

The Influence of the Implementation of the *Sipatuo Sipatokkong* Bugis Culture Integrated with the Problem Based Learning Model

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Abstract

This research is a quantitative and qualitative research (Mix Methods) using the Sequential Explanatory Design, located at Junior High School Number 3 Watampone, Bone Regency, South Sulawesi. The purpose of this study is (1) To know the differences in mathematics learning achievement before and after the *Bugis Culture Sipatuo Sipatokkong* is integrated with the Problem Based Learning Model (2) To know how far the influence of *Sipatuo sipatokkong* cultural values integrated into the Problem Based Learning model. Data analysis techniques use descriptive statistical techniques and inferential statistical analysis for quantitative data. Research results show that (1) There are significant differences in student learning achievement before and after being treated with the application the value *Sipatuo Sipatokkong* Bugis Culture integrated with the Problem Based Learning Model (2) Application of the *Sipatuo Sipatokkong* Bugis Culture integrated with the Influential Problem Based Learning Model especially on Student activities during learning can minimizing the existing weaknesses in the problem-based learning model. With Bugis Culture *Sipatuo Sipatokkong* students work together and help each other solve mathematical problems faced, so the students with moderate and low ability have motivation and interest in achievement and show the optimism in learning mathematics.

Keywords: *Problem Based Learning, mathematics learning, Bugis Culture, Sipatuo Sipatokkong*

1. Background

Two major challenges temporarily facing Indonesia are decentralization or regional autonomy which has now begun and the era of total globalization that will occur in 2020. Both challenges are tough tests that must be passed and prepared by all Indonesian people. According to Muslich (2010), one of the keys to success in facing these severe challenges lies in the quality of Indonesian human resources that are reliable and cultured.

As explained by NurliahSyahrul in an international seminar on cultural issues and national character is now a sharp spotlight on the community. Deviant behavior from students such as student fights, vandalism, drugs, sexual harassment, truancy, lack of discipline, as well as disrespectful behavior, disrespect for both friends and those around them is often done by students is very familiar with life they. Although various alternative solutions are proposed such as regulations, laws, increased efforts to implement and implement stronger laws for the general public and various sanctions for students who commit these violations have been carried out, but this cannot be used as a solution to the problem of cultural and character deviations (Syahrul, 2010).

Also visible were negative student behaviors in Junior High School 3 Bone Regency when learning took place cheating activities during exams, the use of language and words that were not polite, did not respect each other, showed ignorance of fellow peers and lacked confidence in working on the questions given (Darwis, 2013).

Based on research at Harvard University in the United States, it turns out that one's success is not determined solely by knowledge and technical skills (hard skills), but rather by the ability to manage themselves and others (soft skills). This research revealed, success is only determined about 20 percent by hard skills and the remaining 80 percent by soft skills. Even the most successful people in the world can succeed because they are supported more by soft skills than hard skills. This suggests that the quality of character education of students is very important to be improved (Sudrajat, 2010).

Education as a goal conscious and systematic effort in developing the potential of learners as much as possible and education as well as a deliberate business community and nation in order to prepare young people for the existence of a more dignified life in the future. Education is actually not separated from the environment of students, especially from the cultural environment, because students are an integral part of the surrounding environment. Education that does not introduce the student's permanent residence environment, is worried that it will cause students to be alienated from their cultural roots. And the essence of education is an enculturation process, which functions to pass on values to the younger generation. Those values are the wealth and pride of the nation so that they can be recognized by other nations.

Talking about mathematics which is a mental activity, so mathematical thinking activities cannot be released with cognitive activities. Human cognitive activities can only occur in the social and cultural environment. Constructivist experts assert that mathematics is culturally bound and filled with values of the inventors / users of mathematics in their cultural context. According to Vygotsky, "it appears that development cannot be separated from its social and cultural context, so the only way to explore mental processes is through understanding Vygotsky's concept of mediation that made a breakthrough in our understanding of learners' development".

Furthermore Kozulin, Gindis, Ageyev, and Miller said that "at the heart of Vygotsky's theory lies the understanding of human cognition and learning as social and cultural rather than individual phenomena", that Vygotsky's theory lies in the activities of human cognition and learning activities which prioritize social and cultural aspects rather than individual problems " (Eun, 2008; 136).

Culture can be seen as a totality of the results of thought and behavior owned by the community about the system or order that applies to social interaction in society and can be passed on from generation to the next generation through learning (Akib, 2008: 10).

