Process Skill and Student's Interest for Mathematics Learning: Playing a Traditional Games

Kamid Kamid
Fac. of Teaching & Education, Universitas Jambi, Indonesia, *kamid.math@unja.ac.id*

Rohati Rohati
Fac. of Teaching & Education, Universitas Jambi, Indonesia, *rohati.fkip@unja.ac.id*

Hobri Hobri
Fac. of Teaching & Education, Universitas Jember, Indonesia, *hobri1973@gmail.com*

Elza Triani
Fac. of Teaching & Education, Universitas Jambi, Indonesia, *elzatriani2@gmail.com*

Siti Rohana
Fac. of Teaching & Education, Universitas Jambi, Indonesia, *rohanasiti839@gmail.com*

Wahyu Adi Pratama
Fac. of T. & Edu., Universitas Jambi, Indonesia, *wahyuadipratama.wap59@gmail.com*

The urgency of doing this research is as an innovation for educators to be able to make efforts to preserve local wisdom in the form of a traditional kite game by implication it in mathematics lessons that can make learning activities fun. The purpose of this research is to introduce and preserve traditional games which are the heritage of the Indonesian nation by implementing and integrating the traditional kite game into mathematics learning in geometry material in the fourth grade of Primary school. The sample used is students with a total of 80 active students. This study uses a mix method research with explanatory design with SPSS 25 which examines the descriptive, differences, and relationships of students' interests and attitudes towards learning mathematics on geometry material that is integrated with the traditional kite game. The results of the statistical T-test of product and service solutions show that each school has different interests and process skills for each student. by doing a correlation test it was found that there was a relevant relationship between students' interest in learning in process skills. So, the implications of this research are to foster better interest and skills in students with educators being able to make learning fun through the traditional game of kites.

Keywords: local wisdom, traditional games, kites, interests, process skills

INTRODUCTION

Every living human will need education in order to create humans who have superior personalities and fulfill their daily needs. Education helps children to develop optimally is the first foundation in efforts to escalate the quality of learning in Indonesia, where quality learning requires a large investment of resources aimed at increasing the country's human resources to encourage its development goals (Bentri, 2017; Fatimah & Mahmudah, 2017; Nyarkoh & Intsiful, 2018). The main goal of education is to teach students how to think, work and formulate new problems to solve which is one of the most important challenges in education, creating inclusive schools that support learning mathematics for all children. (Alnasser, 2020; Faisal & Martin, 2019; Harlow et al., 2018). Children's success in mathematics is closely related to how they are taught mathematics and to identify the causes of students' inability to learn mathematics (Rahayu et al., 2020; Schwartz et al., 2018; Turgut & Turgut, 2020). Ability is so relevant to math achievement that math anxiety not only hinders children's current performance but has the potential to have long-term consequences (Mutlu, 2019; Shawky et al., 2021; Soltanlou et al., 2019). Therefore, it is necessary to innovate in learning mathematics at the Primary school level by utilizing the richness of Indonesian culture in the form of traditional games in learning mathematics.

In mathematics learning, the traditional game that can be integrated into mathematics learning is a kite. The benefits of the game are expected to contribute to fostering interest in learning and reducing student boredom in studying the material (Girmen, 2019; Nakpong & Chanchalor, 2019; Umbara et al., 2021). Kite as a traditional game made of paper which is given a bamboo frame then threaded into the air with the help of the wind and strings are used to fly the kite and then aspects of the experience of flying a kite (for example, students make the necessary facilities before flying, the process of installing a camera attached to a kite). kites carry all equipment to the mapping area; and prepare kites for flight) provide unique learning outcomes for students who follow (Bagaria et al., 2015; Padmaningsih et al., 2018; Pánek et al., 2018). The kite must have a stable equilibrium point which symbolizes joy (Ansari & Alhussain, 2019; Frolic, 2019). This kite is a traditional game which is a local wisdom. Local wisdom itself consists of social assumptions adopted in the form of arts, traditions and traditional games that have an impact on the surrounding environment (Fredin & Jogmark, 2017; Juliana Jaya et al., 2020; Suprobo & Santosa, 2017). Designing, developing and integrating game-based learning applications is intended to provide interactive learning experiences for students where traditional games are part of local wisdom in facing 21st century challenges such as electronic devices being used to replace traditional games. (Sahrir et al., 2012; Tarigan & Sofyan, 2018). Strengthening character education in children can be built through games (Bhavani et al., 2020; Gorbanev et al., 2018; Suhra et al., 2020). Where traditional knowledge refers to local knowledge that has been accumulated, practiced and passed down orally from generation to generation through traditional games, it is expected to be able to create a learning atmosphere and learning process that attracts students' attention and results in better learning than before. (Binggo & Noho, 2020; Merino-Campos & Del Castillo Fernández, 2016; Pathak & Bharati, 2018). Most of the results of experimental studies discuss the skills of the formation

process in obtaining exclusive knowledge for students (Almazroa, 2020; Pherson-geyser & Kavai, 2020; Tersi, 2020). Local wisdom is important for character education and children's interests (Harun et al., 2020; Hidayati et al., 2020; Uge et al., 2019). Therefore, the process skills and interest of students are very good to be developed, especially in learning mathematics.

Process skills in this learning become something that supports the implementation of good learning. Monotonous learning will cause students to get bored in learning and find it difficult to understand the lessons given by the teacher (Mansouri & Moumine, 2017; Sari et al, 2017; Astalini et al, 2018). Process skills help children to improve students' abilities and develop with experience and competence (Roslina et al., 2020; Suryanti et al., 2020; Zainuddin et al., 2020). The greater the student's interest in learning, the better the learning process carried out in class, where interest in learning is a form of student interest in learning. Students who have an interest in learning will try to concentrate on learning, then these students will continue to study until they can understand the material (Dou et al., 2018; Giglio et al., 2020; Luo et al., 2020). The effectiveness of the teaching and learning process can be done by increasing students' interest in learning, making learning more meaningful and guiding students to achieve competency standards (Dewantara et al., 2019; Kusumastuti et al., 2020; Sutiani et al., 2021). Some indicators that can develop the interest and process skills of Primary school students, namely the attention of educators in learning will foster a sense of pleasure for Primary school students which raises their curiosity and makes students involved in activities such as observing or making observations that create communication between students and students. , students with teachers, who then students obtain and process data. So that the learning process that occurs in the classroom can be well received by students.

The innovation of learning mathematics with local wisdom that is integrated with traditional games is carried out by Juliantari et al. (2020) shows that mathematics learning innovations that are integrated with regional features such as conventional toys are useful as literacy media, this research has never previously conducted research on traditional kite games in mathematics learning. So this research was conducted by examining the innovation of learning mathematics with local wisdom in traditional kite games as a medium for learning mathematics in geometry material for grade 4 Primary school. In this study, researchers measured students' process skills and students' interest in learning mathematics with geometry material that was integrated with traditional kite games.

