

Improving the Understanding of Integrated Thematic Concept Oriented to Multiple Intelligences Approach (PMI) at SD Negeri Kualuh Selatan, North Labuhanbatu, North Sumatera Province

Irmayanti¹, Rahmi Nazliah^{*}, Risma Delima Harahap³, Siti Suharni Simamora⁴, Suriyani⁵ Arman Harahap⁶,
Teacher Training and Education Faculty of Labuhanbatu University
Province Sumatera Utara Indonesia

Abstract:- The research objectives are to find out: (1) The improvement of the students' understanding of thematic concepts through the Multiple Intelligences Learning approach (PMI) is better than the students' understanding of thematic concepts through conventional approaches. (2) The interaction between the learning approach and the student's initial ability to increase understanding of students' thematic concepts. The instruments used were: (1) Initial Mathematics Ability Test, (2) Thematic Concept Understanding Test, (3) Likert Scale Multiple Intelligences Questionnaire, (4) Observation Sheet. The instrument has fulfilled the validity and the reliability coefficient requirements of 0.87 and 0.93 for understanding thematic concepts and multiple intelligences questionnaires. This research is quasi-experimental research. The research subjects were the students of State Elementary School 112270 Hasang and State Elementary School 118193 Pangujungan. The sample of the experimental class was 66 students, while the sample of the control class was 63 students which taken randomly. The research object: The understanding of the concept and the questionnaire. The data used are pretest and posttest. From the research the concept of understanding was obtained $F_{count} = 5,461 > F_{table} = 3,07$ there was a different in the increasing the students' understanding of the thematic concept of the Multiple Intelligences Approach (PMI) compared to the students who were given the Conventional Learning (PK) approach. For multiple intelligences questionnaire, it was obtained $F_{count} = 110,835 > F_{table} = 3,07$ there is a difference in the increasing of students' compound intelligence who were given PMI compared to students who were given PK. Based on the results about it can be concluded that an increase of the students' understanding of the thematic concept who use PMI is better than students who use PK. So it is suggested in this matter Multiple Learning Intelligence (PMI) should be an alternative learning for the teachers in elementary schools to improve understanding of students' thematic concepts.

Keywords:- Thematic Understanding Ability, Multiple Intelligences Approach.

I. INTRODUCTION

Hasang is a village located in the northern Labuhanbatu Regency, precisely in the South Kualuh sub-district, North Sumatera province. Hasang Village has 2 State Elementary Schools namely SD Negeri 112270 Hasang and SD Negeri 118193 Pangujungan. The location of SD Negeri 112270 is actually not too far from urban areas but the road access is not good while the location of SD Negeri 118193 Pangujungan is far away and the road access is quite severe and must pass three tributaries that do not have the bridge. Thus to conduct teaching learning activities in education, the teachers are rarely involved in participating, while in the new curriculum, curriculum 2013, the teachers must be active in helping students prepare to learn to face technological advancements and to face future challenges listed in the curriculum (Yulianti, 2017). Curriculum 13 requires teachers and students to be more creative and have innovative abilities in understanding learning and students are no longer used as objects by teachers (Mulyasa, 2013). Teachers in this case are challenged to be able to change the mindset and to teach the patterns so far, especially in the changing in the new curriculum, there is an amalgamation of several subjects into one theme that is often called the integrated thematic learning model. This thematic learning is applied to students from class I to class VI, the previous learning sometimes does not pay attention to the inculcation of the concepts that do not build on their prior knowledge and experience (Yuliana, 2017).

