The Analysis of Students' *Rakat Mufakat* Character Through the Application of Local Wisdom-Integrated Module on Heat and Temperature Topic

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Abstract

Rakat mufakat is defined as a form of unity in social life which goes hand in hand with deliberation. This descriptive quantitative study aimed to describe the character of *rakat mufakat* owned by students by applying a local wisdom-integrated module on heat and temperature topic. The research subject was 25 students of class X-6 in SMA Negeri 1 Angkinang, Kandangan city, which was assigned by using purposive sampling technique. The attainment of *rakat mufakat* character was analyzed by observation sheet filled out by two observers. The character of *rakat mufakat* consist of tolerance, democracy, and communicative. The measured indicators in this study were giving opportunities to state opinion, willing to accept different opinion, adapting to deliberation, and giving opinions while working in team. Generally, the attainment of *rakat mufakat* character in the form of average score was 3,47 with the percentage of 87% categorized as very good, while the attainment of *rakat mufakat* character in every meeting kept increasing with the attainment of 10% categorized as sufficient, 31% categorized as good, and 59% categorized as very good. It shows that the application of local wisdom-integrated module on heat and temperature topic can train the character of *rakat mufakat* to students. The insertion of the character is important to conserve local cultural values.

Keywords: Character; Local Wisdom; Module; *Rakat Mufakat*

INTRODUCTION

Physics is a branch of natural science which consists of several basic concepts related to phenomena that occur in everyday life (Kurniawan, Bektiarso, & Subiki, 2012). Suastra (2010) explained that in science learning, there needs to be a balance between knowledge and the cultivation of scientific attitudes and values contained in the local wisdom of the local community so that students can actually feel the benefits of learning.

Local wisdom is a view of life, knowledge and various life strategies that are manifested in local community activities to answer various problems regarding the fulfillment of the community members' needs (Fajarini, 2014). Local wisdom is also defined as a form of local wealth in the form of beliefs, knowledge, norms, culture, customs, insights, and so on that are inherited and maintained so that they become an identity and guide to teach how to act appropriately in living life (Utari, Degeng, & Akbar, 2016)

Local wisdom that exists in Indonesia needs to be explored and studied so that it can develop in various aspects of life (Martawijaya, 2015). Exploring the values contained in local wisdom is an effort to build the nation's character (Wagiran, 2012).

Wibowo and Gunawan (2015) explained that extracting the values contained in local wisdom was in line with the recommendations from UNESCO. If the character values are taken from the cultural values that are known by and familiar to students, it will be easy for them to use them as the basis of behavior in everyday life.

Character education for students is defined as a process that can be used to instill various character values, especially those of which are related to the social and cultural environment that surrounds students (Omeri, 2015). Therefore, it is important to apply character education in a learning process that can be integrated with the character values contained in the local wisdom of the local community.

The school targeted in this study is in the South Hulu Sungai Regency area which is famous for its local wisdom of making *Kandangan dodol*. The process of making *Kandangan dodol* contains noble values used as the basic values by Kandangan community members in carrying out activities known as *rakat mufakat*. According to the profile of South Hulu Sungai Regency (2003), *rakat mufakat* is defined as a form of unity in social life which goes hand in hand with deliberation. This is in line with the 18 values that form the nation's character derived from religion, Pancasila, culture, and national education goals, which are tolerance, democracy and amiability/communicative.

Based on the observation result of the learning process and the use of a non contextual modules, as well as the interviews with physics teachers at SMA Negeri 1 Angkinang, it was known that the learning process that emphasized the mastery of characters, especially characters related to local wisdom (*rakat mufakat*) had not been optimally implemented so that students barely felt the relevance of the material being studied at school with things happening in their environment.

As there is a connection between the heat and temperature topic and the process of making *Kandangan dodol*, it supports the learning related to local wisdom which further can train the character of *rakat mufakat*. Therefore, to connect the characters related to local wisdom and physics subject matter in the world of education, it is necessary to apply a learning module that can bridge the two things. One way that can be done is to apply the local wisdom-integrated physics module to train the character of *rakat mufakat*. This is also a novelty in this research that the application of local wisdom-integrated physics module on heat and temperature topic was to train the character of *rakat mufakat*. The purpose of this research was to describe the students' character of *rakat mufakat* on the heat and temperature topic by applying a local wisdom-integrated physics module.

METHOD

The type of this research is descriptive quantitative which aimed to analyze (describe the size and frequency) of the data obtained in the study. The subject in this research was 25 students of class X-6 in SMA Negeri 1 Angkinang, Kandangan city, which consisted of 8 male students and 17 female students. The sampling technique used was purposive sampling.