The previous interest variable in the research by Sudirman et al (2020) which examines the interest in Primary school students in terms of learning Primary school mathematics. So that in previous studies it was created to encourage students' interest and creativity in learning mathematics based on role playing games, where the results of previous studies showed that applying traditional games to mathematics lessons could increase students' interest in learning. Then in the previous research conducted by Zayyadi et al (2018) discussing the topic of teaching geometry material in Primary schools where this study revealed that a play-learning environment can improve learning outcomes to a certain extent. What distinguishes this research from previous research is that researchers use games traditional form of kites as an innovation and interest in increasing the success of

mathematics learning in Primary school geometry material in grade 4. The advantages of this study compared to previous research. This research is an effort to preserve local wisdom, namely the traditional kite game. So that this research is useful to determine students' interest in learning mathematics which is integrated with traditional kite games.

This research is in line with previous research conducted by Suryanti et al. (2020) it was found that guided discovery problem-posing can improve the process skills of primary school students, while the dependency of previous research is still applied in primary schools and has not been upgraded to secondary and higher education. The difference between this previous study and the current research is that the learning model used is problem based learning which is integrated with the traditional kite game. It is known that problem-based learning is an appropriate approach for integrated mathematics because it can make students involved in solving problems by making observations and then obtaining and processing data. So that students can have knowledge and process skills.

The position of this research is specifically for primary schools in mathematics subjects with geometry material in grade IV which is integrated with the traditional kite game. Learning mathematics in primary schools can hone students' mathematical abilities and a good point of view in determining mathematical concepts (Saleh et al., 2018; Surya et al., 2017). Penekanan pada keterampilan matematika dapat menjadi baik dalam proses pembelajaran siswa pada materi geometri (Gil Clemente & Cogolludo-Agustín, 2019; Herbst et al., 2020; Zambak & Tyminski, 2020). Emphasis on mathematical skills can be good in the student's learning process on geometry material (Caffò et al., 2018; Dove & Hollenbrands, 2014; Wares, 2020). Given that learning is important, it can be done according to the interests of students, therefore students can apply what they learn, such as the traditional game of kites. (Asrizal et al., 2018; Mutakinati et al., 2018; Ubuz & Aydınyer, 2017). Traditional games and culture that appear kites are one of the games that can develop students' understanding (Nylund et al., 2021; Özer et al., 2018; Smits, 2019). The traditional kite game can make students interested in participating in mathematics learning on flat geometry material.

Based on the research objectives that have been described, the formulation of the problem in this study include:
1. How is the student's interest in learning mathematics integrated with kite flying in the problem-based learning model??
2. How are students' process skills towards learning mathematics with a problem-based learning model approach to geometry material that is integrated with the traditional kite game?
3. How is the relationship between students' interest and process skills towards learning mathematics with a problem-based learning model approach to geometry material that is integrated with the traditional kite game?

METHOD

Research Design

mixed method explanatory design is used in this study where there is quantitative data in the form of questionnaires and observation sheets which are strengthened by qualitative

data in the form of interviews. Through the application of mixed methodology can explore both quantitative and qualitative, make constructive analysis and data synthesis with in-depth investigation (Cortini et al., 2019). mixed methods have procedures for analyzing, collecting, and integrating quantitative and qualitative methods in a problem carried out in research (Creswell, 2015). From the research carried out, it aims to describe a complex event, as well as compare a particular case, based on this, this research can analyze a research of quantitative data and qualitative data so that it is clearer and complements the data..

Participants

The population in this study was obtained from Public Primary School 64/ I Muara Bulian and Public Primary School 55/ I Sridadi with a sample of 40 active students in each elementary school, using a sampling technique that is not full the sample has criteria that are in accordance with the researched (purposive sampling technique). Purposive sampling is a method of taking samples selectively, subjectively in order to reach a data source that can be processed (Ames et al., 2019; Campbell et al., 2020; Crossman, 2020). then, the purposive sampling technique was chosen by the researcher based on the consideration of the criteria that met the sample, with the selected students being grade IV students who study Geometry with an age range of 9-11 years, and students who know the shape or how to play a kite, then the total sample used is 80 students with 38 male students and 42 female students. This research was conducted in Muara Bulian District, Batanghari Regency, Jambi Province, Indonesia. The time of the research was carried out in January 2021.

Research instrument

This study uses instruments in the form of questionnaires, observation sheets and interviews, where questionnaires and observation sheets used were adopted from the research. (Darmaji et al., 2019) and interviews were conducted with students from Public Primary School 64/I Muara Bulian and Public Primary School 55/I Sridadi. The questionnaire and observation sheet used consisted of an interest questionnaire with indicators consisting of attention in learning, student involvement, feelings of pleasure, and curiosity with 25 item statements, 20 valid items with a cronbach alpha of 0.832 and a process skill observation sheet on learning mathematics with indicators consisting of communication, making observations, and obtaining and processing data with 26 item statements, 23 valid items with a cronbach alpha of 0.842. Instruments obtained through the process of testing instruments based on certain theories are then consulted with competent people through expert judgment. This consultation was carried out with the supervisor to see the strength of the questionnaire items and observation sheets. Then the results of the consultation are used as input to improve the instrument so that it is feasible to collect data. Then test the readability of the instrument items and tested on the sample. Then conducted interviews with students who were accompanied by teachers using three indicators, namely, the concept of traditional games, learning traditional games to increase interest and process skills, as well as learning support facilities and infrastructure. The approach model used is problem based learning. At the pre-implementation stage, the design of the learning framework used in the research process is the syllabus, the Learning Implementation Plan for the mathematics subject

matter of geometry, which is held in two meetings with an allocation of 2x35 minutes in each school. Researchers also developed research instruments to measure interest through questionnaires and student process skills with observation sheets in participating in learning. Then at the implementation stage, it discusses student responses to the problem-based learning model which is integrated into the traditional kite game with a learning and playing learning system starting from observing then obtaining and processing the results of the observations. In this PBL model, the teacher conveys the orientation of learning in mathematics learning activities for flat geometry material that is integrated with the traditional kite game. Then the teacher helps define and organize learning tasks related to mathematics learning materials that are integrated with traditional kite games by making kite games. Then the teacher helps students collect information that is in accordance with mathematics learning materials that are integrated with the traditional kite game. Then the teacher helps the students to reflect (evaluate) the investigation and the processes used in the activity assignment sheets on mathematics learning materials that are integrated with the traditional kite game. Furthermore, at the post-implementation stage of learning the researchers assessed the interests and process skills of students when they had done The learning model used is Problem Based Learning model in mathematics learning that was integrated with the traditional kite game.

Data Analysis Technique

The procedure for this research started from preparing questionnaires and observation sheets to be distributed to primary school students, as well as preparing interview questions for primary school students in Batanghari district. The next stage is to submit an application for an observation permit to the intended school after obtaining permission from the researcher to distribute observation sheets and conduct interviews with students at the school. Data collection method using observation (Sintawati & Abdurrahman, 2020) Furthermore, to strengthen the qualitative data, interviews were conducted. In this study using mixed methods research data analysis techniques, to test quantitative data in the form of questionnaires and observation sheets, hypothesis testing was carried out consisting of T test and correlation test. before that, a prerequisite test is carried out and then a hypothesis test (Dietmaier, 2017). normality test and linearity test are prerequisite tests used by researchers. The results obtained were that the data were normally distributed and linear. Qualitative data analysis was carried out based on Miles and Huberman, namely data collection with data analysis. Data reduction is an effort to collect data, then sort the data into units of certain data concepts, and certain themes. In this case the researcher will choose the main things and focus on the things that are important and look for patterns.