Integrated thematic learning is learning that combines / integrates the subject competencies complemented by themes which are combined with other subjects, this learning can make classes more effective and efficient by using students who have a high understanding concepts (Mulyasa, 2013: 170). Thematic learning is useful to assist the students in learning in school, as well as developing learning with themes, also helps students understand the concepts that they can learn and they can relate them to other concepts that they've already understood. Thematic learning can also improve learning outcomes as well as motivation (Chen, 2012), Liu (2010). Gestalt Psychology figures, as well as Piaget stressed that learning must be a focus on the children and the children needs in the children's development. This learning emphasizes the

application of understanding concepts to do something (learning by doing). Thus, the teacher must improve the learning experience so that it can influence the students' meaningfulness and experience in learning (Aryani, 2015). Learning experiences will be able to show a conceptual connection that will undoubtedly make the learning process more effective. Conceptual links among the subjects will make a decision, so that the students will get all the knowledge. The application of thematic learning in elementary schools is very helpful for students, because thematic learning is in accordance with the development of students who still see something as a whole (holistic).

According to the National Education Ministry (2006), Thematic learning has the characteristics including: (1) Experiences and learning activities in accordance with the development and the needs of elementary school age children; (2) Activities in implementation are based on the students' interests and needs; (3) Learning activities are more meaningful and memorable for students which will influence longer learning outcomes; (4) Developing students' thinking skills; (5) packaging learning activities so that they are pragmatically in accordance with the needs and problems that often arise in their environment; and (6) Developing students' social skills. Thus the ability to understand concepts is needed so that integrated thematic learning can run smoothly.

Understanding concepts is the ability of students to find and explain, translate, interpret and conclude concepts based on their own thoughts, not just to memorize them (Septiana, 2017). Understanding this concept is an aspect in an assessment in the learning process which aims to determine the extent to which a student's ability in terms of receiving and understanding the concept of learning that he has received (Gift, 2016). The students have the ability to understand the concept, if the student is able to

communicate both verbally, in writing and pictures as messages which occur during learning and the students can connect the new knowledge gained with the previous knowledge. The students' understanding of a problem is a part of the problem solving.

Learning to solve the problems needs to be applied in a learning process in Mathematics, Natural Sciences, Social Sciences, Civics and Bahasa Indonesia in elementary schools, therefore we need a potential and the thematic abilities in solving the problems related to student intelligence that are needed in the integrated thematic learning . In learning, the thematic problem solving according to Cadavid (2010), is increasing scientific work (Pitadjeng, 2009), increasing understanding of science concepts (Hendrawati, 2010), increasing the ability to solve problems in innovative ways using facts, concepts, principles or procedures which have been learned (Rede, 2010). Thus the thematic language learning is more meaningful, not only in the students' intelligence and potential needs, but also the students' creativity to express their opinions and arguments which are very much needed in the learning process. Thus the creativity of arguing is really needed to be developed so that the students are able to solve the problems and they can understand the concept of a theme or material that they have been learned.

Based on the observations and the interviews of researchers at SD Negeri 112270 Hasang, only class V consisted of two classes which was consisting of 64 students while SD Negeri 118193 Pangujungan consisted of 65 students, with the questions of Mathematics, Natural Sciences, Social Sciences, Civics and Bahasa Indonesia with a total number of 20 questions and the provision of Multiple Intelligences questionnaire were obtained the following results:

No	Category	SD Negeri Hasang		SD Negeri Pangujungan	
		Thematic Question	Quisioner	Thematic Question	Quisioner
1	High	9 Students	20 Students	8 Students	17 Students
2	Middle	25 Students	24 Students	27 Students	19 Students
3	Low	30 Students	20 Students	30 Students	29 Students
Total		64 Students	64 Students	65 Students	65 Students

Table 1:- Number of Students

Based on table 1, it can be seen that generally the students who experience low learning outcomes due to student creativity in argumentation and opinion are very minimal or less emerging from themselves, as well as students' dissatisfaction with the themes discussed, students are also less able to provide creative and innovative ideas . The Students also can not restate a concept which has been learned with their own language, students 'ability to group a problem according to the properties they have is also lack, the students' abilities are also minimal in distinguishing which are included as examples rather than examples of the themes that have been learned, it is also clear that the

students' abilities are lack in terms of presenting a concept in the form of pictures or symbols in the sequence in mathematical learning, to state the necessary and the sufficient conditions of things that are known to be unclear, the use and the utilization and the choosen procedures specified in a theme have still not yet maximal and in applying a concept in problem solving based on the correct steps is also not optimal. Based on these problems, we can measure the students' intelligence from how they solve the problems and how they understand a learning concept given by the teacher.

