



Reflection on Local Wisdom Oriented Online Learning and Peer Assessment

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Abstrak

Tujuan penelitian ini adalah untuk meningkatkan karakter dan prestasi belajar matematika siswa melalui pembelajaran daring berorientasi kearifan lokal dan penilaian teman sebaya. Penelitian ini adalah penelitian tindakan kolaboratif selama 12 minggu dengan dua orang guru. Subyek penelitian ini adalah siswa yang berjumlah 61 orang. Objek yang diteliti dalam penelitian ini adalah karakter positif siswa meliputi rasa ingin tahu, sikap kritis dan sikap disiplin, dalam proses pembelajaran. instrumen yang digunakan dalam penelitian, ini adalah seperti RPP, rubrik penskoran, lembar observasi, dan tes prestasi belajar matematika. Penelitian ini dilaksanakandalam 2 siklus. Data karakter siswa dikumpulkan dengan lembar observasi, dan prestasi belajar dengan tes prestasi belajar. Untuk melihat validitas instrumen, sebelum digunakan terlebih dahulu dilakukan uji pakar oleh dua orang dosen. Data mengenai karakter setiap siswa diperoleh berdasarkan skor dari hasil perhitungan poin yang diperoleh melalui lembar observasi. Data hasil pengamatan dan tes prestasi belajar dianalisis secara deskriptif. Hasil penelitian menunjukkan bahwa pembelajaran daring berorientasi kearifan lokal dengan penilaian teman sebaya berhasil meningkatkan karakter dan prestasi belajar matematika siswa. Di samping itu, juga ditemukan beberapa kendala dalam pembelajaran seperti ada 5 % siswa yang telat dalam mengumpulkan tugas, dan selalu ada siswa yang tidak bergabung dalam pertemuan tatap maya, maupun saat diskusi melalui WAG.

Kata kunci: Kearifan Lokal, Penilaian Teman Sebaya, Prestasi Belajar

Abstract

This study aims to improve the character and achievement of students' mathematics learning through online learning oriented to local wisdom and peer assessment. This research is collaborative action research for 12 weeks with two teachers. The subjects of this study were students as many as 61 people. The object studied in this study was the positive character of students including curiosity, critical attitude, and discipline, in the learning process. The instruments used in this research were lesson plans, scoring rubrics, observation sheets, and mathematics learning achievement tests. This research was carried out in 2 Cycles. Student character data was collected using observation sheets and learning achievement was collected by learning achievement tests. To see the validity of the instrument after being used, an expert test was conducted by two lecturers. Data on the character of each student were obtained based on the score from the calculation of points obtained through the observation sheet. Data from observations and learning achievement tests were analyzed descriptively. The results showed that online learning oriented to local wisdom with peer assessment succeeded in improving students' character and learning achievement in mathematics. Furthermore, there were also some obstacles in learning such as 5% of students who were late in submitting assignments and there were students who did not join virtual face-to-face meetings or during discussions through WAG.

Keywords: Local Wisdom, Learning Achievement, Peer Assessment

History:

Received : January 20, 2021

Revised : January 22, 2021

Accepted : March 29, 2022

Published : April 25, 2022

Publisher: Undiksha Press

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1. INTRODUCTION

Learning is an activity that involves interaction between teachers and students to achieve educational goals. Good and quality learning is to foster student activity, motivation, and interest in learning belajar (Asri Devi, 2020; Idris & Sida, 2019). However, the outbreak of the covid-19 virus causes a change in the learning process to switch the online learning (Safriyani, Wakhidah, & Supriyanto, 2021; Suhendro, 2020). Online learning is a learning system that utilizes a digital platform with the assistance of the internet that is carried out

without face-to-face contact between teachers and students (Asmuni, 2020; Fitriyani, Fauzi, & Sari, 2020). Online or online learning is generally done by teachers through whatsapp groups, geole meet or google classroom (Ayudia, Febrialismanto, & Solfiah, 2020; Harahap, Dimiyati, & Purwanta, 2021). Therefore, all components involved in the implementation of learning, schools, teachers, and students, must adapt the application of online learning to create an active and effective atmosphere so that the expected learning objectives can be achieved.