FINDINGS

The following are descriptive statistics of student interest in learning on indicators of attention to learning at Public Primary School 64/I Muara Bulian and Public Primary School 55/I Sridadi (The following are descriptive statistics of students' interest in learning on indicators of attention to learning at Public Primary School 55/I Sridadi. Public Primary School 64/I Muara Bulian and Public Primary School 55/I Sridadi (Table 1)

Table 1
Descriptive statistics of public primary school student interest 64/i Muara Bulian and public primary school 55/i Sridadi

Indicator	Student response	interval	F	%	Category	Mean	med	Min	Max	Std. Deviation
Attention in learning	Public Primary School 64/I Muaro Bulian	4.0-7.2	0	0	Very not good	15.2	15.0	8	18	10.6
		7.3-10.4	1	2.5	not good					
		10.5-13.6	3	7.5	Enough					
		13.7-16.8	30	75.0	good					
		16.9- 20.0	6	15	Very good					
	Public Primary School 55/I Sridadi	4.0-7.2	1	2.5	Very not good	15.1	15.5	5	20.0	10.3
		7.3-10.4	0	0	not good					
		10.5-13.6	11	27.5	Enough					
		13.7-16.8	11	27.5	good					
		16.9- 20.0	17	42.5	Very good					
Student engagement	Public Primary School 64/I Muaro Bulian	5-9	0	0	Very not good	17.5	17.0	13.0	22.0	11.2
		10-13	2	5.0	not good					
		14-17	19	45.0	Enough					
		18-21	18	47.5	good					
		22-25	1	2.5	Very good					
	Public Primary School 55/I Sridadi	5-9	0	0	Very not good	19.3	19.0	15.0	25.0	13.7
		10-13	0	0	not good					
		14-17	8	16.7	Enough					
		18-21	26	54.2	good					
		22-25	6	12.5	Very good					
Happy feeling	Public Primary School 64/I Muaro Bulian	5-9	1	2.5	Very not good	18.9	19.0	6.0	24.0	13.2
		10-13	0	0	not good					
		14-17	11	27.5	Enough					
		18-21	17	42.5	good					
		22-25	11	27.5	Very good					
	Public Primary School 55/I Sridadi	5-9	0	0	Very not good	19.2	19.0	13.0	24.0	13.3
		10-13	2	5.0	not good					
		14-17	8	20.0	Enough					
		18-21	23	57.5	good					
		22-25	7	17.5	Very good					
Curiosity	Public Primary School 64/I Muaro Bulian	5-9	0	0	Very Not good	19.5	20.0	13.0	25.0	14.1
		10-13	1	2.5	Not Good					
		14-17	7	17.5	Enough					
		18-21	22	55.0	good					
		22-25	10	25.0	Very Good					
	Public Primary School 55 / I Sridadi	5-9	0	0	Very Not good	18.0	18.0	12.0	24.0	12.8
		10-13	6	15.0	Not Good					
		14-17	9	22.5	Enough					
		18-21	18	45.0	Good					
		22-25	7	17.5	Very Good					

Based on Table 1, it is found that students' interest in the attention indicator in learning is good, this can be seen from the accumulation of mathematics subjects in State Primary Schools 64/I Muaro Bulian as a whole including good category which has a accumulation of 75.0%, a good category with a accumulation value of 42 ,5% at Public Primary School 55/I Sridadi. Student interest in indicators of student involvement is good, this can be seen from the accumulation in mathematics lessons at Public Primary School 64/I Muaro Bulian as a whole is good category which has a accumulation 47.5% and a good category with a accumulation value of 54.2% in Public Primary School 55 / I Sridadi. Students' interest in the indicators of feeling happy is good, this can be seen

from the accumulation in mathematics subjects at the Public Primary School 64/I Muaro Bulian as a whole is a good category with accumulation of 42.5% and a good category with a accumulation value of 57.5% in Public Primary School 55 / I Sridadi. And the indicators of student's curiosity are good. This can be seen from the accumulation of mathematics subjects at Public Primary School 64/I Muaro Bulian as a whole in the good category with a accumulation of 55.0% and a good category with a accumulation value of 45.0% at Public Primary School 55/I Sridadi. Descriptive Statistics of Process Skills Students get results at Public Primary School 64/ I Muara Bulian and Public Primary School 55/ I Sridadi the results of descriptive statistics from the table below (Table 2).

Table 2
Descriptive statistics of student process skills at public primary school 64/ I Muara Bulian and public primary school 55/ I Sridadi

Indicator	Student response	Interval	F	%	Category	mean	med	Min	Max	Std. Deviation
Communication	Public Primary School 64/I Muaro Bulian	4.0-7.2	0	0	Very not good	14.8	15.0	11.0	19.0	10.1
		7.3-10.4	0	0	Not Good					
		10.5-13.6	15	37.5	Enough					
		13.7-16.8	18	45.0	good					
		16.9-20.0	7	17.5	Very good					
	Public Primary School 55 / I Sridadi	4.0-7.2	0	0	Very not good	15.3	15.0	10.0	20.0	11.3
		7.3-10.4	1	2.5	Not Good					
		10.5-13.6	9	22.5	Enough					
		13.7-16.8	17	42.5	good					
		16.9-20.0	13	32.5	Very good					
Make observations	Public Primary School 64/I Muaro Bulian	4.0-7.2	0	0	Very not good	14.8	15.0	11.0	19.0	10.1
		7.3-10.4	0	0	Not Good					
		10.5-13.6	11	17.5	Enough					
		13.7-16.8	21	52.5	good					
		16.9-20.0	8	20.0	Very good					
	Public Primary School 55/I Sridadi	4.0-7.2	0	0	Very not good	14.5	14.5	10.0	20.0	9.7
		7.3-10.4	3	7.5	Not Good					
		10.5-13.6	9	22.5	Enough					
		13.7-16.8	23	57.5	good					
		16.9-20.0	5	12.5	Very good					
Obtain and process data	Public Primary School 64/I Muaro Bulian	4.0-7.2	0	0	Very not good	14.4	14.0	11.0	19.0	9.6
		7.3-10.4	0	0	Not Good					
		10.5-13.6	13	32.5	Enough					
		13.7-16.8	21	52.5	good					
		16.9-20.0	6	15.0	Very good					
	Public Primary School 55 / I Sridadi	4.0-7.2	0	0	Very not good	14.9	14.5	10.0	20.0	10.5
		7.3-10.4	0	0	Not Good					
		10.5-13.6	10	25.0	Enough					
		13.7-16.8	20	50.0	good					
		16.9-20.0	10	25.0	Very good					

Based on table 2. it is known that students' process skills on communication indicators are good, this can be seen from the accumulation of mathematics subjects at public primary school 64/I Muaro Bulian as a whole including the good category with a accumulation of 45.0% and a good category with a accumulation value of 42.0% at public primary school 55/I sridadi. Student process skills with indicators of making good hypotheses, this can be seen from the accumulation of mathematics subjects at public primary school 64/I muaro bulian as a whole including the good category with a

accumulation of 55.0% and a good category with a score of 50.0% in public primary school 55/I sridadi. The process skills of students with indicators of conducting experiments are good, this can be seen from the accumulation of mathematics subjects at public primary school 64/I Muaro Bulian as a whole including the good category with a accumulation of 52.0% and a good category with a accumulation score of 57.5% in the public primary school 55/I sridadi. Students' process skills with indicators of obtaining and processing data are good, this can be seen from the accumulation of mathematics subjects at public primary school 64/I Muaro Bulian as a whole including the good category with a accumulation of 52.0% and a good category with a accumulation value of 50.0% in public primary school 55/I sridadi. The results of the t-test description of students' interest and process skills in mathematics subjects at public primary school 64/I Muara Bulian and public primary school 55/I Sridadi (table 3).