The data collection technique used observation sheet on the attainment of *rakat mufakat* character, which was filled out by two observers, with the assessed aspects of *rakat mufakat* character (reviewed from the observed character indicators) on every meeting during the learning activity. The number of meetings set in this research was as many as four meetings. The character of rakat mufakat consist of tolerance, democracy, and communicative. The observed indicators in the character of *rakat mufakat* were giving friends the opportunities to state different opinion, willing to accept different opinion,

adapting to deliberation, and giving opinions while working in team. The scoring in observation sheet to the character of *rakat mufakat* used the scale of 1 to 5 which then the total score being adapted with the categories shown in Table 1 (Widiyoko, 2016).

Table 1 The Character Attainment Criteria of *Rakat Mufakat*

No.	Score Interval	Category
1.	$X > 3,2$	Very good
2.	$2,4 < X \leq 3,2$	Good
3.	$1,6 < X \leq 2,4$	Sufficient
4.	$0,80 < X \leq 1,6$	Deficient
5.	$X \leq 0,80$	Very deficient

The instrument used was a research instrument developed by Resy, Wati, & Misbah (2017) with the results of expert validation on the content quality aspect of 3,27 with a good validation category. Meanwhile, the reliability of the instrument used was 0,68 with a sufficient degree of reliability. So, it can be stated that the instrument used was valid and reliable.

RESULT AND DISCUSSION

This study used a physics module that integrated with the local wisdom of the South Hulu Sungai Selatan regency which is the making of Kandangan dodol related to the heat and temperature topic. In addition to containing material coverage and practice questions, this module was equipped with an introduction to the making of Kandangan dodol, the philosophy of the *rakat mufakat* character in making Kandangan dodol, and was enhanced by the addition of a *rakat mufakat* character corner in which this section in the student worksheet was designed in such a way so that the experiments carried out by students were relevant to the local wisdom of making Kandangan dodol which taught the character of *rakat mufakat* for students. The following is a display of the module cover and the *rakat mufakat* character philosophy shown in Figure 1.

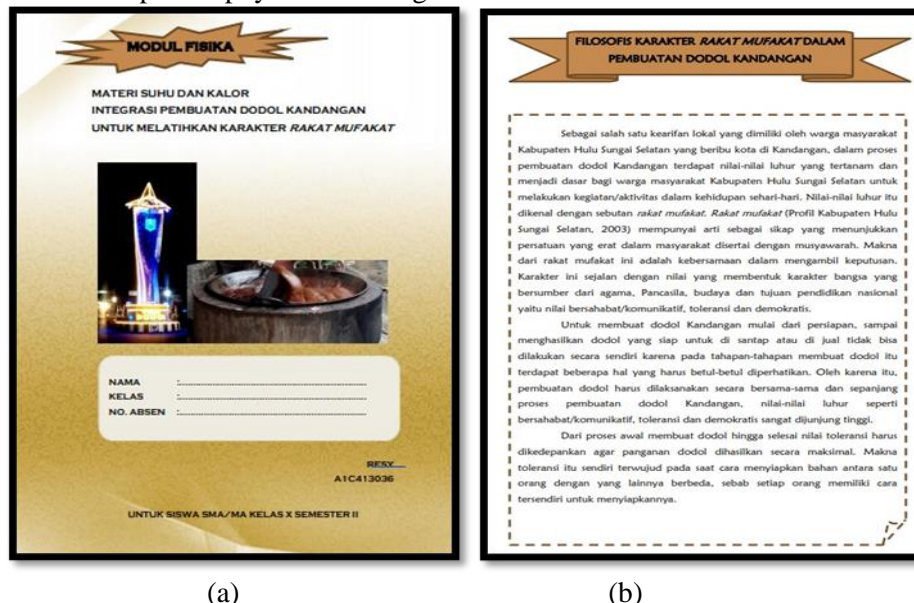(a)   (b)