However, the change from face-to-face learning to online learning causes limited interaction between teachers and students (Fauzy & Nurfauziah, 2021; Kalogeropoulos, Roche, Russo, Vats, & Russo, 2021). It causes students' motivation and learning outcomes tend to be low (Basa & Hudaidah, 2021; Yunitasari & Hanifah, 2020). Online learning does not give the same results and sometimes shows contradictory results (Baltà-Salvador, Olmedo-Torre, Peña, & Renta-Davids, 2021). Especially in Bali, online learning is not widely applied in its entirety and systematically for various reasons (Dewi, Kartika, Mahayukti, & Annaputri, 2021). Online learning does not provide better success for students, it is very dependent on many things such as school readiness and infrastructure, teacher competence, and the platform used (Lalima & Dangwal, 2017; Wu & Chen, 2017). There are doubts about the quality and effectiveness of online discussions and worrying that online discussions tend to be difficult to build higher order thinking skills (HOTS) there are some indications that in online discussions students are limited to only reading the sources provided, then restating what they read in the discussions without critical thinking (Tucker, YoungGonzaga, & Krause, 2014; Zeng, Gao, & Wu, 2014). Another obstacle is that teachers find it difficult to integrate character education into the learning process.

Due to current demands and conditions, online learning must be carried out even though it is realized that online learning has its problems, therefore a teacher must be smart in planning and implementing mathematics learning to be meaningful and can foster a positive student character because not a few students who feel the difficulty in understanding the material because mathematics is still considered difficult with an inappropriate learning process (Pratiwi & Wiarta, 2021). Learning mathematics in schools is not only intended to equip students to master mathematics and apply it in everyday life. However, learning mathematics should also help build students' positive character. The character values in mathematics learning are honest, disciplined, creative, communicative, responsible, curious, independent, and hardworking (Sari, Yetti, & Hapidin, 2020). In line with this, it is expected to emerge from the thoughts of a teacher, to design learning that allows in it some activities that can support the growth and development of character values that exist in students. The solution that can be done is to carry out online learning oriented to local wisdom and peer assessment.

Implementing character education in students requires special strategies such as designing learning that can bring up and develop appropriate character values. The truth of character education in the context of Indonesian education is value education, namely education of noble values originating from the culture of the Indonesian nation itself, especially Bali to foster the personality of the younger generation (Nida, Parmiti, & Sukmana, 2020; Palunga & Marzuki, 2017). Therefore, the development of character education must be able to be integrated with all lessons and can be implemented at various levels of education (Hakam, 2018). Learning is associated with local wisdom values that are rich in noble character values. Local wisdom is the values, norms, and prices that run in a society (Kormasela, Dawud, & Rofi'uddin, 2020). Mathematics learning takes place inseparable from the context and values of local wisdom adopted in the local community. Some of the local wisdom values possessed by the Balinese people that deserve to be used as principles in carrying out character learning are the teachings of *Tri Kaya Parisudha* (three

purified actions, namely: thinking well, saying good, and doing good), and the *Tat Twam Asi* Teachings. (I am you and you are me). The reason for the association of local wisdom in learning is to develop good character in students such as respecting teachers and other students also including lessons, curiosity, and discipline. The integration of local wisdom-oriented character education into teaching materials affects increasing students' soft skills. To foster character values, students must be able to interact with friends, teachers, the environment, and the community.

In online learning, peers have a very big impact on fostering active interactions. Peers are the closest people who can play a role in forming the character of children or students in their social environment (Susanto & Aman, 2016). In the adolescence period, students spend a lot of time interacting in peer groups. Peer interaction is very important in building adolescent behavior. In their mid-teens, when children begin to know their friends, children are ready to cooperate and reach an agreement, tolerance, mutual trust, and cooperation, and have an intimate closeness. Therefore, knowledge of skills (tool-knowledge) is needed so that students can independently, seek, and acquire new knowledge, while the teacher acts as a presenter and motivator for students to improve the quality of forming students' attitudes and character. This mastery will make it easier for students to acquire new knowledge that supports students' independent learning abilities. Peer assessment can train students as observers who can cultivate honest, responsible, assertive, objective, and confident characters. Learning oriented to local wisdom and peer assessment will be able to help students grow positive characters themselves. Previous research has shown that the application of the REACT learning strategy oriented to local wisdom has a positive effect on students' mathematical problem-solving abilities and qualitatively the positive character of students has increased and is classified as positive (Wijaya, Mahayukti, Gita, & Parwati, 2020). Previous research has shown that the use of peer assessment can have an impact on improving student learning outcomes and there are differences in learning outcomes between the initial test and the final test. The use of peer assessment is very helpful in building students' sense of responsibility in learning, self-monitoring in learning activities, instilling awareness to improve self-efficacy, and building logical arguments (Ratminingsih, Artini, & Padmadewi, 2017). Another impact that arises is that students feel motivated to continue learning, enjoy learning, and motivated to look for something better. The purpose of this study is to improve the character and achievement of students' mathematics learning through online learning oriented to local wisdom and peer assessment. It is expected that online learning makes the teacher use the right method to improve and develop the interactions and characters possessed by each student.