Table 3
T-test description of students' interest and process skills in mathematics at Public Primary School 64/ I Muara Bulian and public primary school 55/ I Sridadi.

Variable	School	N	Sig. (2-tailed)
Interest	Public Primary School 64/I Muaro Bulian	40	0.032
	Public Primary School 55 / I Sridadi	40	0.045
Process skills	Public Primary School 64/I Muaro Bulian	40	0.036
	Public Primary School 55 / I Sridadi	40	0.043

Based on Table 3 it is known, the results obtained for the T-test of sig. that is (2-tailed < 0.05, can be said that there is a difference in interest and process skills of the students of Public Primary School 64/I Muaro Bulian 55/I Sridadi in mathematics. For the results of the description of the correlation test of students' interest and process skills in mathematics subjects at Public Primary School 64/ I Muara Bulian and Public Primary School 55/ I Sridadi (Table 4).

Table 4
Description of the correlation test of students' interest and process skills in mathematics subjects at Public Primary School 64/ I Muara Bulian and Public Primary School 55/ I Sridadi.

School	School	Pearson Correlation	Sig. (2-tailed)	N
interest	Public Primary School 64/I Muaro Bulian	0.634	0.027	40
	Public Primary School 55 / I Sridadi			
Process skills	Public Primary School 64/I Muaro Bulian	0.612	0.022	40
	Public Primary School 55 / I Sridadi			

Based on Table 4 it is found that the correlation test results sig. (2-tailed) < 0.05, it can be seen the relationship between interest and process skills of students at SDN 64/I Muaro Bulian SDN 55/I Sridadi in mathematics.

Meanwhile, through interviews that have been conducted by researchers with several resource persons, namely grade 4 students from Public Primary School 64/I Muara Bulian and Public Primary School 55/I Sridadi who were accompanied by teachers in charge of primary school mathematics. The results of the interviews are summarized regarding the mathematics learning of geometric shapes integrated with the traditional kite game, as follows: (Table 5)

Table 5
Description of the results of interviews with students

No	Indicator	Question	Answer
1	Traditional game concept	What do you know about traditional games?	S.1 : a fun traditional game that's been around for a long time S.2 : Fun game S.3 : Game for generations S.4 : Fun game
		How many kinds of traditional games do you know?	S.1 : Many, there are congklak, sodor, kites, hide and seek, and many more. S.2 : Many, I really like traditional games in my area, one of which is a big kite S.3 : There are 3, hide and seek, kites, and yeye S.4 : Many, what I really like is the game of yeye and kite
2	Traditional game learning	How enthusiastic are the students towards the application of traditional games in learning?	S. 1: I am very happy when learning is done while playing S.2 : fun S.3 : normal S.4 : fun and easy to understand the material being taught
		How is the process of learning traditional games in this class?	S.1: smooth and comfortable when learning takes place S.2 : fun while learning while playing S.3 : good enough to make learning more fun S.4 : good enough to make understanding learning faster
		Do students enjoy playing traditional games?	S.1 : Very happy, because in the kite game I understand more about getting up flat S.2 : Fun S.3 : Quite fun S.4 : Happy, because I like to play
		Can you make a traditional kite game?	S.1 : yes, by following the directions of the teacher who teaches S.2: yes, but when bending the kite's wing frame it's hard to do S.3 : yes S.4: yes, according to the steps that the teacher has exemplified
3.	facilities and infrastructure	What are the facilities and infrastructure that you have, especially in learning mathematics associated with traditional games?	S.1 : paper and thread S.2 : glue S.3 : none S.4 : bamboo for the frame
		Do teachers participate in the fulfillment of facilities and infrastructure in learning?	S.1 : yes, the teacher prepares and gives how to make a kite S.2 : Yes, the teacher helped us in preparing the materials for making kites S.3 : yes S.4 : yes, the teacher is very helpful

DISCUSSION

The research conducted was a research on the relationship between interest and process skills of students at SDN 64/I Muaro Bulian SDN 55/I Sridadi in mathematics. all students studying in elementary school amounted to 80 students. Using descriptive statistics presents a large amount of data, in the form of summary frequencies, such as mean, median, mode, maximum, minimum and standard deviation. In this study it was found that the results of the descriptive indicators of interest in learning were good.This can be seen from the accumulation of results at the Public Primary School 64/I Muaro Bulian as a whole is a good category with a accumulation of 75.0% and a good category with a accumulation value of 42.5% at Public Primary School 55 / I Sridadi. Interest in indicators of student engagement is good. This can be seen from the accumulation at Public Primary School 64/I Muaro Bulian as a whole is a good category with a accumulation of 47.5% and a good category with a accumulation value of 54.2% at Public Primary School 55 / I Sridadi, on the indicator of feeling happy is good. This can be seen from the accumulation at Public Primary School 64/I Muaro Bulian as a whole is a good category with a accumulation of 42.5% and a good category with a accumulation value of 57.5% at Public Primary School 55 / I Sridadi. Interest in the curiosity indicator is good. It can be seen from the accumulation at the Public Primary School 64/I Muaro Bulian as a whole is a good category with a accumulation of 55.0% and a good category with a accumulation value of 45.0% at Public Primary School 55/I Sridadi. Process skills with indicators Communication is good. This can be seen from the accumulation at SDN 64/I Muaro Bulian as a whole with a good category accumulation of 45.0% and a good category with a accumulation value of 42.0% at Public Primary School 55 / I Sridadi. Process skills with indicators of making hypotheses are good. This can be seen from the accumulation at Public Primary School 64/I Muaro Bulian as a whole is a good category with a accumulation of 55.0% and a good category with a accumulation value of 50.0% at Public Primary School 55 / I Sridadi, process skills with indicators of conducting experiments are good. This can be seen from the accumulation at Public Primary School 64/I Muaro Bulian as a whole is a good category with a accumulation of 55.0% and a good category with a accumulation value of 50.0% at Public Primary School 55 / I Sridadi, process skills with indicators of conducting experiments are good. This can be seen from the accumulation at Public Primary School 64/I Muaro Bulian as a whole is a good category with a accumulation of 52.0% and a good category with a accumulation value of 57.5% at Public Primary School 55 / I Sridadi, process skills with indicators of obtaining and processing data are good. This can be seen from the accumulation at Public Primary School 64/I Muaro Bulian as a whole is a good category with a accumulation of 52.0% and a good category with a accumulation value of 50.0% at Public Primary School 55 / I Sridadi.

