Research Paper

Development of Teaching Materials Based on Multiple Intelligences with Project Based Learning to Increase Creativity and Science Learning Outcomes for Grade VI Elementary School Students in Semarang City

Primus Devra Raihan[1], Sri Wardani[2], Barokah Isdaryanti[3]

[1,2,3]Master Program, Student of Primary Education, Universitas Negeri Semarang, Semarang City, Indonesia

Corresponding Author: Primus Devra Raihan

ABSTRACT

This research aims to examine how to develop, test the feasibility, and test the effectiveness of teaching materials based on multiple intelligences. This research procedure uses the Borg and Gall model. The results showed that teaching materials based on various bits of intelligence were very appropriate, with a presentation feasibility percentage of 100% for teaching materials experts, 87.5% for language experts, and 90.6% for content experts. This media is effective with the results of the t-test obtained t_count of 53.43 and t_table 2.09 so that there is a significant difference between the pretest and posttest learning outcomes with an average pretest of 56.8 and a posttest of 87.5, the difference is 30.7%. The average (n-gain) pretest and posttest data were increased at 0.617 with moderate criteria. This study concludes that teaching materials based on multiple intelligences are very feasible and effective for use in science learning about the solar system class VI. Suggestions for further research can apply multiple intelligence-based teaching forms that are more interactive in other materials by improving the appearance of the design and adding references to deepen the discussion of material in teaching materials.

Keywords: Teaching materials, Multiple Intelligence, PjBL, Science, Solar System.

INTRODUCTION

Permendikbud number 37 of 2018 concerning core competencies and basic competency lessons in the 2013 curriculum states that the curriculum objectives include four competencies, namely (1) spiritual attitude competencies, (2) social attitudes, (3) knowledge, and (4) skills. These competencies are achieved through extracurricular, co-curricular, and extracurricular learning processes. The formulation of Spiritual Attitude Competency, namely "Respect and appreciate the teachings of the religion they adhere to." As for the formulation of Social Attitude Competency, "Demonstrate honest, disciplined, responsible, caring, courteous, and confident behavior in interacting effectively with the social and natural environment within reach of association and existence." These two competencies are achieved through indirect learning, namely exemplary, habituation, and school culture, by taking into account the characteristics of the subjects as well as the needs and conditions of students (Permendikbud, 2018).

Along with the development of education, learning models are increasingly being used to support the quality of learning. Pjbl or project-based learning is often used in the

learning process to make it easier for teachers to convey messages and students to receive messages. Baer (Antika & Nawawi, 2017) suggests that creative thinking is synonymous with divergent thinking. There are four indicators of divergent thinking, namely influence (the ability to generate many ideas), flexibility (the ability to generate a variety of ideas), originality (the ability to generate new ideas or ideas that did not exist before), and elaboration (the ability to develop or add ideas so that a detailed or detailed idea is produced). Baer argued that a person's creativity is shown in various ways, such as thinking habits, attitudes, traits or personality, or problem-solving skills. School, as an institution providing education, has a responsibility to help students develop creative thinking skills.

Through the use of the Pjbl model during science learning, where there is still a tendency for students to be passive, most students are still afraid to ask questions or express their opinions to the teacher even though they still do not understand the material presented by the teacher. When the teacher asked if there was anyone who did not understand the material, the student's response was just silence. After being tasked with working on the questions, the teacher knows that many students still need help understanding the material being taught. It is not only a problem for the students; in the science learning process, the teacher still dominates the class. There needs to be a better interaction relationship between teachers and students. This is one of the factors causing why students tend to be passive during the science learning process in class.

Research conducted by (Ardiansyah et al., 2020) shows that the ability of science teachers to develop learning tools in the form of lesson plans and worksheets is as follows: 1) the format of the learning tools is 90%. 2) suitability of KD and PjBL Models 50%, 3) accuracy of PjBL syntax 70%, and 4) conformity with LKPD 60%, In

the aspect of choosing materials that are appropriate to Project Based Learning, science teachers have moderate achievements (50%) this because science teachers still think that all science material can use Project Based Learning as long as at the end of learning students can produce a product. Even though the teacher needs to look at the Basic Competencies in the 2013 curriculum and pay attention to keywords in Basic Competences, such as if there are operational verbs that require students to "make products," then the teacher must use the material and apply it using the Project Based Learning model in the learning process.