Sometimes the mistakes also occur to the teacher, because they infrequently teach in accordance with the students' intelligence, but they teach the students in accordance with the teachers' intelligence. Thus, the students tend to be quiet listening or talking when they are asked by the teacher. Though a child or a student has extraordinary potential in him. Thus, the teacher should be able to help optimize the potential and the ability to understand concepts in accordance with the student's intelligence.

One alternative to overcome the problem of the lack of creative opinion and the argument in understanding a concept and optimizing various types of intelligence is the Multiple Intelligences Approach (PMI) (Abdulkader, 2009). This model prioritizes learning as a forum for developing intelligence and the students' potentiality to solve the problems in their lives by making these creative learning and applicable learning (Sibel, 2013). The Multiple Intelligences (PMI) approach is able to facilitate all intelligence possessed in a learning activity (Jasmine, 2007: 118).

Menri Asriani (2018) Through learning Multiple Intelligences, the students are expected to be able to carry out activities on each intelligence, namely: (1) linguistic intelligence, is a language intelligence which can be done by reading, writing stories, enjoying poetry and using reading material in learning, (2) mathematical logical intelligence, is the ability to think logically and be able to manipulate and use numbers effectively, (3) spatial intelligence, namely the ability to perceive images and space accurately, (4) kinesthetic intelligence is able to use ideas and feelings to solve the problems, (5) musical intelligence, namely the ability to recognize rhythm by distinguishing and expressing musical forms, (6) interpersonal intelligence, is the ability to understand differences, respect feelings and moods, (7) intrapersonal intelligence, is the ability to understand oneself and be able to act adaptively based on knowledge, (8) naturalist intelligence is being able to recognize, explain, and clarify the various problems, (9) existential intelligence, is the ability to ponder questions about the existence.

Therefore, the decision to implement the learning strategy in a learning process in class needs to be considered the differences of the students' initial abilities. Students' abilities can be identified through a number of ways, for example by holding initial tests, aptitude tests, intelligence tests, previous learning achievement results, learning achievements during the program, feedback from students, and so on. Related to the research subject, namely the fifth grade students in the second semester, the authors determined the differences in the ability of students in this group would be grouped based on preliminary tests in the form of Mathematics, Natural Sciences, Social Sciences, Civics and Bahasa Indonesia from the previous material. Based on the description above, the research taken is "Improving The Understanding of Integrated Thematic Concept Oriented to Multiple Intelligences Approach (PMI)".

II. RESEARCH METHODS

This study used a quantitative research approach with quasi experimental methods in the form of quasi-experiments. Quasi experimental research according to Ruseffendi (2005: 35) is a research that is really seeing the causal relationship. This study aims to examine the ability to understand the thematic concepts, the students' questionnaires that are influenced by learning strategies namely Multiple Intelligences (PMI) and conventional learning (PK). The population in this study were all elementary students in South Kualuh Subdistrict, namely SD Negeri 112270 Hasang and SD Negeri 118193 Pangujungan. Of the two schools, two classes were chosen from class V. The cluster random sampling technique was used. The samples were two classes from SD Negeri 112270 Hasang, namely V A and V B and two classes from SD Negeri 118193 Pangujungan, namely class V A and V B. In this design, the subjects of this study were the students in grade V elementary school. The experimental groups were treated with Multiple Intelligences (X), and the control groups were given conventional treatment, then each research classes was given pretest and posttest (O).