Furthermore, the assumption of interest and process skills was tested in mathematics at Public Primary School 64/ I Muara Bulian and Public Primary School 55/ I Sridadi. Where there are 2 tests were carried out namely normality and linearity. In the normality test of student interest at Public Primary School 64/ I Muara Bulian with a sig value of 0.200 and Public Primary School 55/ I Sridadi with a sig value of 0.200. then test the normality of the student's process skills at SD Negeri 64/I Muara Bulian with a sig value

of 0.200 and Public Primary School 55/I Sridadi with a sig value of 0.200 from the sig value data obtained > 0.05 then the data is normally distributed. Then continued with the homogeneity test of student interest at Public Primary School 64/ I Muara Bulian with a sig value of 0.373 and SD Negeri 55/ I Sridadi with a sig value of 0.438. then test the homogeneity of the student's process skills at Public Primary School 64/ I Muara Bulian with a sig value of 0.363 and Public Primary School 55/ I Sridadi with a sig value of 0.235 from the sig value data obtained > 0.05, then obtained homogeneous data. Then the linearity test is carried out on the data interests and process skills at Public Primary School 64/ I Muara Bulian with a sig value of 0.012 and Public Primary School 55/ I Sridadi with a sig value of 0.013 from the sig value data obtained sig < 0.05, it can be concluded that the data is linear. By journal (Chen et al., 2015) stated that the researcher developed a test of existing assumptions to find the function index in the sample.

In testing the hypothesis, the t test and correlation test are used. The t test difference test is useful for determining whether two unrelated samples have a different mean. from the results of table 14 student t-test results interest in learning mathematics with geometry material integrated with traditional kite games, the value of sig. (2-tailed) at Public Primary School 64/ I Muara Bulian is 0.032 < 0.05, then the variable student process skills in learning mathematics with geometry material that is integrated with traditional kite games, the score is sig. (2-tailed) 0.036 <0.05 then at Public Primary School 55/ I Sridadi on the variable of student interest in mathematics lessons on geometry material that is integrated with traditional games the value of the kite is sig.(2-tailed) 0.045 < 0.05, then the variable student process skills in math subjects linked to the traditional kite game is obtained the value of sig (2-tailed) 0.034 < 0.05, it can be said that there is a difference between student learning outcomes interest and process skills towards mathematics subjects with m geometric material integrated with traditional games at Public Primary School 64/ I Muara Bulian and Public Primary School 55/ I Sridadi. Based on table 15 obtained, the results of the correlation test of students' interest in mathematics with geometry material integrated with traditional kite games in class IV Public Primary School 64/ I Muara Bulian obtained sig. (2-tailed) 0.025 < 0.05 and at Public Primary School 55/ I Sridadi obtained a value of sig. (2-tailed) 0.028 < 0.05, It can be said that there is a relationship between students' attitudes and interests in mathematics subjects with geometry material that is integrated with traditional games in grade IV Public Primary School 64/ I Muara Bulian obtained a score of sig.(2-tailed) 0.025 < 0.05 and at Public Primary School 55/ I Sridadi.

The traditional kite game is not only found in Indonesia but also in East Asian, Southeast Asian, and South Asian countries. It is believed that Buddhist missionaries introduced kite flying from China to Japan in the 7th century. From here, kites spread throughout the Pacific region and became a popular game in Asian countries. (Desai, 2010). Kite games are also a traditional game in South Korea (Sah, 2020). In Indonesia, children have a variety of traditional games with a few innovations made by the teacher, which can be interesting learning media for students where traditional games are game activities that grow and develop from the habits of certain people. (Isnardiantini et al., 2019; Raup et al., 2020). Through interviews conducted by researchers with several students in each primary school, it was found that students had little knowledge of what

traditional games were and various traditional games such as congklak, sodor, kite, hide and seek, and many more. Students are very happy to play traditional games that make students enthusiastic when learning is done while playing. When learning is integrated with traditional games, learning runs smoothly, is fun and easy to understand the material being taught, so that it is quite well implemented, such as in the kite game, students become more aware of the flat-building material. In the learning process, students make observations by listening and seeing the teacher's directions when explaining and practicing how to make a kite on flat geometry material. After observing and gaining knowledge, students try to make kites with the concepts that have been obtained. In some experimental studies, it discusses the skills of the formation process in obtaining direct knowledge for students (Almazroa, 2020; Pherson-geyser & Kavai, 2020; Tersi, 2020). So it can be seen that students' interest in learning mathematics that is integrated with traditional games is relatively large which makes learning fun that fosters feelings of pleasure, attention in learning, curiosity, and student involvement and can improve students' process skills in learning such as in communication, making observations. , acquire and process data.

The research that the researcher is doing now supports the previous research conducted by Farokhah et al. (2021) who stated that communication in learning mathematics is an important ability for students in facing challenges and from a preliminary study conducted by researchers that in elementary school students it shows that most students have difficulty communicating mathematical ideas. The results of previous studies indicate that the improvement of students' mathematical communication skills who learn through project-based learning using mind map techniques is better. However, previous studies only examined mathematical communication skills in mathematics learning in primary schools. So the researchers conducted this research as an update and complement from previous research by measuring students' communication skills, making observations, and obtaining and processing data. Then in this study also measured the relationship between students' interest and process skills towards mathematics learning that was integrated with traditional games.

This study agrees with the research conducted by Sholahuddin & Admoko (2021), The weakness of previous research is that it only discusses local wisdom of traditional games which are lacking in increasing interest and skills in the learning process in mathematics. This is what underlies further research in this study to encourage students' interest in traditional games in mathematics subjects to hone their abilities and interest in good learning. The difference between this research and previous research is that this study uses a traditional game in the form of a kite game to train students' interest and process skills in primary school for grade four grade four flat geometry subjects. The advantage of this research from previous research is that it discusses more concretely about students' learning interests and process skills in mathematics subjects using the traditional kite game.

The novelty in this research is the use of the kite game which is used in the application of mathematics learning on geometry material in grade 4 primary schools based on local wisdom, namely the traditional kite game which can help students easily understand the

material given by the teacher and make learning more meaningful. . and can foster student interest and develop student process skills in solving problems in learning, especially mathematics lessons. This research is also the first time that interest in learning mathematics has been carried out using traditional games, while in previous research it was conducted by (Dewantara et al., 2019) discusses a phenomenon that can attract students' attention or interest, from this the researcher conducted research on student interest which was enhanced through a learning process integrated with the traditional kite game in the mathematics subject matter of geometry in grade four Public Primary School 64 / I Muara Bulian and Public Primary School 55 / I Sridadi.

The novelty of this research is also the first time to discuss process skills in mathematics lessons in primary schools that are integrated with traditional kite games.Where in the previous research conducted by (Suryanti et al., 2020) discusses process skills in primary school, but students are quite difficult to apply process skills in learning. Based on this, the researchers in this study carried out an innovation of learning media to improve learning process skills in primary schools by using the traditional kite game which was integrated especially in the mathematics subject matter of geometry in grade four Public Primary School 64 / I Muara Bulian and Public Primary School 55 / I Sridadi. Through this, students can solve a problem in learning and make learning more meaningful and fun with the existence of a learning innovation, especially in mathematics, geometry material which is integrated with the traditional kite game.

The traditional game used in mathematics subjects with geometry material, namely kites, is very useful for students' interest in learning to determine the quality of student behavior towards lessons. Learning behavior on the level of development and knowledge greatly affects motivation, interest and discipline (Hyseni Duraku & Hoxha, 2021; Panungcat et al., 2021). This states that participation and soft skills as well as a good point of view can be used to solve math problems (Ambussaidi & Yang, 2019; Lin et al., 2020). This tendency is a problem-solving technique in determining mathematical concepts using concrete objects so that it can increase student interest in learning. The importance of traditional games being applied in learning activities is to improve children's development. Where can improve children's process skills, one of which is in communicating well with the interaction while playing and can develop cognitive, moral, language and motor aspects.