2. METHODS

This research is collaborative. The subjects of this study were students of class VIII B of SMPN 4 Singaraja and class VIII A of SMPN 5 Singaraja in the odd semester of the 2020/2021 school year. There were 30 students in class VIII B of SMPN 4 Singaraja and 31 people in Class VIII A of SMPN 5 Singaraja. The object studied in this study is the positive character of students including curiosity, critical attitude, and discipline, in the learning process. The learning material discussed during the research was flat shapes. Before the research was conducted, the researchers and teachers had to equalize perceptions regarding the applied learning model. Develop instruments used in research, such as lesson plans, scoring rubrics, observation sheets, and mathematics learning achievement tests. In learning activities in lesson plans and online, the teacher always conveys the importance of understanding and implementing local wisdom such as *Tri Kaya parisudha* and *Tat Twam Asi* in life, so that it becomes a habit. Like the Chinese proverb, something that is always

heard, seen, and implemented will be embedded in the students' minds, and with the habituation method of the positive character of students will grow. This research was carried out in two Cycles. Student character data were collected using observation sheets and learning achievement by learning achievement tests. To see the validity of the instrument before being used, an expert test was conducted by two Undiksha Mathematics Education lecturers. After being analyzed with the Gregory formula, the instrument was valid. Data on the character of each student were obtained based on the score from the points calculation obtained through the observation sheet. Data from observations and learning achievement tests were analyzed descriptively.

3. RESULTS AND DISCUSSION

Result

Student Characteristics

In implementing PBM oriented to local wisdom and peer assessment, the positive characteristics developed in the research include curiosity, critical attitude, and discipline. The achievement of character values is stated in qualitative statements as follows: (1) BT: Not Visible (if students have not shown the initial signs of behavior stated in the indicators), (2) MT: Starting to be Visible (if students have started to show signs of -early signs of behavior stated in the indicators but not yet consistent), (3) MB: Begins to Develop (if students have shown various behavioral signs stated in the indicators and starting to be consistent), (4) MK: Cultivated (if students continue to show behavior expressed in the indicators consistently). The average positive character scores of students in Cycles I and II are presented in [Table 1](#) and [Table 2](#).

Table 1. Average score of student characteristics in class VIII B SMPN 4 Singaraja

No.	Characteristics	Percentage							
		Cycle I				Cycle II			
		BT	MT	MB	MK	BT	MT	MB	MK
1.	Curiosity	33.3	46.7	26.7	0	28.7	50	33.3	0
2.	Critical attitude	26.7	33.3	30	0	20	40	26.7	0
4.	Discipline	6.7	50	20	0	6.7	53.3	23.3	0
Average									

Table 2. Average score of student characteristics in class VIII A SMPN 5 Singaraja

No.	Characteristics	Percentage							
		Cycle I				Cycle II			
		BT	MT	MB	MK	BT	MT	MB	MK
1.	Curiosity	38.7	45.2	25.8	0	25.8	32.3	25.8	0
2.	Critical attitude	32.3	35.5	29	0	32.3	19.4	32.3	0
4.	Discipline	9.7	50	19.4	0	6.5	51.6	22.9	0
Rata-rata		21.5	46.3	24.9	0	17.8	41.9	27.5	0

Learning Achievement

The average mathematics learning achievement scores of class VIII B students of SMPN 4 Singaraja in Cycle I and II were 77.5 and 81.5. For class VIII A students of SMPN 5 Singaraja in Cycle I and II, 74.5 and 80.3. In graphical form, it can be shown in [Figure 1](#).