This study has three stages, namely the preparation phase, the implementation phase, and the final phase. In this study, the instruments used are as the following: the initial ability test is the students' knowledge before learning is going to take place and it is done to determine the high, medium and low level of the students abilities before learning is done and to see the changes in the students' initial thematic abilities if there is an increasing or not. The questions test on the integrated thematic concept comprehension ability is used to measure the integrated thematic concept comprehension ability. The integrated thematic questions in the form of a description test of 20 questions with 4 questions for each subject or theme. The questions given are arranged based on indicators of the ability of understanding the thematic concepts. The Multiple Intelligences Questionnaires were obtained through a closed questionnaire scale, they were compiled and developed based on the nine aspects, namely the aspects of linguistic intelligence, mathematical logical intelligence, spatial intelligence, kinesthetic intelligence, musical intelligence, interpersonal intelligence, intrapersonal intelligence, naturalist intelligence, and existential intelligence. The questionnaires are consisted of 40 statement items with four choices, namely Strongly Agree (SS), Agree (S), Disagree (TS), and Strongly Disagree (STS).

The instrument for understanding the ability of the concepts and the questionnaires before being used was tested for its validity, reliability, difficulty level, and different power. The tests were given to the experimental class and the control class at the time of the test and post test. The data analysis technique used was to test normality with Chi Square test and its homogeneity was used the variance test or F test, then the hypothesis test had been performed to see the increasing in the ability to understand thematic concepts between the experimental class and the

control class on the faithful theme with the N-gain test (gain normalization) and t test for hypothesis testing, if $t_{count} > t_{table}$.

III. RESULTS AND DISCUSSION

This study generally aims to examine, to describe, and to compare the increasing understanding of the thematic concepts oriented to Multiple Intelligences (low, medium, and high). The quantitative data were obtained through the

initial mathematical ability test (KAT), mathematical concept comprehension ability test, and filling out a questionnaire related to the theme taught to the students in this study. The qualitative data were obtained through the process of the answer given by the students on the ability test of understanding the concept of the problems and the observations of the teachers' and students' activities during the learning process. The data obtained from 129 students, with the distribution of the sample as the following:

No	School	(Experimental Group)	(Control Group)	Total
1	Class V SD Hasang	31 orang	33 orang	64
2	Class V SD Pangujungan	35	30	65
Total		66	63	129

Table 2:- Distribution of Research Samples

KAT test was used to determine the equality of the sample and to find out the students' KAT. To get a KAT picture of MI and PK of the students a mean calculation and standard deviation of the students' KAT scores were obtained for PMI of 57.05 and 13,720 with 66 students while for PK it was obtained an average of 58.02 and a standard deviation of 13, 583 with 63 students. For overall the standard and standard deviation obtained by 57.52 and 13.609 with 129 students. From the description of the values above it was known that the KAT mean score of the PMI and PK groups were relatively the same. To find out the equivalence of the KAT scores of the two groups of the sample, normality data distribution test, variance homogeneity test and the mean difference test were performed. From the calculation results of KAT data normality test, it was obtained that all probabilities (sig.) For each group (PMI of 0.192 and PK of 0.200) were

greater than 0.05. This means the null hypothesis (Ho) is accepted. Based on these results, the samples from a population were normally distributed. To test this hypothesis the Levene test was used. The results of the calculation of the homogeneity of the variance obtained that the probability value (sig.) In the KAT data group is greater than 0.05 ie 0.918, so the null hypothesis is accepted. This means that, the variance of the two groups of approaches was homogeneous.

Then a t-test was performed to determine whether there is a difference in the mean between the two groups (PMI and PK). The results of the calculation of the average KAT test were difference between the students given PMI and the students given PK can be seen in the following Table 3:

Approach	Difference	T Test	Sig. (2 tailed)
PMI >> PK	-0,97	-0,0404	0,687

Table 3:- Results of KAT t Test Analysis Based on Learning Approaches

Based on the above calculation, it can be seen that the probability value (sig.) was greater than 0.05. This means that the null hypothesis was accepted. So, it can be concluded that there was no significant differences between KAT scores in the experimental group and the control group. This showed that this study began with the relatively similar KAT conditions of students. After finding out that there was no difference between the KAT scores in the PMI group and the PK group before being given learning treatment, the grouping of students' understanding

of the students' concept of understanding was then determined (high, medium, and low).