Project-based learning (Project Based Learning) effectively develops these principles per the Freedom to Learn concepts. Project Based Learning (PjBL) is a learning model involving students in problem-solving activities and providing opportunities for them to work autonomously to construct their own learning. Pratiwi, K. P. (2018) states that project-based learning can increase learning activity and motivation. Thus, the Project Based Learning (PjBL) learning model can be used as a learning model to develop students' abilities in planning, communicating, solving problems, and making informed decisions, right from the problem at hand.

The theory of multiple intelligences believes that each individual has intelligence according to the dominant type of intelligence that is innate or can be developed due to cultural education (Fathani, 2016). The learning process, of course, can be carried out and developed by looking at students' potential and Multiple Intelligences (multiple intelligences). Every student certainly has foreign intelligence; some tend to have one intelligence, but some have two or more dominant intelligence. The various bits of intelligence students possess are the colors and diversity that are formed in students. Teachers must be able to recognize and understand

students' intelligence abilities so that students feel motivated to learn when teachers value the intelligence they have (Yes et al., 2020); Aziz et al., 2016).

Based on the results of observation and analysis of problems carried out by researchers at Sdn Srondol Wetan 3, Sdn Pedalangan 2, and Sdn Gedang 01, which were carried out in 3 grades 5 and 2 grade 6, it shows that 2 out of 5 teachers have used project-based learning as a learning model that implemented. Hence, the researchers decided to continue research at Srondol Wetan 3 Elementary School in a school, still using the government's teaching materials and had not optimally implemented project-based learning. Teachers were still guided by teaching materials, namely teacher and student books, and did not yet have material development. Teaching materials that can support the achievement of learning objectives are found in class VI SDN Srondol Wetan 3.

The development of teaching materials is an essential component that needs to be done when preparing to learn; in developing teaching materials applying learning models is very important as an introduction to the application of these teaching materials. The project-based learning model has a syntax that helps teachers coordinate students in the learning process. Learning that applies project-based learning can help students practice the multiple intelligences they have. The development of multiple intelligences is essential for students to develop skills. Multiple intelligences can be found in every lesson but are not highlighted seriously. Multiple intelligences need to be highlighted as a basis for learning to maintain and help develop intelligence owned by students.

Learning that has been implemented at Srondol Wetan 3 Elementary School out of a total of 30 students in class A, judging from the daily test scores, there are 16 students (53.3%) who score below the KKM, while 14 (46.7%) others score above KKM. Class B, with a total of 28 students,

seen from the daily test scores, there 16 (57.14%) students scored below the KKM. At the same time, the remaining 12 (42.86%) students who scored above the KKM students were also not maximal in developing multiple skills as obtained from observations. The learning process only gives rise to natural intelligence, linguistics, and interpersonal, even though in science, learning the material of the Solar System. The teacher can stimulate other Multiple intelligences such as spatial intelligence, kinesthetic, and musical, so researchers are interested in developing teaching materials that can stimulate 6 of 8 Multiple intelligences or Multiple intelligence, namely: (1) spatial intelligence, (2) kinesthetic intelligence, (3) naturalist intelligence, (4) musical intelligence, (5) linguistic intelligence, and (6) interpersonal intelligence. Based on the description above, the researcher is interested in conducting a thesis research with the title "Development of Teaching Materials Based on Multiple Intelligences with Project Based Learning to Increase Creativity and Learning Outcomes of Class VI Students of Sd Negeri Srondol Wetan 3 Semarang City".

MATERIALS & METHODS
The type of research used is Research and Development (R&D) development research in collaboration with the mixed method model. Research and Development is research used to produce a particular product and test its effectiveness of the product (Sugiyono, 2016, p. 297). The development model used is the Borg & Gall development model, which consists of several stages, namely: 1) potentials and problems; 2) data collection; 3) product design; 4) design validation; 5) design revisions; 6) product trials; 7) product revisions; 8) trial use. This study used a pre-experimental research design with the form of one group before-after design. A pre-action test (pretest) and a posttest (Sugiyono, 2016: 415) were carried out in

the usage trial. The mixed method model applied sequential explanatory (sequence of proof). This model combines research that gives higher weight to quantitative research methods. In contrast, qualitative research methods are used to complement and improve accuracy and new findings. This research was carried out in the even semester of the 2021/2022 school year at Srondol Wetan 3 Public Elementary School, Srondol Wetan Village, Banyumanik District, Semarang City.

