | | | | | | 1.74 |
| Variance | | | | | | | | | | | | 3.03 |

Table 3. Questionnaire (Effectiveness) of Students' Mutual Cooperation Character after implementing the Integrated Tudang Sipulung project-based learning model

| Student | Mutual Cooperation Attitude statement item | | | | | | | | | | Amount | Maximum Score |
|---------|--|---|---|---|---|---|---|---|---|----|--------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 1 | 4 | 3 | 3 | 4 | 3 | 4 | 3 | 2 | 3 | 3 | 32 | 40 |
| 2 | 3 | 3 | 2 | 3 | 4 | 3 | 3 | 4 | 4 | 4 | 33 | |
| 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 4 | 3 | 29 | |
| 4 | 3 | 4 | 3 | 3 | 3 | 2 | 4 | 4 | 3 | 4 | 32 | |
| 5 | 3 | 4 | 3 | 4 | 3 | 3 | 4 | 3 | 2 | 3 | 33 | |
| 6 | 4 | 3 | 3 | 3 | 2 | 4 | 3 | 4 | 3 | 4 | 32 | |
| 7 | 4 | 3 | 2 | 3 | 3 | 4 | 4 | 2 | 3 | 4 | 33 | |
| 8 | 4 | 4 | 3 | 4 | 3 | 2 | 3 | 3 | 4 | 3 | 34 | |
| 9 | 4 | 3 | 3 | 3 | 4 | 2 | 3 | 4 | 4 | 4 | 26 | |
| 10 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 2 | 3 | 3 | 33 | |
| 11 | 4 | 3 | 4 | 4 | 3 | 3 | 2 | 3 | 4 | 3 | 32 | |
| 12 | 3 | 4 | 3 | 3 | 2 | 3 | 3 | 4 | 4 | 3 | 27 | |
| 13 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 32 | |

| Student | Mutual Cooperation Attitude statement item | | | | | | | | | | Amount | Maximum Score |
|--------------------|--|---|---|---|---|---|---|---|---|----|--------|---------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 14 | 3 | 3 | 2 | 3 | 4 | 3 | 3 | 3 | 4 | 4 | 33 | |
| 15 | 3 | 2 | 4 | 3 | 3 | 4 | 4 | 3 | 4 | 3 | 29 | |
| 16 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 35 | |
| 17 | 4 | 3 | 3 | 4 | 3 | 2 | 4 | 4 | 4 | 4 | 29 | |
| 18 | 3 | 4 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 30 | |
| 19 | 4 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 33 | |
| 20 | 4 | 4 | 3 | 4 | 3 | 3 | 3 | 2 | 3 | 4 | 32 | |
| 21 | 3 | 4 | 3 | 2 | 3 | 3 | 3 | 4 | 4 | 3 | 34 | |
| 22 | 4 | 3 | 4 | 3 | 2 | 3 | 4 | 3 | 4 | 3 | 33 | |
| 23 | 3 | 2 | 3 | 3 | 3 | 4 | 4 | 4 | 3 | 4 | 32 | |
| 24 | 4 | 3 | 4 | 2 | 3 | 3 | 3 | 3 | 4 | 3 | 32 | |
| 25 | 4 | 3 | 3 | 3 | 3 | 3 | 2 | 4 | 3 | 4 | 32 | |
| 26 | 4 | 4 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 4 | 32 | |
| 27 | 4 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 29 | |
| Post-Test Average | | | | | | | | | | | 31.74 | |
| Standard Deviation | | | | | | | | | | | 2.09 | |
| Variance | | | | | | | | | | | 4.38 | |

$$g = \frac{Sp_{post} - Sp_{pre}}{Smaks - Sp_{pre}}$$

with:

Sp_{post} = Final test value Sp_{pre} = Initial test value $= (M82 - M33) / (N6 - M33)$ n-Gain is 0.48.

4. DISCUSSION

The effectiveness of a learning model describes the success or success or failure of implementing the Tudang Sipulung Integrated Project Based Learning Model to achieve the expected goal, namely the formation of the character of mutual cooperation. The effectiveness of the Tudang Sipulug integrated project-based learning model can be seen from the results of observations made in the form of observations of students' activeness and learning abilities.

During the effectiveness trial, students' activities in the learning process illustrate observations of each learning stage referring to the Tudang Sipulug Integrated Project Based Learning Model because the implementation of learning has been outlined in all stages of learning from the introduction, the core which consists of seven phases, and the conclusion. During the effectiveness trial, the Mutual Cooperation Character of Students in the Tudang Sipulung Integrated Project Based Learning Model based on the assessment aspects given was in the medium category, namely 0.48. This means that the students' mutual cooperation character during learning after using the tudang sipulung integrated project-based model is as expected, so that the use of the tudang sipulung integrated project-based learning model is successful in cultivating the students' mutual cooperation

character in the classroom during the learning process.

5. CONCLUSION

The Tudang Sipulung integrated project-based learning model to improve the character of mutual cooperation at the elementary school level can be declared effective if it is seen based on student learning outcomes, and makes it easier for students to understand the material presented through the material used, as well as making it easier for teachers to use the model. the learning. The Tudang Sipulung integrated project-based learning model is very effective for teachers and students to use because this learning model can be applied online and offline, making it easier for teachers and students in the learning process.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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