Figure 1 (a) Module Cover and (b) *Rakat Mufakat* Character Philosophy

The following is the display of the material and character corners on the heat and temperature module that integrates local wisdom as shown in Figure 2.
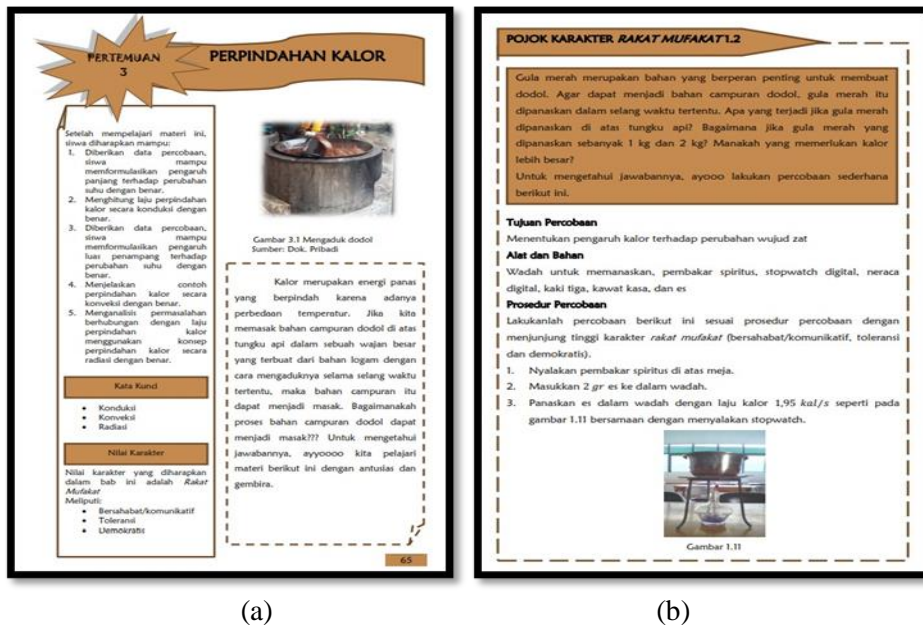
(a)   (b)

Figure 2 (a) Material and (b) *Rakat Mufakat* Character Corner

This module was used for four meetings, in which at each meeting the students conducted an experiment to train the character of *rakat mufakat*. In conducting the experiment, students were divided into small groups consisting of 4 – 5 students. When students conducted experiments in groups, the measurement of the *rakat mufakat* character was carried out by two observers who observed according to the aspects of indicators that have been set on the observation sheet, for each observer to observe three experimented groups. As mentioned earlier that the attainment of the *rakat mufakat* character is based on four aspects of indicators that represent the character, which are the attitude of tolerance shown by giving opportunities for friends to express their opinions and being willing to accept different opinions from friends, democratic attitudes are shown by getting used to deliberation with friends, and a friendly/communicative attitude shown by giving opinions in group work in class. This research has been done to describe the results of the attainment of *rakat mufakat* character obtained during four meetings through observation sheets made by observers with the scoring given in a range between 1 – 5, then the score range was calculated for each student to determine the category of the attainment of *rakat mufakat* character as shown in Table 1. Generally, the attainment result of *rakat mufakat* character is shown in Table 2.

Table 2. The attainment of *rakat mufakat* character

Meeting	Average Score	%	Category
I	3,12	78%	Good
II	3,36	84%	Good
III	3,64	91%	Very good
IV	3,76	94%	Very good

Meanwhile, the attainment result of *rakat mufakat* character for each meeting is shown in Figure 3.
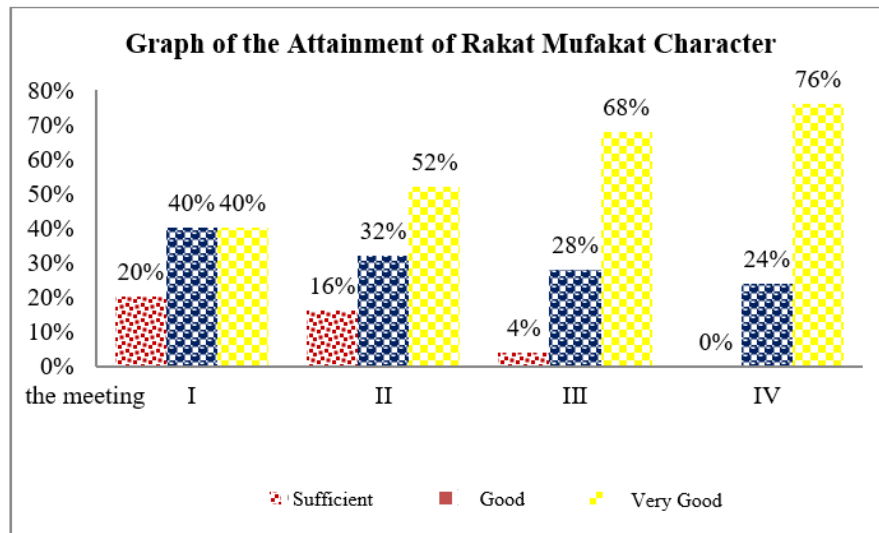
Figure 3 The attainment of *rakat mufakat* character

In Figure 3, it is known that the attainment of the *rakat mufakat* character of students which was included in the sufficient category continued to decline, which was originally 20% at the beginning of the meeting, while at the end of the meeting there were no students who were in the sufficient category. Similar thing goes to the attainment of *rakat mufakat* character, which was in the good category, it experienced a decrease from 40% at the first meeting and changed to 24% at the fourth meeting. However, the increase occurred in the percentage of students' attainment of *rakat mufakat* character with very good category, at the beginning of the meeting by 40%, it then increased to 76% at the end of the meeting. So, it can be concluded that in general, the attainment of *rakat mufakat* character generated in this study was the average score of 3.47 with a percentage of 87% categorized as very good, while the average attainment of the character for the four meetings was 10% in the sufficient category, 31% in the good category, and 59% in the very good category. Overall, this shows that the use of physics modules on heat and temperature topic that integrates local wisdom is very good for training the character of the *rakat mufakat*.