The subjects in this study were students, teachers, experts, and researchers. Variables in this study: 1) The independent variables are teaching materials based on Multiple intelligences; 2) The dependent variable is science learning outcomes and students' creativity. In this development research, media validation was carried out by experts. The Data collection techniques in this study namely; 1) test techniques in the form of pretest and posttest; 2) non-test techniques in the form of interviews, questionnaires, and documentation. Data analysis techniques in this study consisted of initial and final data analysis. Initial data analysis by carrying out normality and homogeneity tests on the pretest and posttest learning outcomes. Meanwhile, the final data analysis was carried out by conducting a t-test and n-gain test.

RESULT

The results of the research and development of teaching materials based on Multiple intelligence to improve learning outcomes and creativity of elementary school students on solar system material for class VI SD include: development of teaching materials based on Multiple intelligence which are applied in science learning on solar system material for class VI; 2) the feasibility of teaching materials based on Multiple intelligences; 3) learning outcomes of Grade VI students using teaching materials based on Multiple Intelligence.

Design Development of teaching materials based on Multiple Intelligence

Design drafts are made to adjust the data that researchers get according to the needs of teachers in developing teaching materials based on multiple intelligences. This teaching material was developed by containing 6 of the eight multiple intelligence components, namely: (1) spatial intelligence, (2) kinesthetic intelligence, (3) naturalist intelligence, (4) musical intelligence, (5) linguistic intelligence, and (6) interpersonal intelligence. This teaching material is designed with an attractive color appearance and quite complete material, as stated by Angela (2013). The benefits of teaching materials include: 1) they can speed up the discussion of study material, 2) students can learn study material that will be taught earlier, 3) teaching materials can also be inserted into exercises that students must do in the learning process, 4) questions are made based on teaching materials so that the assessment is fairer according to students' abilities, 5) with teaching materials, theories conveyed by the teacher cannot be understood in class, students can learn again from the teaching materials, 6) with teaching materials, if there are assignments that must be done at home students already have one of the references to do them. The main components in making teaching materials based on multiple intelligences consist of Cover, introduction, part core, and Cover. This learning media contains solar system material adjusted to essential competencies, indicators, and learning objectives. For more details, the following media product designs developed by researchers are presented.
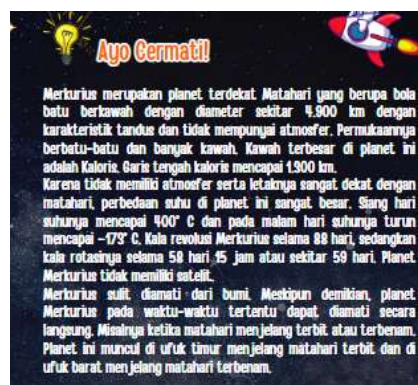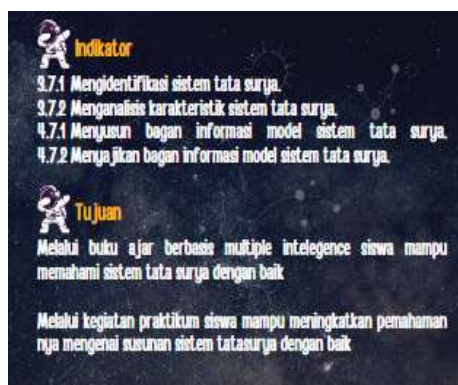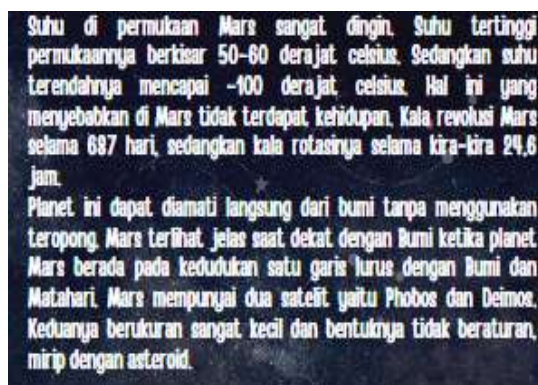
figure 1. Cover Learning materials

figure 2. Material display

Gambar 3. indicator

Gambar 4. Material explanation

Gambar 5. Musical intelligence

Gambar 6. Naturalist intelligence

The results of the feasibility assessment of teaching materials based on multiple intelligences