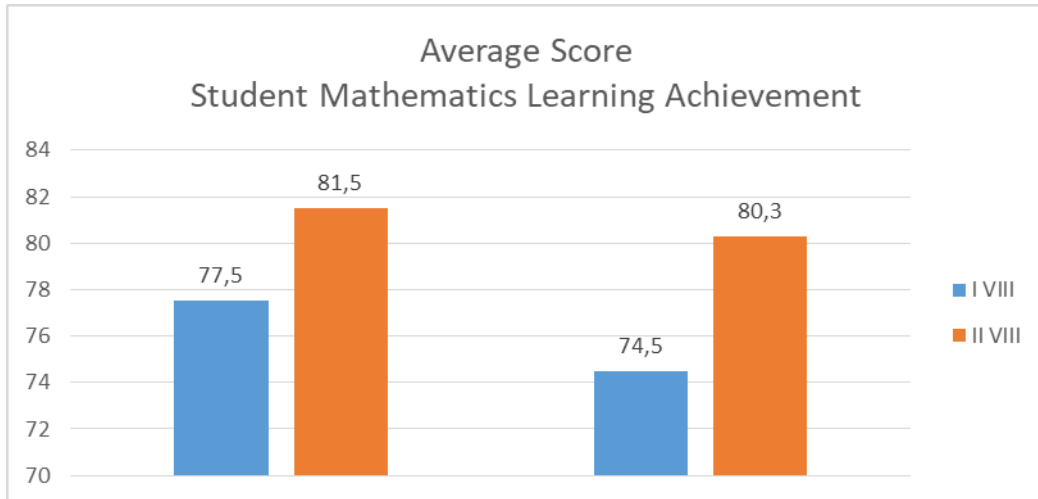


Figure 1. Average Score of Student Mathematics Learning Achievement

The results of the reflection in Cycle I can be described as follows. The results of the action in Cycle I showed that the average positive character formed in students at SMPN 4 Singaraja was 19.5% of students had not seen positive characters, 52.8% of students had started to see, and 25% of students had started to develop positive characters. There were no students whose positive character had become a habit or culture. For students at SMPN 5 Singaraja, there were 21.5% of students who had not seen their positive characters, 46.3% had started to see their positive characters, there were 24.9% of students who had started to develop their positive characters, while the entrenched character did not exist. It is understandable because the formation and development of student positive character cannot change in a short time.

The results of the action in Cycle II showed that the average positive character of SMPN 4 Singaraja students was 14.2% of students who had not shown positive character, there were 61.7% of students who grew their positive character and 29.9% of students who started to develop positive character, but there were no students whose positive character was entrenched. These results strengthen the success of the action as an effort to increase the positive character of students and student achievement in learning mathematics. Based on the results above, the actions in Cycle II need to be continued by continuing the improvements including making observation sheets and scoring rubrics for face-to-face discussion activities throughout the room, making question or comment forms for students so that the data were better recorded and informing aspects Assessments were carried out by students to encourage students to contribute more to discussions, and peer assessments. Giving the different but still equivalent problems to different groups so that they can enrich class knowledge and also avoid plagiarism of other groups' ideas and swap discussion groups for variations and students who get less experience and a new atmosphere in the discussion.

The obstacles found during online learning oriented to local wisdom with peer assessment are as follows. From the teacher's point of view, the lesson plans made cannot be implemented according to plan, some changes are depending on the situation at that time, therefore the syntax of the model used cannot run smoothly, and online the teacher cannot perform the task as a facilitator, especially during group discussions and students were not always fully able to attend face-to-face meetings through room meetings, citing signal interference, or running out of quota. In terms of students, there were about 20% of students whose parents were traders or work laborers complain that there is no one to guide their study at home, group discussions are also difficult because not all of them have supporting

facilities, and students feel uncomfortable when asking if something is not understood, and 80 % of students in both schools stated that they prefer to study offline. In conducting peer assessments, there were also 5% of students in both schools who were still having difficulties, even though an assessment rubric had been given, and at the beginning of peer assessment, students tend to give higher scores than they should, especially when they had not been given a rubric but in cycle II there was an improvement, although there were still 3 students who gave a higher score than the teacher.

Discussion

The positive results of this research are very reasonable and can be explained as follows: Although online learning is not as varied as offline learning, teachers always try to choose a learning model that maintains student activity to keep online learning warm and meaningful. The learning model used in this study provides learning materials in the videos and written materials in the form of worksheets. The material is sent via WAG or Google Classroom so that students can open it at any time. It is very helpful for students in two ways, namely: a) flexibility in terms of time and place to study, also in terms of how often the learning videos can be observed (Dharma & Sudewiputri, 2021; Pakpahan & Fitriani, 2020), b) explanation of video tutorial material in a structured manner and using a dialogical expository approach and associated with local wisdom. It can help students understand the material well and the concepts of *trikaya parisudha* and *tattwam asi* are embedded in the minds of students, which automatically trains students to always do good, such as discipline and honesty. These two things give students confidence and curiosity so that they are better prepared when they face virtual reality (Jundu, Jehadus, Nendi, Kurniawan, & Men, 2019; Santhalia & Sampebatu, 2020).