➤ *The Description of the Ability to Understand Integrated Thematic concepts*

The description of integrated thematic concept comprehension ability is an illustration of increasing students' integrated thematic concept understanding ability between students who are given PMI and students who are given PK with the following data:

Catagories	Aspects								
	N		Statistic Data	Pretest		Post test		N Gain	
	PMI	PK		PMI	PK	PMI	PK	PMI	PK
High	11	11	\bar{x}	17,91	17,45	57,73	55,45	0,698	0,661
			S	0,944	1,440	2,867	2,622	0,049	0,042
Middle	39	38	\bar{x}	15,31	15,29	46,97	45,55	0,532	0,507
			S	2,364	2,277	6,964	5,486	0,111	0,878
Low	16	14	\bar{x}	11,63	13,00	35,56	32,53	0,378	0,327
			S	4,031	2,987	4,179	4,836	0,047	0,059
Total	66	63	\bar{x}	14,85	15,16	46,00	43,85	0,522	0,486
			S	3,380	2,701	9,182	9,052	0,136	0,133

Table 4:- Data Descriptions Ability to understand the concept of PMI and PK Group Student Problems

From table 4, it can be concluded that overall the average increase in high ability, the students who were given PMI (0.698) were higher compared to the average increase in high ability of the students who were given PK (0.661). For the mean of moderate ability improvement, the students who were given PMI (0.532) were higher compared to the average of moderate ability improvement, the students who were given PK (0.507). And for the mean of low ability improvement, the students who were given PMI (0.378) were higher compared to the mean of low ability improvement, the students who were given PK (0.327). Thus it can be concluded that overall the mean increase in the ability of understanding of the students' thematic concept who were given PMI (0.522) was higher compared to the average increase in the ability of understanding of the students' integrated thematic concept who were given PK (0.486). The findings of this study were reinforced by Asriani (2018) which states that the

experimental class obtained a higher N-gain value than the control class which meant that the increase in the problem solving ability of the experimental class was higher than the control class.

➤ *Data Analysis Ability to Understand Integrated Thematic Concepts*

To test the difference in the increasing of the students' integrated thematic concept comprehension who were given PMI compared to students who were given PK, and the interaction between the students' thematic concept comprehension ability factors (high, medium and low) and the approach factors (PMI and PK) used statistical analysis test. However, before conducting the statistical test, the analysis prerequisite test was carried out, namely the normality test and the variance homogeneity test. The calculation results were obtained as the following.

Math Ability	n	Approach	(K-S) Z	Sign.	Ho
High	11	PMI	0,247	0,059	Accepted
	11	PK	0,192	0,200	Accepted
Middle	39	PMI	0,060	0,200	Accepted
	38	PK	0,117	0,200	Accepted
Low	16	PMI	0,177	0,191	Accepted
	14	PK	0,140	0,200	Accepted
Total	66	PMI	0,107	0,058	Accepted
	63	PK	0,082	0,200	Accepted

Table 5:- Data Normality Test , Ability to Understand the Concept of PMI and PK Group

Table 5 shows the probability value (sign.) In general the average of the students' score integrated thematic concept comprehension ability according to the students' thematic (high, medium, and low) thematic ability understanding concept and learning approaches (PMI and PK) normally distributed.

Then the variance homogeneity test for the two groups of data were performed using the Levene test. The results of the calculations can be seen in the table below.

Math Ability	Approach	Statistic Levene (F)	dk1	dk2	Sig.	Ho
High	PMI * PK	0,135	1	20	0,178	Accepted
Middle	PMI * PK	1,481	1	75	0,227	Accepted
Low	PMI * PK	2,348	1	28	0,137	Accepted
Total	PMI * PK	0,208	1	127	0,649	Accepted

Table 6:- Homogeneity Test Ability to Understand the Concept of PMI and PK

In the table above it can be seen that the probability value (sign.) In the category of students' understanding the concepts (low, medium, and high) was greater than 0.05, so the null hypothesis was accepted. In other words, the population variance of the data was the ability to understand homogeneous integrated thematic concepts.