Media experts and material experts carried out a media feasibility assessment. Experts assessed several indicator aspects, namely the appearance of learning media, suitability with the curriculum, the content of learning media, and the legibility and use of learning media. These indicators follow the theory of several experts. According to (Daryanto, 2013, p. 16), prepared media must be integrated with the learning components.

Each expert provides validation of the feasibility of teaching materials based on multiple intelligences as follows

The feasibility of developing teaching materials based on multiple intelligences can be identified through testing and validation by media experts. The validation aims to determine the feasibility of the media needed for students. The media expert's assessment instrument consists of 4 assessment indicators, namely: 1) Presentation of layout, writing, picture illustrations, videos, and so on must be

clear; 2) The balance between the place, the position of the elements, the mix between the elements, the size of the elements, and the presence of the elements in the media; 3) The media has a design that is cohesive, consistent, and singular in terms of content composition such as writing, color palette, use of space and so on; 4) The size of the media according to the learning environment of students.

Table 1. Material Expert and Media Expert Validation Test Results

Assessment Validation	Value percentage	Category
Teaching materials expert validation	100%	Very Worth it
Material Expert Validation	90,6%	Very Worth it
Linguist Validation	87,5%	Very Worth it
Average score	92,%	Very Worth it

Based on Table 1. The results of the validation of teaching materials get a percentage of 100% in the "very appropriate" category, the language validation gets a percentage of 87.5% and the results of media validation get a percentage of 80.6% in the "very decent" category. From the validation results of material experts and media experts, it shows that the teaching materials based on multiple intelligences developed by researchers are declared very feasible to be tested.

Results of the Assessment of the Effectiveness of teaching materials based on multiple intelligences

The Effectiveness Test uses the One Group Pretest-Postest design to determine the increase in the average results of learning Indonesian. The effectiveness of using teaching materials based on multiple intelligences can be seen from the significant average difference between the pretest and posttest scores. Table 2. is a table of students' science learning outcomes that will be tested.

Table 2. Student learning outcomes

Information	Pretest	Posttest
Average value	56.8	87.5
Lowest score	40	65
The highest score	70	100
Number of students completed	1	30
Number of students not completed	29	0
Percentage of completeness (%)	3.4 %	100 %
Increase in the percentage of completeness	96.6 %	

Preliminary Data Analysis Results

From the initial data obtained, the researcher conducted an analysis of the normality test and the homogeneity of the pretest and posttest scores. The normality test is useful for detecting whether the data obtained in the population is normally distributed or not so that the data is in a normal distribution. The normality test in this study used the Lilliefors test with the help of Microsoft Excel 2010.

Table 3. Normality Test

category	n	α	L_{tabel}	L_{hitung}	Conclusion	Criteria
Pretest	30	5%	0,160	0,144	$L_{hitung} < L_{tabel}$ $0,144 < 0,160$	Population data is normally distributed
Posttest				0,136	$L_{hitung} < L_{tabel}$ $0,136 < 0,160$	Population data is normally distributed

Based on Table 3. the pretest learning outcomes with n = 30 and α = 5% obtained a L_count value of 0.144 while the L_(table) value was 0.160. Because the value of L_count < L_(table) is 0.144 <0.160, the value of H_0 is accepted, and H_1 is rejected. So it can be concluded that the pretest learning outcomes are normally distributed. For posttest learning outcomes with a value of n = 30 and α = 5%, the value of L_count is 0.136, and L_(table) is 0.160.

Because the value of L_count < L_(table) is 0.136 <0.160, the price of H_0 is accepted, and H_1 is rejected. So it can be concluded that the post-test learning outcomes are normally distributed.

The homogeneity test is helpful for finding data whether it has the same characteristics or not. The homogeneity test in this study used the Bartlett statistical chi-square test with the help of Microsoft Excel 2010.