Improved character and student achievement can be achieved in local wisdom-oriented learning and peer assessment because this learning begins with real problems to stimulate students' curiosity, peer assessment encourages students to be honest, and disciplined as well as responsible, plus local wisdom that is always reminded by the teacher. and getting used to it while online causes students to be increasingly trained to develop heart abilities and responsibilities. Students who have a high willingness to solve problems are called responsible people, and that responsibility is the value of a character (Chrisyarani & Yasa, 2018; Wijayanti & Hartati, 2018). Online learning provides opportunities for students to discuss and ask questions about the learning materials freely. It provides a large space for students to express their thoughts, opinions, feelings, and problems related to the subject matter (Ferismayanti, 2020; Rikizaputra & Sulastri, 2020). The increased curiosity and confidence is signed by the question from the students. The existence of online discussions can drill students to exchange opinions so that each student has the opportunity to convey their ideas and give their opinions to other students in finding solutions to problems faced. Furthermore, students feel comfortable communicating through online learning because all statements can be thought before being stated compared to spontaneous communication through offline learning (Chaidir, 2021).

Local wisdom-oriented online learning and peer assessment can make: (1) students have more opportunities to utilize their mathematical knowledge and skills, and (2) students actively participate in learning and express their mathematical ideas. (3) students can respond to problems in their way, and (4) students have more experience in answering problems so that they can improve their understanding of the concept (Anwar, Ruminati, & Suharjo, 2017; Kormasela et al., 2020). Mathematics learning materials through online resources can increase students' curiosity. The positive things obtained in this research are also inseparable from the use of peer assessment in the learning process. Peers can be used to improve discipline by giving pressure on their peers. Behavior formation and behavior modification

among students is strongly influenced by peer pressure and the modeling provided by their peer students. With the examples given by peers, other students will follow. Peers are an important factor in influencing the formation of personality and the formation of one self because with their peers they can exchange ideas about the difficulties and problems they face (Saputro & Pardiman, 2012; Susanto & Aman, 2016). Involving students in assessment aims to reduce students' resistance to feedback and the need for change can improve student achievement and can encourage great motivation to learn and build learning attitudes. The success of online learning oriented to local wisdom and peer assessment is very dependent on the provision of a good online learning infrastructure and the scenario to make online learning materials and activities become a priority as important as offline learning. This supports an increase in students' character and achievement in learning mathematics.

Previous research showed that online learning has many advantages because it can be done anytime and anywhere so it is not limited by space and time (Hwang, Wang, & Lai, 2020; Lage-Cala, Folgueras-Díaza, Alonso-Hidalgo, García-Menéndezb, & Fernández-Garcíaab, 2020). Another advantage is the ability of teachers and students so that they can know more to apply technology in learning and can grow student learning independence (Oknisi, N., & Suyoto, 2019). Online learning is more student-centered so it takes responsibility and is autonomous in learning. The online learning environment has a positive impact on improving student learning outcomes (Chirinda, Ndlovu, & Spangenberg, 2021; Upoalkpajor, JN., Upoalkpajor, 2020; Yilmaz & Kostur, 2021), it is in line with the findings in this study that showed the increase in achievement of student learning and the growth of students' positive character. Previous research showed that the development of local wisdom-oriented teaching materials affected improving student character (Widiya, Lokaria, & Sepriyaningsih, 2021; Wijaya et al., 2020). It is expected that in learning teachers can use appropriate models and methods to improve student achievement. Furthermore, teachers can input the character education with the help of existing culture and traditions.

4. CONCLUSION

Based on the results and discussion above, it can be concluded that the implementation of local wisdom-oriented online learning and peer assessment can improve student mathematics learning achievement from Cycle I to Cycle II and the positive character of students. Furthermore, online learning has made learning flexible because it can accommodate different speeds and learning styles of students, although there are many obstacles in the learning process author cannot mention one by one who has helped a lot in the completion of this research.

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