It is undeniable that the culture of the Indonesian nation is enriched by local cultures. The local culture in this country upholds Godliness, humanity, and its existence in the universe. One of Indonesia's local cultures is the *Bugis* culture which is a pillar in the development of national culture. *Bugis* culture has important elements in the activities of community life, both in interacting with the surrounding community and in the life of the nation. The Bugis culture referred to in this study is *Sipatuo Sipatokkong* culture. This culture developed among the *Bugis* ethnic groups, both those living in South Sulawesi and those living overseas.

Sipatuo Sipatokkong is a concept that has an important role in decision making related to the problem solving process and how to foster relationships between fellow students and the relationship between students and teachers, so that the relationship can have a significant impact in building cooperation to improve learning achievement.

The observations began in the field that students of Junior High School 3 Watampone were still less active in solving mathematical problems provided by the teacher and there also appeared to be a lack of student involvement in conducting group discussions, especially for students with low ability (Junior High School 3 Bone)

The conditions that occur in the field indicate that mathematics teachers in schools in carrying out teaching and learning in the classroom have not been able to improve their mathematical knowledge and improve their ability to reason, communicate, and solve problems. Most of the habits of mathematics teachers still use traditional methods in the learning process are also still happening. They still use the paradigm of transferring knowledge from the teacher's brain to the student's brain (PPPPTK Mathematics, 2007: 48-49).

This condition results in students feeling bored, unmotivated, and having difficulty understanding the lesson. According to Suwarsono, (Suradi, 2005: 9) the difficulty of students in learning mathematics is inseparable from the teaching strategies that have been used in Indonesian schools, namely the classical teaching strategy with the lecture method as the main method.

Addressing these problems, according to Tan (Rusman, 2010: 245) problem-based learning (PBM) is an innovation in learning because PBM students' thinking abilities are truly optimized through systematic group or team work processes, so students can empower, hone, test, and develops the ability to think continuously.

Students choose interesting problems to solve so they are motivated to play an active role in learning. PBM has many advantages, but behind it there are some disadvantages, including: (1) when students have no interest or don't believe that the problem being studied is difficult to solve, they will feel reluctant to try (2) need enough time to prepare (3) In a class which has a high level of student diversity there will be difficulties in the distribution of tasks (4) Requires the ability of teachers who are able to encourage student work in groups effectively, meaning teachers must have the ability to motivate students well (Lidinillah, 2013).

Based on the above phenomenon, the importance of cultural values in this case Bugis culture by integrating the *sipatuo sipatokkong* culture to be adapted into the PBM model and learning tools (RPP) in junior high school mathematics learning, in order to foster affective values. Learning mathematics in schools until now still relies on the cognitive domain, so that the affective and psychomotor domains seem neglected. As for Research questions (1) Is there the differences in mathematics learning achievement before and after the *Bugis Culture Sipatuo Sipatokkong* is integrated with the Problem Based Learning Model? (2) How far is the influence of *Sipatuo sipatokkong* cultural values integrated into the Problem Based Learning model?

2. Method

This type of research is quantitative and qualitative research (Mixed Method) using Sequential Explanatory Design. Sequential explanatory model combination research methods are used because the data collection and analysis of quantitative data in the first stage, and followed by the collection and analysis of qualitative data in the second stage, in order to strengthen the results of quantitative research conducted in the first stage. The first stage of the research was conducted using quantitative methods to obtain quantitative data on differences in mathematics learning achievement before and after the *Bugis Culture Sipatuo Sipatokkong* was integrated with the Problem Based Learning Model. Furthermore, the second stage of the research was carried out using qualitative methods to prove, deepen and broaden the quantitative data that had been obtained through quantitative research, to assess the extent to which *Sipatuo sipatokkong's* cultural value was influential in the Problem Based Learning model, exploring student activities and teacher activities.

This research uses Mix Methods, this study uses several instruments. To collect data in the framework of this study used research instruments, in the form of (i) learning achievement tests; (ii) observation sheet of student activities; (iii) teacher observation sheet; and (iv) student's response questionnaires and qualitative research make the researchers themselves research instruments.

Quantitative data collected in the study were analyzed using descriptive statistical techniques and inferential statistical analysis. To help the calculation of data analysis that is processed with descriptive statistics and inferential statistics and also uses the analysis of the index gain data while for qualitative data analysis models are used Miles and Huberman (Sugiono, 2010: 33).