Table 4. Homogeneity Test

dk	α	$\chi^2{}_{tabel}$	$\chi^2{}_{hitung}$	conclusion	Criteria
1	5%	3.841	0.363	$\chi^2{}_{hitung} \leq \chi^2{}_{tabel}$ $0.363 \leq 3.841$	Population data is homogeneous

Based on Table 4. calculations using the chi square formula (χ^2) get a value of $\llbracket\chi^2\rrbracket$ _count of 0.363 while the value of $\llbracket\chi^2\rrbracket$ _table with dk=1 and α=5% is 3.841. Because the value of $\llbracket\chi^2\rrbracket$ _count $\leq$ $\llbracket\chi^2\rrbracket$ _table is $0.363 \leq 3.841$, the value of H_0 is accepted while H_1 is rejected. It can be concluded that the resulting population data is homogeneous.

Results of Final Data Analysis

The t-test used is the paired sample t test or paired sample t test. The t-test is used to determine the difference in the average value of the pretest and posttest and is used to test the differences in pretest and posttest learning outcomes on the use of teaching materials based on multiple intelligences.

Table 5. Paired Sample T Test

df	α	$-t_{tabel}$	t_{hitung}	Conclusion	Criteria
29	5%	2,09	53,43	$t_{hitung} \leq -t_{tabel}$ $53,43 \leq 2,09$	The difference between the pretest and posttest scores is less than zero, so the pretest scores are less than the posttest scores.

Based on Table 5. The value of df = 19 with α = 5% obtains a -t_table value of -2.093. Based on calculations, the t_count value is 53.43. So it can be said that the value of t_count > -t_table is 53.43 > 2.093. So that the H_0 value is rejected and H_1 is accepted and it can be concluded that the data obtained has a difference in the pretest and

posttest values less than zero so that the pretest value is less than the posttest value.

The n-gain test is a statistical method test that is useful for knowing the increase in pretest and posttest scores so that there are criteria for low, medium, or high increases in pretest and posttest scores.

Table 6. N-Gain test

Nilai	Average Pretest	Average Posttest	Score maximum	N-gain	Criteria
Cognitif	56,8	83,5	100	0,617	Moderate

Based on Table 6, the cognitive value is the average pretest score of 56.8 while the posttest score is 83.5 with the highest score that can be obtained by students of 100. After calculations using the n-gain formula, the value of student learning outcomes in the cognitive aspect has an increase medium average. Based on calculations using the n-gain formula, students' psychomotor scores have an average increase of Moderate.

DISCUSSION
Development of teaching materials based on multiple intelligences
Teaching materials based on multiple intelligences have been developed through several stages (1) potentials and problems; (2) data collection; (3) product design; (4) design validation; (5) design revisions; (6) product trials; (7) product revisions; (8) trial use. The design for developing teaching materials based on multiple intelligences consists of covers, competency pages, materials, intelligence pages, and author profiles.

Feasibility of teaching materials based on multiple intelligences
Determination of the eligibility of teaching materials based on multiple intelligences is determined based on the results of the validator team's expert validation. The feasibility test conducted by the validator team aims to measure the feasibility of developing teaching materials based on multiple intelligences as teaching materials and provide input/suggestions if necessary. Based on the validation results obtained by the expert validator team, where the accumulated ratings are used as a percentage in the expert test teaching materials 100%, material experts 90.6% while media experts 87.5% shows that teaching materials based on multiple intelligences are very feasible to use as learning materials on the payload of science lessons on the material of the solar system.