The limitation of this research is that the game model used is only applied at the Primary school level in fourth grade. It is carried out specifically at the primary school level in grade four because at that age students are still in their period to play so that if learning is integrated with traditional games it can increase student interest and it is hoped that it can improve students' process skills in learning mathematics on geometry material. For further research, the researcher recommends conducting research on mathematics lessons that are integrated with other traditional games that are integrated with learning and carried out in junior and senior high schools. The implication is to foster interest and improve process skills of each student with educators being able to make learning fun through mathematics learning that is integrated with traditional games such as kites

CONCLUSION

One of the efforts to increase students' interest in learning mathematics is by integrating conventional (traditional) games into mathematics subject matter such as kite flying in geometric shapes. Based on the results of the hypothesis test, it was found that for the T test there were significant differences in interest and process skills in the mathematics subject matter of geometry which was integrated with the traditional kite game in class IV Public Primary School 64 / I Muara Bulian and Public Primary School 55 / I Sridadi. Then in the correlation test, there is a significant relationship between interest and process skills in the mathematics subject matter of geometry which is integrated with the traditional kite game in class IV Public Primary School 64 / I Muara Bulian and Public Primary School 55 / I Sridadi. So that students' interest in learning mathematics can improve students' process skills. Interview results obtained by using or implying the traditional game of kites in mathematics lessons can foster enthusiasm, interest, and develop students' process skills in solving and solving problems in learning mathematics. Researchers suggest to do further research with variables, subjects, and schools that different.

REFERENCES

Almazroa, H. (2020). Insights from Saudi Student Teachers : Successes and Challenges. International Journal of Instruction, *13*(3), 445–460.

Alnasser, Y. A. (2020). The perspectives of Colorado general and special education teachers on the barriers to co-teaching in the inclusive elementary school classroom. Education, *3-13, 0*(0), 1–14. https://doi.org/10.1080/03004279.2020.1776363

Ambussaidi, I., & Yang, Y.-F. (2019). The Impact of Mathematics Teacher Quality on Student Achievement in Oman and Taiwan. International Journal of Education and Learning, *1*(2), 50–62. https://doi.org/10.31763/ijele.v1i2.39

Ames, H., Glenton, C., & Lewin, S. (2019). Purposive sampling in a qualitative evidence synthesis. BMC Medical Research Methodology.

Ansari, A. A., & Alhussain, Z. A. (2019). The Restricted Five-Body Problem With Cyclic Kite Configuration. Journal of Dynamical Systems and Geometric Theories. https://doi.org/10.1080/1726037x.2018.1551720

Asrizal, Amran, A., Ananda, A., Festiyed, F., & Sumarmin, R. (2018). The development of integrated science instructional materials to improve students' digital literacy in scientific approach. Jurnal Pendidikan IPA Indonesia, *7*(4), 442–450. https://doi.org/10.15294/jpii.v7i4.13613

Astalini, A., Kurniawan, D. A., & Sumaryanti, S. (2018). Sikap Siswa Terhadap Pelajaran Fisika di SMAN Kabupaten Batanghari. JIPF (Jurnal Ilmu Pendidikan Fisika). https://doi.org/10.26737/jipf.v3i2.694

Bagaria, V., Nemade, A., & Joshi, N. (2015). Achilles Tendon Rupture Secondary to Kite String (Manja) Injury: A Rare Etiology seen in Two Cases. Journal of Foot and

Ankle Surgery (Asia Pacific), *2*(2). https://doi.org/10.5005/jp-journals-10040-1037

Bentri, A. (2017). a Model of Local Content Disaster-Based Curriculum. International Journal of GEOMATE, *13*(40), 140–147.

Bhavani, G., Mehta, A., & Dubey, S. (2020). Literature Review: Game Based Pedagogy in Accounting Education. International Journal of Financial Research. https://doi.org/10.5430/ijfr.v11n6p165

Binggo, F. H., & Noho, A. N. (2020). Use of Barcode Based Traditional Games in Improving Student Learning Outcomes in Learning Citizenship Education (PPKN). Journal of Asian Multicultural Research for Educational Study. https://doi.org/10.47616/jamres.v1i2.45

Caffò, A. O., Lopez, A., Spano, G., Serino, S., Cipresso, P., Stasolla, F., Savino, M., Lancioni, G. E., Riva, G., & Bosco, A. (2018). Spatial reorientation decline in aging: the combination of geometry and landmarks. Aging and Mental Health, *22*(10), 1372–1383. https://doi.org/10.1080/13607863.2017.1354973

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D., & Walker, K. (2020). Purposive sampling: complex or simple? Research case examples. Journal of Research in Nursing. https://doi.org/10.1177/1744987120927206

Chen, W., Wang, D., & Li, Y. (2015). A class of tests of proportional hazards assumption for left-truncated and right-censored data. Journal of Applied Statistics, *42*(11), 2307–2320. https://doi.org/10.1080/02664763.2015.1027884

Cortini, M., Converso, D., Galanti, T., Di Fiore, T., Di Domenico, A., & Fantinelli, S. (2019). Gratitude at work works! A mix-method study on different dimensions of gratitude, job satisfaction, and job performance. Sustainability (Switzerland). https://doi.org/10.3390/su11143902

Creswell, J. W. (2015). Penelitian Kualitatif & Desain Riset. Mycological Research, *94*(4), 522.

Crossman, A. (2020). Purposive Sampling - Definition and Types. In Thoughtco.

Darmaji, D., Kurniawan, D. A., & Irdianti, I. (2019). Physics education students' science process skills. International Journal of Evaluation and Research in Education, *8*(2), 293–298. https://doi.org/10.11591/ijere.v8i2.28646

Desai, N. (2010). A Different Freedom: Kite Flying in Western India; Culture and Tradition EBSCO ebook academic collection. Cambridge Scholars Publishing.

Dewantara, I. P. M., Suandi, I. N., Rasna, I. W., & Putrayasa, I. B. (2019). Cultivating Students ' Interest and Positive Attitudes towards Indonesian Language through Phenomenon-Text-Based Information Literacy Learning. International Journal of Instruction, *12*(2), 147–162.