3. Results & Discussion

Description of Student Learning Achievement

Tabel 1. Distribution of frequency of student achievement before PBM learning *Bugis* culture

| Value | Category | Frequency | Percentage (%) |
|----------|-----------|-----------|----------------|
| 0 – 39 | Very Low | 18 | 64,28 |
| 40 – 59 | Low | 10 | 35,72 |
| 60 – 74 | Medium | 0 | 0 |
| 75 – 90 | High | 0 | 0 |
| 91 – 100 | Very High | 0 | 0 |
| Total | | 28 | 100 |

Tabel 2. Frequency distribution of student achievement after learning PBM *Bugis* culture

| Value | Category | Frequency | Percentage (%) |
|----------|-----------|-----------|----------------|
| 0 – 39 | Very Low | 0 | 0 |
| 40 – 59 | Low | 0 | 0 |
| 60 – 74 | Medium | 7 | 25 |
| 75 – 90 | High | 19 | 67,86 |
| 91 – 100 | Very High | 2 | 7,14 |
| Total | | 28 | 100 |

Tabel 3. Categories of the average value of student learning achievement

| | Average value | Rounding average | Category | Position average value |
|----------------|---------------|------------------|-----------|------------------------|
| <i>Pretest</i> | 33,57 | 34 | Very Less | 0 – 39 |
| Posttest | 80,71 | 81 | Height | 75 – 90 |

Analysis of Development of Learning Achievement

Analysis of the development of learning achievement in the experimental class with the PBL model of Bugis Culture use gain index (N-Gain) data analysis. The results obtained:

$$g = \frac{80,71 - 33,57}{100 - 33,57} = 0,71$$

In accordance with the criteria for the level of gain according to Hake if $g > 0.7$ then N-Gain is included in the high category.

Hypothesis Testing

Based on the results of the t-test with SPSS 20.0 in the table obtained p value (Seen in Sig. (2-tailed)) is 0,000, meaning p value ≥ 0.05 . Thus according to the criteria in chapter III the hypothesis H₀ is rejected or H₁ is accepted which means there are differences in student achievement before and after being taught with a problem-based learning model with the *Bugis* culture *Sipatuo Sipatokkong*.

The influence of Sipatuosipatokkong cultural values in the Problem Based Learning model

Both pretest and posttest were given PBL treatment. *Sipatuo Sipatokkong* explained that the influence of Bugis cultural values in problem-based learning models had an impact on student achievement as a whole as well as at each level of ability. The description that with the cultural value of *Bugis sipatuo sipatokkong* in problem-based learning, gives an influence on improving learning achievement, especially in students of moderate and low ability. Students with each learning achievement ability will be better, in the sense that students with high ability will get smarter and lower ability will have an increased achievement "approaching" the ability of students who are smarter. This shows that one of the weaknesses in problem-based learning that the learning difficulties of students with low ability can be overcome.

The basic principle of Vygotsky is social interaction (between adults, peers with the environment) and student ZPD recognition. Furthermore, adults or peers are better able to guide children to activities. Then they share assignments, children complete assignments and adults (teachers) correct and guide children when they have difficulty. And finally adults give full responsibility to the children to understand and explore the mathematical concepts found. The concept found by Vygotsky is in line with the principle of *sipatuo sipatokkong*, which implies brotherhood which is a willingness to help fellow humans, especially those who experience difficulties. This principle in the bugis expression "*mali siparappe, rebba sipatokkong, malilu sipakainge*" means "drifting to save each other, collapsing each other up, forgetting to remind each other".

4. Conclusion

Student achievement in class VIII Junior High School 3 Watampone shows the differences before and after being taught with a problem-based learning model with the *Bugis* culture *sipatuo sipatokkong*. The average development of student learning achievement before and after teaching this model between high, medium and low ability students all increases and the variation in the difference gets smaller. Improved learning achievement of each student, especially students who have lower abilities approach higher abilities and are supported by the analysis of gain index data (N-Gain) which are included in the high category.

The cultural value of *Sipatuo sipatokkong* has an influence on the problem based learning model. With the integration of the cultural values of *sipatuo sipatokkong*, it has an influence on improving learning achievement, especially in students of moderate and low ability. Students get better learning achievement, in the sense that high-ability students will get smarter and low-ability students will improve their performance "closer" to the ability of students who are smarter. The culture of *sipatuo sipatokkong*, established active communication between group members specifically to students of low ability so that they have motivation in solving problems and positive, optimistic and responsible images, as well as seen in the efforts of teachers to be able to encourage student work in groups effectively, meaning teachers have the ability to motivate students well.

5. Citation and References

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