The effectiveness of teaching materials based on multiple intelligences
The significant group use trial was conducted at SD Negeri Srondol Wetan 3 in class VI students with 30 students. In the large group use trial, the average pretest score was 56.8, with students who completed the KKM being one student, while the average score -the post-test average was 83.5 with 30 students who passed. The normality test used in the pretest and posttest learning outcomes data for large group use trials is the Liliefors test. Based on the calculations, it was obtained that the L_count pretest for large-group use trials was 0.144, while the L_count posttest for large-group product trials was 0.136. The value of L_(table) with n=30 and α=5% is 0.160. The value of L_count pretest < L_(table) shows that the pretest student learning outcomes are normally distributed. The posttest L_count value < L_(table) value shows that the posttest student learning outcomes are normally distributed. The homogeneity test used to analyze the value of pretest and posttest learning outcomes in large group use trials is to use the chi-square test (χ^2) obtained $\llbracket\chi^2\rrbracket$_count value of 0.363 and $\llbracket\chi^2\rrbracket$_table value with dk=1 and α= 5% obtained value 3.841. Because the value of $\llbracket\chi^2\rrbracket$_count ≤ $\llbracket\chi^2\rrbracket$_table, the pretest and posttest data are homogeneous. It can be concluded that students' pretest and posttest learning outcomes in the large group trials at SD Negeri Srondol Wetan 3 are homogeneous or come from the same group. In the next step, after the data is usually distributed and homogeneous, the researcher tests the differences in the pretest and posttest means through a paired t-test. Based on the calculation, the t_count value is 53.43, and the $\llbracket$-t$\rrbracket$_table value with df=19 and α=5% is 2.09. Because t_count > t_table value, the difference in pretest and posttest values in the significant group use trial is less than zero, so the pretest value is less than the posttest value, and there is a difference.

Next, the researcher calculated the n-gain test, which received a cognitive n-gain score of 0.617 with an average difference of 30.7. So that the n-gain value on the cognitive pretest and posttest learning outcomes in large-group use trials has a moderate category. Based on the paired t-test and n-gain tests, teaching materials based on multiple intelligences are effectively used as teaching materials. Several other studies that support the conduct reinforce student learning outcomes through teaching materials based on multiple intelligences (Arpiawan et al., 2022), conducting research that aims to develop learning tools with an inquiry model that can improve students' critical thinking skills. This study uses a 4D development model. This research produced learning tools of the inquiry model that were tested for validity, reliability, and n-Gain. The learning tools developed by (Arpiawan et al., 2022) are syllabi, lesson plans, worksheets, and critical thinking test instruments focusing on learning physics for high school students.

So based on this research, the use of teaching materials based on multiple intelligences in supporting science learning outcomes for class VI on solar system material both classically and independently can be said to be appropriate and able to overcome existing problems, especially in terms of increasing learning independence and students' understanding of system material. Solar packaged in teaching materials based on multiple intelligences.

CONCLUSION

This research uses Research and Development (RnD) research or development research. The product developed in this study is a teaching material based on multiple intelligences developed with Canva. Research development carried out according to the criteria of development research through 8 stages of Brog and Gall development has been successfully carried out by researchers. A team of expert validators tested the feasibility level of teaching materials based on multiple intelligences; the feasibility of presentation by teaching material experts was 100%, language experts were 87.5%, and content feasibility by material experts was 90.6%; based on the assessment by the validator team, the teaching materials were based on multiple intelligence is included in the very feasible category and can be tested on students. The normality test results obtained the value of the L_count pretest using the effective group trial use of 0.144, while the L_count posttest of the large group product trial was 0.136. The value of L_(table) with n=30 and α=5% is 0.160. So it can be concluded that the pretest and posttest data values are typically distributed. Based on the results of the n-gain test, the average increase in the pretest and posttest scores was 0.617, with the percentage of learning completeness increasing from 3.4% to 100%. The increase in average indicates that teaching materials based on multiple intelligences are effectively used as teaching materials and learning media.

REFERENCES
1. Agusta, A.R. 2021. Learning Model Gawi Sabumi Based on Local Wisdom to Improve Student's High Order Thinking Skills and Multiple Intelligence on Elementary School. International Journal of Social Science and Human Research, 04(11). Tersedia di http://ijsshr.in/v4i11/29.php [Accessed 5 Januari 2023].
2. Ajeng Nur Fadila 2016. Pengembangan bahan ajar ipa berbasis ensiklopedia pada materi struktur dan fungsi bagian tumbuhan kelas IV SDN tanjung kertosono.
3. Antika, R.N. & Nawawi, S. 2017. The effect of project based learning model in seminar course to student's creative thinking skills. JPBI (Jurnal Pendidikan Biologi Indonesia), 3(1): 72–79.

4. Ardiansyah, R., Diella, D. & Suhendi, H.Y. 2020. Pelatihan Pengembangan Perangkat Pembelajaran Abad 21 Dengan Model Pembelajaran Project Based Learning Berbasis STEM Bagi Guru IPA. Publikasi Pendidikan, 10(1): 31.