This is because during the learning process by applying the local wisdom-integrated physics module, students were continuously trained and accustomed to behaving in accordance with the purpose of the module which was to train students the *rakat mufakat* character. The achievement of the objectives of this module was carried out through the student worksheets contained in the *rakat mufakat* character corner, in which students were asked to work in groups to solve the problems presented. This problem-solving process done in groups trained students to have the character of *rakat mufakat* in determining the formulation of problems that were in accordance with the objectives of the experiment, determining the formulation of hypotheses, determining experimented variables, obtaining experimented data, analyzing data, drawing conclusions, and completing consolidation exercises given on the student worksheet. All of this, of course, cannot be separated from the four aspects (providing opportunities for friends to express different opinions, being willing to accept different opinions from friends, getting used to discussing with friends, and giving opinions in group work in class) which are observed. In a group, sometimes there are differences in opinion between one member and another, therefore, it is necessary to have an attitude of tolerance shown by accepting different opinions and providing opportunities for friends to express their opinions, a

friendly/communicative attitude shown by giving opinions in group work in class, and a democratic attitude shown by getting used to deliberation to solve problems. These three attitudes are the basis for the formation of *rakat mufakat* character which definitely does not take place instantly or directly but gradually, starting from the training, then becoming trained, and finally becoming a habit.

This is in line with Yaumi (2014) who stated that a character was created from habits that resulted from the behavior and attitudes of the individual himself. Moreover, Mannan, Sopyan, & Sunarno (2015) and Mardyansyah, Asrizal, & Yulkifli (2013) stated that the learning tools which were developed based on local wisdom could be used to train and improve the positive character of students. So, it can be concluded that the application of a local wisdom-integrated module is able to train characters related to local wisdom, one of which is the *rakat mufakat* character. Therefore, the learning that emphasizes on the character education is more optimal. Optimal learning will be achieved when students are introduced to local wisdom around them (Wati & Misbah, 2020; Wati, Hartini, Lestari, Annur, & Misbah, 2019; Wati, Misbah, Haryandi, & Dewantara, 2020). This is in line with the research conducted by Misbah, Hirani, Annur, Sulaeman, & Ibrahim (2020) which stated that physics modules that were integrated with local wisdom could be used to grow character in students. In line with Hartini et al., (2018) who also stated that the physics module on temperature and heat material based on local wisdom could be used to trace the character of the students. Mastuang, Misbah, Yahya, & Mahtari (2019) also stated that modules that were integrated with local wisdom could in fact be used to train the character of students. Subsequent research also stated that local wisdom-based modules could be used to develop character and build students' character to suit cultural values. (Hartini et al., 2018; Oktaviana, Hartini, & Misbah, 2018; Wati, Putri, Misbah, Hartini, & Mahtari, 2020). In addition, Zainuddin & Misbah (2020) stated that the use of modules that were integrated with local wisdom could be used in the learning process because students could understand local knowledge and wisdom, so that students get direct learning experiences with the conditions and culture in the surrounding environment.

CONCLUSION

The application of the physics module that integrates local wisdom can be used to train the character of *rakat mufakat* on students with the findings on the first meeting was the attainment of *rakat mufakat* character was included in the good category with 20%; while for those who were included into the good and very good categories, 40% for each category. The attainment of *rakat mufakat* character for the second meeting was 16% in the sufficient category, 32% in the good category, and 52% in the very good category. The third meeting, for the attainment of *rakat mufakat*, the consensus produced was 4% in the sufficient category, 28% in the good category, and about 68% in the very good category. Furthermore, at the fourth meeting, it was found that the attainment of *rakat mufakat* character in the good category was 24% and 76% due to very good geography. So, it can be concluded that in general the attainment of *rakat mufakat* character produced in this study is the average score of 3.47 with a percentage of 87% categorized as very good, while the average attainment of *rakat mufakat* character for the four meetings that have been carried out was 10% in the sufficient category, 31% in the good category, and 59% in the very good category. The insertion of the *rakat mufakat* character in the learning process should be prepared as well as possible so that the learning process that occurs is as expected, besides the results of this study can be used as a reference in future research.

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