From the explanation above it can be seen that each data groups was normally distributed and the pair of PMI and PK data groups have the same variance (homogeneous). Thus, in order to find out there are

differences in the average gain of the two sample groups (PMI and PK), and the interaction between students' thematic concept understanding abilities (high, medium and low) with learning approaches (PMI and PK) using the two-way Anova test. Anova two paths was used to determine the differences between several independent variables with a dependent variable and each variable has two or more levels, provided that the data were normally distributed, and homogeneous. The results of the calculation of the average gain different test can be seen in Table 7. below.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1,441	5	0,288	40,093	0,000
Intercept	26,056	1	26,056	3625,076	0,000
KAT	1,411	2	0,705	98,150	0,000
Approach	3,925E-02	1	3,925E-02	5,461	0,021
KAT*Approach	6,351E-03	2	3,175E-03	0,442	0,644
Error	0,884	123	7,188E-03		
Total	35,561	129			
Corrected Total	2,325	128			

Table 7:- The Summary of Anova Test Two Data Gain Paths The ability to understand integrated Thematic Concepts

From Table 7 above for the learning approach factor it is seen that the probability value (sign.) Of 0.021 is smaller than 0.05 so the null hypothesis was rejected. In other words there was a difference in the increasing ability to understand the thematic integrated concepts of students who are given PMI compared to students who are given PK. By looking at the average gain of the two sample groups, it can be concluded that the increasing of the students' ability to understand the integrated thematic concept who were given PMI significantly better than that of the students' who were given PK.

From Table 7 for the learning approach factors and the students' thematic abilities, it can be seen that the probability value (sign.) Of 0.064 is greater than 0.05 so the null hypothesis was accepted. In other words there was no interaction between the learning approach and students' thematic concept ability to increase the integrated thematic concept ability, for all students' thematic concept understanding abilities (high, medium and low) who get

PMI approach gain an increasing ability to understand the thematic integrated concepts more higher than the students who obtained PK. As well as the average difference in increasing the ability to understand the concept of the problem was almost the same. This shows that the interaction between the learning approach and the students 'understanding of thematic concepts (high, medium and low) do not have a significant joint effect on increasing the students' integrated thematic concept comprehension ability. The difference in the increased understanding of integrated thematic concepts was due to differences in the learning approaches used not because of the students' understanding of thematic concepts.

➤ *Description of Multiple Students Intelligence Questionnaire*

The description of the multiple intelligences questionnaire for students can be seen through the average pretest, posttest and the gain of multiple intelligences questionnaire for each indicator presented in Table 8 below.

Indicator	Score of multiple intelligences Questionnaire					
	Pretest		Posttest		Gain	
	PMI	PK	PMI	PK	PMI	PK
Linguistics Intelligence	16,492	17,857	20,092	20,079	0,471	0,369
mathematical logical intelligence	18,677	18,905	20,554	20,349	0,360	0,259
spatial intelligence	20,077	19,794	21,585	21,286	0,337	0,313
kinesthetic intelligence	19,108	18,698	20,569	20,413	0,313	0,302
musical intelligence	19,462	19,429	20,754	20,746	0,287	0,246
interpersonal intelligence	13,338	12,730	14,446	13,889	0,380	0,315
intrapersonal intelligence	13,585	13,429	14,800	14,460	0,521	0,376
naturalist intelligence	14,566	13,338	14,446	13,889	0,380	0,315
Existential intelligence	20,011	19,889	21,585	21,286	0,337	0,313

Table 8:- Average Pretest, Posttest and Gain Questionnaire for Multiple Intelligences Students Each Indicator Based on Approach Factors

There are several conclusions regarding the students' multiple intelligences questionnaire which can be revealed as the following:

- From the average post test score per indicator, it can be concluded that the students' multiple intelligences questionnaire who were given the PMI approach were slightly higher compared to students who were given the conventional approach.
- From the average gain score per indicator, it can be concluded that the students' increasing in the multiple intelligences questionnaire who were given the PMI approach were slightly higher compared to students who were given the conventional approach.