Dietmaier, C. (2017). Deskriptive Statistik. In Mathematik für Wirtschaftsingenieure. https://doi.org/10.3139/9783446454477.014

Dou, R., Brewe, E., Potvin, G., Zwolak, J. P., & Hazari, Z. (2018). Understanding the development of interest and self-efficacy in active-learning undergraduate physics courses. International Journal of Science Education, *40*(13), 1587–1605. https://doi.org/10.1080/09500693.2018.1488088

Dove, A., & Hollenbrands, K. (2014). Teachers' scaffolding of students' learning of geometry while using a dynamic geometry program. International Journal of Mathematical Education in Science and Technology, *45*(5), 668–681. https://doi.org/10.1080/0020739X.2013.868540

Faisal, & Martin, S. N. (2019). Science education in Indonesia: past, present, and future. Asia-Pacific Science Education, *5*(1). https://doi.org/10.1186/s41029-019-0032-0

Farokhah, L., Nurmulia, F., Herman, T., Jupri, A., Pratiwi, V., Nurkaeti, N., & Abidin, Z. (2021). The improvement of mathematical communication ability of elementary school students through project-based learning using mind map technique. Journal of Physics: Conference Series, *1806*(1). https://doi.org/10.1088/1742-6596/1806/1/012105

Fatimah, S., & Mahmudah, U. (2017). Two-Stage Data Envelopment Analysis (DEA) for Measuring the Efficiency of Elementary Schools in Indonesia. International Journal of Environmental and Science Education, *12*(8), 1971–1987. http://ijese.net/makale/1955

Fredin, S., & Jogmark, M. (2017). Local culture as a context for entrepreneurial activities. European Planning Studies, *25*(9), 1556–1574. https://doi.org/10.1080/09654313.2017.1306028

Frolic, B. M. (2019). Flying Kites on White Cloud Mountain. In Mao's People. https://doi.org/10.2307/j.ctvk12r7j.20

Giglio, S., Bertacchini, F., Bilotta, E., & Pantano, P. (2020). Machine learning and points of interest: typical tourist Italian cities. Current Issues in Tourism, *23*(13), 1646–1658. https://doi.org/10.1080/13683500.2019.1637827

Gil Clemente, M. E., & Cogolludo-Agustín, J. I. (2019). The Effectiveness of Teaching Geometry to Enhance Mathematical Understanding in Children with Down Syndrome. International Journal of Disability, Development and Education, *66*(2), 186–205. https://doi.org/10.1080/1034912X.2019.1571171

Girmen, P. (2019). Skills and Enriching Activities : Digital Stories and Games 1. International Journal of Instruction, *12*(1), 555–572.

Gorbanev, I., Agudelo-Londoño, S., González, R. A., Cortes, A., Pomares, A., Delgadillo, V., Yepes, F. J., & Muñoz, Ó. (2018). A systematic review of serious games in medical education: quality of evidence and pedagogical strategy. In Medical Education Online. https://doi.org/10.1080/10872981.2018.1438718

Harlow, D. B., Dwyer, H. A., Hansen, A. K., Iveland, A. O., & Franklin, D. M. (2018). Ecological Design-Based Research for Computer Science Education: Affordances and Effectivities for Elementary School Students. Cognition and Instruction, *36*(3), 224–246.

https://doi.org/10.1080/07370008.2018.1475390

Harun, Jaedun, A., Sudaryanti, & Manaf, A. (2020). Dimensions of early childhood character education based on multicultural and community local wisdom. International Journal of Instruction, *13*(2), 365–380. https://doi.org/10.29333/iji.2020.13225a

Hendriana, H., Johanto, T., & Sumarmo, U. (2018). The role of problem-based learning to improve students' mathematical problem-solving ability and self confidence. Journal on Mathematics Education, *9*(2), 291–299. https://doi.org/10.22342/jme.9.2.5394.291-300

Herbst, P., Ko, I., & Milewski, A. (2020). A heuristic approach to assess change in mathematical knowledge for teaching geometry after a practice-based professional learning intervention. Research in Mathematics Education, *22*(2), 188–208. https://doi.org/10.1080/14794802.2019.1704851

Hidayati, N. A., Waluyo, H. J., Winarni, R., & Suyitno. (2020). Exploring the implementation of local wisdom-based character education among indonesian higher education students. International Journal of Instruction, *13*(2), 179–198. https://doi.org/10.29333/iji.2020.13213a

Hyseni Duraku, Z., & Hoxha, L. (2021). Impact of Transformational and Transactional Attributes of School Principal Leadership on Teachers' Motivation for Work. Frontiers in Education, 6(June). https://doi.org/10.3389/feduc.2021.659919

Isnardiantini, S., Usodo, B., & Soegiyan, H. (2019). The Effect Of Discovery Learning – Based Teaching Material By Utilizing Traditional Game On Mathematic Abilities Of The 2nd Graders Of Elementary School. International Journal of Educational Research Review. https://doi.org/10.24331/ijere.573773

Juliana Jaya, P. E., Utama, M. S., Murjana Yasa, I. G. W., & Yuliarmi, N. N. (2020). Improving competitiveness and well-being through human resources quality, local culture, and product performance. Cogent Business and Management, *7*(1). https://doi.org/10.1080/23311975.2020.1831247

Juliantari, N. K., Sudarsana, I. K., Badra, I. K., & ... (2020). Local Wisdom in Traditional Games as a Family Literacy Media. In International Journal of ….

Kusumastuti, A., Khoiron, A. M., & Achmadi, T. A. (2020). Metode Penelitian Kuantitatif. Deepublish.

Lin, S., Zhou, Y., & Wijaya, T. T. (2020). Using hawgent dynamic mathematics software in teaching arithmetic operation. International Journal of Education and Learning, *2*(1), 25–31. https://doi.org/10.31763/ijele.v2i1.97

Luo, Z., Jingying, C., Guangshuai, W., & Mengyi, L. (2020). A three-dimensional model of student interest during learning using multimodal fusion with natural sensing technology. Interactive Learning Environments, *0*(0), 1–14. https://doi.org/10.1080/10494820.2019.1710852

Mansouri, Z., & Moumine, M. E. A. (2017). Primary and Secondary Education in Morocco: From Access to School into Generalization to Dropout. International Journal of Evaluation and Research in Education (IJERE), *6*(1), 9. https://doi.org/10.11591/ijere.v6i1.6341

Merino-Campos, C., & Del Castillo Fernández, H. (2016). Los beneficios de los videojuegos interactivos: una aproximación educativa y una revisión sistemática de la actividad física. Journal of New Approaches in Educational Research. https://doi.org/10.7821/naer.2016.7.164

Mutakinati, L., Anwari, I., & Yoshisuke, K. (2018). Analysis of students' critical thinking skill of middle school through stem education project-based learning. Jurnal Pendidikan IPA Indonesia, *7*(1), 54–65. https://doi.org/10.15294/jpii.v7i1.10495

Nakpong, N., & Chanchalor, S. (2019). Interactive multimedia games to enhance the emotional intelligence of deaf and hard of hearing adolescents. International Journal of Instruction, *12*(2), 305–320. https://doi.org/10.29333/iji.2019.12220a

Nyarkoh, E., & Intsiful, E. (2018). An Assessment of the Impact of International Aid on Basic Education in Ghana. American Journal of Educational Research. https://doi.org/10.12691/education-6-1-7

Nylund, N., Prax, P., & Sotamaa, O. (2021). Rethinking game heritage–towards reflexivity in game preservation. International Journal of Heritage Studies, 27(3), 268–280. https://doi.org/10.1080/13527258.2020.1752772

OKTAVIA, A., & AGUSTIN, H. (2019). Umbul Card: A Traditional Game as Nutrition Education Media among Elementary School Students. International Journal of Educational Research Review. https://doi.org/10.24331/ijere.646821

Özer, S., Oppedal, B., Şirin, S., & Ergün, G. (2018). Children facing war: their understandings of war and peace. Vulnerable Children and Youth Studies, *13*(1), 60–71. https://doi.org/10.1080/17450128.2017.1372652

Padmaningsih, D., Suwanto, Y., & Sujono. (2018). The Local Wisdom in Javanese Traditional Games (Ethnolinguistic Study). International Seminar On Recent Language, Literature, And Local Culture Studies (BASA 2018) Javanese.