IV. CONCLUSION

- Improving the understanding of the students' thematic concepts who use PMI was better than of the students who use PK.
- There was no interaction between the approach and the student's initial ability to increase understanding of thematic concepts. Differences in understanding the students' thematic concepts are due to the approach factor not the students' mathematical abilities.

REFERENCES

- [1]. Abdulkader, F.A., Gundogdu, K., Eissa, M.A., (2009). *The Effectiveness of A Multiple Intelligences Based Program on Improving Certain Reading Skills in 5th Year Primary Learning Disabled Students [versi elektronik]*. Electronic Journal Of Research And Educational Psychology, 7(3), ISSN: 1696-2095. 673-690.
- [2]. A Harahap, (2015). Perbedaan Hasil Belajar Siswa yang diajar dengan Menggunakan Metode Diskusi dengan Penerapan Prediction Guide (tebak Pelajaran) dan Tanpa Penerapan Prediction Guide Pada Materi.. *Jurnal Pembelajaran dan Biologi Nukleus 1* (1), 25-28 | vol: | issue : | 2015
- [3]. Aryani, A.D., Sudjito, D.N., & Sudarmi, M. (2015). *Penerapan Model Pembelajaran Berdasarkan Teori Multiple Intelligence (MI) yang Dominan dalam Kelas Pada Materi Tekanan*. *Jurnal Radiasi*, 6(1): 1-10.
- [4]. A Harahap, (2015). Perbedaan Pembelajaran dengan Metode Inside Outside dan Kooperatif Tipe JIGSAW pada Materi Sistem Pencernaan Makanan Pada Manusia dikelas XI SMA Swasta Kusuma Bangsa Londut *Jurnal Pembelajaran dan Biologi Nukleus 1* (2), 30-33 | vol: | issue : | 2015
- [5]. Asriani, R., Hikmawati., & Wahyudi. (2018). *Pengaruh Pendekatan Multiple Intelligences Terhadap Kemampuan Pemecahan Masalah Fisika Siswa*. *Prisma Sains: Jurnal Pengkajian Ilmu dan Pembelajaran Matematika dan IPA IKIP Mataram*, 6(2), 77-85.
- [6]. Barbara, M. (2001). *Learning Styles an Multiple Intelligences in Students*. *Journal of College Science Teaching, NSTA*.
- [7]. Cadavid, C. 2003, *Teaching English In Primary School Through a Spiral Thematic Curriculum*, *Ikala, Revista de Lenguaje y cultura*, Vol. 8 No. 14, p. 81-97.
- [8]. Chen, Y.T. 2012. *The effect of Thematic Video-Based Instruction on Learning and Motivation in E-learning*. *International Journal of Physical Sciences* Vol. 7(6). pp. 957 – 965.
- [9]. Depdiknas. 2006. *Model Pembelajaran Tematik Kelas Awal Sekolah Dasar*. Jakarta: Puskur Balitbang
- [10]. Jasmine. (2007). *Panduan Praktis Mengajar Berbasis Multiple Intelligences*. Bandung. Nuansa.0
- [11]. Karunia, E.P. Mulyono. (2016). *Analisis Kemampuan Pemahaman Konsep Siswa Kelas VII Berdasarkan Gaya Belajar dalam Model Knisley*. Seminar Nasional Matematika X . Universitas Negeri Malang: 337-346
- [12]. Liu, M.-C., & Wang, J.-Y. (2010). *Investigating Knowledge Integration in Web- based Thematic Learning Using Concept Mapping Assessment*. *Educational Technology & Society*, 13 (2), 25–39.

- [13]. Meidiyana, S., Harsono, N. (2017). *Penerapan Pembelajaran Berbasis Multiple Intelligences untuk Meningkatkan Keterampilan Partisipatoris Siswa dalam Pembelajaran PKn di SD*. Jurnal Anatologi UPI Vol.5(1): 1-11.
- [14]. Mulyasa. (2015). *Pengembangan dan Implementasi Kurikulum 2013*. Bandung: Remaja Rosdakarya.
- [15]. Pitadjeng, 2009, *Peningkatan kerja ilmiah siswa kelas II SD dengan Pengembangan Pembelajaran Tematik*, Jurnal Kependidikan, Volume 39, Nomor 2, November 2009, hal. 87-94.
- [16]. Rahmadhani, N. (2018). *Upaya Meningkatkan Minat Belajar IPS Melalui Strategi Pembelajaran Berbasis Multiple Intelligences pada Siswa Kelas V*. Jurnal Pendidikan Guru Sekolah Dasar Edisi 19 Tahun Ke-7. 1.846- 1.855.
- [17]. Rede, A. 2010. *Pengembangan Perangkat pembelajaran Tematik Pokok Bahasan Pemanasan Global dan Pengaruhnya Terhadap Kecakapan Hidup, Motivasi, dan Prestasi Belajar Siswa SD di Karangploso*. (Disertasi tidak dipublikasikan). Malang: PPS-UM. [20]Ozgelen, S. 2012. Students Science Process Skills within a Cognitive Domain Framework. Journal of Mathematics Science and Technology Education 8(4): 283-292.
- [18]. Ruseffendi. 2005. *Dasar-Dasar Penelitian Pendidikan dan Bidang Non-Eksakta Lainnya*. Bandung: Tarsito.
- [19]. Rahmatsyah dan Simamora, H. 2011. *Pengaruh Keterampilan Proses Sains melalui Model Pembelajaran Inkuiri Terbimbing terhadap Hasil Belajar Siswa pada Materi Pokok Gerak di Kelas VII SMP*. Jurnal Penelitian Inovasi Pendidikan Fisika, 3(2): 15-16..
- [20]. Septiana, K.G. Ikhsan. J. (2017). *Pengaruh Penerapan Multiple Intelligences dengan Model PBL Terhadap Pemahaman Konsep dan Kemampuan Berfikir Kreatif*. Jurnal Edukasi Matematika dan Sains (JEMS). 5 (1): 43-52 .
- [21]. Sibel, G. Yalmanci. Ibrahim. (2013). *The Effects of Multiple Intelligences Theory Based Teaching on Students achievement And Retention of Knowledge*. International journal on New Trends in Education And Their Implication. Vol. 4, Issue:3.
- [22]. Xie, J. Lin, R. (2009). *Research on Multiple Intelligences Teaching an Assesment*. Asian Journal of Management and Humanity Sciences, Vol 4. No. 2-3:106-124. [26] Rustaman, N. 2017. *Keterampilan Proses Sains*. Bogor: Ghalia Indonesia
- [23]. Yuliana, P. (2017). *Peningkatan Kemampuan Pemahaman Konsep dan Sikap Matematis menggunakan Model Scientific dalam Pendekatan Tematik Integratif di Kelas IV SD*. Jurnal Wahana Didaktika Vol. 15 No. 2 Mei 2017: 99-110.
- [24]. Septiana, K.G. Ikhsan. J. (2017). *Pengaruh Penerapan Multiple Intelligences dengan Model PBL Terhadap Pemahaman Konsep dan Kemampuan Berfikir Kreatif*. Jurnal Edukasi Matematika dan Sains (JEMS). 5 (1): 43-52 .
- [25]. Yulianti. (2017). *Pengaruh Pendekatan Multiple Intelligence terhadap Kemampuan Pemecahan Masalah Fisika Pada Peserta Didik Kelas X Di SMA Negeri 2 Bantaeng*. Jurnal Pendidikan Fisika Universitas Muhammadiyah Makassar. 5(2): 215-233.