Pánek, J., Pászto, V., & Perkins, C. (2018). Flying a kite: playful mapping in a multidisciplinary field-course. Journal of Geography in Higher Education. https://doi.org/10.1080/03098265.2018.1463975

Panungcat, J. E., Vasquez, R. T., Sabandal, J. R., Bolacoy, J. P., & Buladaco, M. V. M. (2021). Strategy Multiplayer Online Battle Arena Game Skills and Learning Behavior : Strategy Multiplayer Online Battle Arena Game Skills and Learning Behavior : A Correlational Study Among Gamers in Panabo City. February.

Pathak, M., & Bharati, K. A. (2018). Growing visibility and impact of Indian journal of traditional knowledge. Indian Journal of Traditional Knowledge.

Pherson-geyser, G. M., & Kavai, P. (2020). The Use of Experiential Learning as a Teaching Strategy in Life Sciences. International Journal of Instruction, *13*(3), 877–894.

Raup, U. A., Budiman, N., & Syamsuddin, A. (2020). Traditional Game for the Development of Emotional Intelligence. https://doi.org/10.2991/assehr.k.200130.116

Roslina, Andalia, N., AG, B., & Zulfajri, M. (2020). The Student Ability in Graph Understanding for Mastering Natural Science Concepts through the Process Skills Approach. International Journal of Instruction, *13*(4), 145–160.

Sah, J.-Y. (2020). A Study on the Center Hole of Korean Traditional Kite with Aspect Ratio 1:1.5. Journal of the Korean Society for Aeronautical & Space Sciences, *48*(4), 243–254. https://doi.org/10.5139/jksas.2020.48.4.243

Sahrir, M. S., Alias, N. A., Ismail, Z., & Osman, N. (2012). Employing design and development research (DDR) approaches in the design and development of online arabic vocabulary learning games prototype. Turkish Online Journal of Educational Technology.

Sari, N., Suryanti, K., Manurung, S. M., & Sintia, S. (2017). Analisis Penggunaan Media Pembelajaran Untuk Meningkatkan Motivasi Peserta Didik Terhadap Pembelajaran Fisika Kelas XI MIPA 1 SMA Titian Teras Muaro Jambi. Jurnal Pendidikan Fisika Dan Keilmuan (JPFK), *3*(2), 110. https://doi.org/10.25273/jpfk.v3i2.1297

Setiawan, B., Innatesari, D. K., Sabtiawan, W. B., & Sudarmin, S. (2017). The development of local wisdom-based natural science module to improve science literation of students. Jurnal Pendidikan IPA Indonesia. https://doi.org/10.15294/jpii.v6i1.9595

Sholahuddin, M. I., & Admoko, S. (2021). Exploration of Physics Concepts Based on Local Wisdom Kolecer Traditional Games. PENDIPA Journal of Science Education. https://doi.org/10.33369/pendipa.5.1.70-78

Sintawati, M., & Abdurrahman, G. (2020). The effectiveness of blended learning to improve pre-service teacher TPaCK in developing multimedia learning mathematics at elementary school. Journal of Physics: Conference Series. https://doi.org/10.1088/1742-6596/1521/3/032014

Smits, F. (2019). Young Dutch commercially sponsored kite surfers: free as a bird? Sport in Society, 22(10), 1707–1723. https://doi.org/10.1080/17430437.2018.1440703

Soltanlou, M., Artemenko, C., Dresler, T., Fallgatter, A. J., Ehlis, A. C., & Nuerk, H. C. (2019). Math anxiety in combination with low visuospatial memory impairs math learning in children. Frontiers in Psychology. https://doi.org/10.3389/fpsyg.2019.00089

Sudirman, S., Yaniawati, R. P., Melawaty, M., & Indrawan, R. (2020). Integrating ethnomathematics into augmented reality technology: Exploration, design, and implementation in geometry learning. Journal of Physics: Conference Series, *1521*(3). https://doi.org/10.1088/1742-6596/1521/3/032006

Suhra, S., Djubaedi, D., & Haji Mail, A. A. Bin. (2020). The Contribution of Bugis' Traditional Games in Strengthening Students' Character Education at Madrasa. Jurnal Pendidikan Islam. https://doi.org/10.15575/jpi.v6i2.9753

Suprobo, F. P., & Santosa, A. (2017). Models of furniture design using coconut wood based on local culture for global and domestic markets. Creative Industries Journal, *10*(1), 89–99. https://doi.org/10.1080/17510694.2017.1282304

Suryanti, Widodo, W., & Budijastuti, W. (2020). Guided Discovery Problem-Posing : An Attempt to Improve Science Process Skills in Elementary School. International Journal of Instruction, *13*(3), 75–88.

Sutiani, A., Situmorang, M., & Silalahi, A. (2021). Implementation of an Inquiry Learning Model with Science Literacy to Improve Student Critical Thinking Skills. International Journal of Instruction, *14*(2), 117–138.

Tarigan, B., & Sofyan, R. (2018). Maintaining Karonese Ecolexicon through Traditional Game Cengkah-cengkah. International Journal of Applied Linguistics and English Literature. https://doi.org/10.7575/aiac.ijalel.v.7n.4p.177

Tersi, M. (2020). Preschool Children. International Journal of Instruction, *13*(3), 259–274.

Turgut, S., & Turgut, İ. G. (2020). Me while i am learning mathematics: Reflections to elementary school students' drawings. International Electronic Journal of Elementary Education, 13(1), 139–154. https://doi.org/10.26822/iejee.2020.179

Uge, S., Neolaka, A., & Yasin, M. (2019). Development of social studies learning model based on local wisdom in improving students' knowledge and social attitude. International Journal of Instruction, *12*(3), 375–388. https://doi.org/10.29333/iji.2019.12323a

Umbara, U., Munir, Susilana, R., & Puadi, E. F. W. (2021). Algebra dominoes game: Re-designing mathematics learning during the covid-19 pandemic. International Journal of Instruction, 14(4), 483–502. https://doi.org/10.29333/iji.2021.14429a

Wares, A. (2020). Challenging problems in Euclidean geometry. International Journal of Mathematical Education in Science and Technology, *51*(4), 626–630. https://doi.org/10.1080/0020739X.2019.1587023

Zainuddin, Suyidno, Dewantara, D., Mahtari, S., Nur, M., Yuanita, L., & Sunarti, T. (2020). The correlation of scientific knowledge-science process skills and scientific creativity in creative responsibility based learning. International Journal of Instruction, *13*(3), 307–316. https://doi.org/10.29333/iji.2020.13321a

Zambak, V. S., & Tyminski, A. M. (2020). Examining mathematical technological knowledge of pre-service middle grades teachers with Geometer's Sketchpad in a geometry course. International Journal of Mathematical Education in Science and Technology, *51*(2), 183–207. https://doi.org/10.1080/0020739X.2019.1650302

Zayyadi, M., Hasanah, S. I., & Surahmi, E. (2018). Ethnomatematics Exploration in Traditional Games As A Form Of Student' Social Interaction. JIPM (Jurnal Ilmiah Pendidikan Matematika), *6*(2), 125. https://doi.org/10.25273/jipm.v6i2.1826