5. Arpiawan, N., A, S. & Sutrio 2022. Pengembangan Perangkat Pembelajaran Model Inkuiri Terbimbing Untuk Meningkatkan Hasil Belajar Fisika Peserta Didik. Jurnal Pendidikan Fisika dan Teknologi, 8(SpecialIssue): 31–37.

6. Fathani, A.H. 2016. Pengembangan Literasi Matematika Sekolah Dalam Perspektif Multiple Intelligences. 4.

7. Hj Azid @ Aziz, N., Yaacob, A. & Shaik-Abdullah, S. 2016. The Multiple Intelligence Based Enrichment Module on the Development of Human Potential: Examining its Impact and the Views of Teachers. Malaysian Journal of Learning and Instruction, (Vol. 13, No. 2 Dec 2016): 175–200.

8. Lou, S.-J., Chou, Y.-C., Shih, R.-C. & Chung, C.-C. 2017. A Study of Creativity in Cac2 Steamship-Derived Stem Project-Based Learning. EURASIA Journal of Mathematics, Science and Technology Education, 13(6). Tersedia di https://www.ejmste.com/article/a-study-of-creativity-in-cac2-steamship-derived-stem-project-based-learning-4776 [Accessed 5 Januari 2023].

9. Mareti, J.W. & Hadiyanti, A.H.D. 2021. Model Problem Based Learning Untuk Meningkatkan Kemampuan Berpikir Kritis dan Hasil Belajar IPA Siswa. Jurnal Elementaria Edukasia, 4(1). Tersedia di http://jurnal.unma.ac.id/index.php/jee/article/view/3047 [Accessed 18 Desember 2022]

10. Iya, M., Pitriani, S., Ningsih, Y., Andrean, S. & Ningsih, I. 2020. ANALISIS PEMBELAJARAN TEMATIK-INTEGRATIF BERBASIS MULTIPLE INTELLEGENCES DI ERA REVOLUSI INDUSTRI 4.0. El Midad, 12(1): 54–69.

11. Permendikbud 2018. Perubahan Atas Peraturan Menteri Pendidikan Dan Kebudayaan Nomor 24 Tahun 2016 Tentang Kompetensi Inti Dan Kompetensi Dasar Pelajaran Pada Kurikulum 2013 Pada Pendidikan Dasar Dan Pendidikan Menengah.

12. Prasetiyo, A. D. & Mubarokah, L 2016. Berpikir Kreatif Siswa Dalam Penerapan Model Pembelajaran Berdasar Masalah Matematika. Jurnal Pendidikan Matematika STKIP PGRI Sidoarjo, 2(1): 9–18.

13. Prasetiyo, A.D., Mubarokah, L. & Pos, J.J.K. 2014. Berpikir Kreatif Siswa Dalam Penerapan Model Pembelajaran Berdasar Masalah Matematika.

14. Pratiwi, K. P. 2018. Penerapan Model Pembelajaran Project Based Learning untuk Meningkatkan Keaktifan dan Motivasi Belajar Siswa Mata Pelajaran Simulasi dan Komunikasi Digital di SMKN 2 Klaten. Repository UNY.

15. Puspitasari, L., In'am, A. & Syaifuddin, M. 2018. Analysis of Students' Creative Thinking in Solving Arithmetic Problems. International Electronic Journal of Mathematics Education, 14(1). Tersedia di http://www.iejme.com/article/analysis-of-students-creative-thinking-in-solving-arithmetic-problems-3962 [Accessed 6 Januari 2023]

16. Ummah, S.K., In'am, A. & Azmi, R.D. 2019. Creating Manipulatives: Improving Students' Creativity Through Project-Based Learning. Journal on Mathematics Education, 10(1): 93–102.

17. Wahyudi, W., Waluya, S.B., Suyitno, H. & Isnarto, I. 2021. Schemata and creative thinking ability in cool-critical-creative-meaningful (3CM) learning. International Journal of Sustainability in Higher Education, 22(1): 1–28.

18. Wahyudi, Waluya, Suyitno, H, & Isnarto, I. 2018. Assimilation and Accommodation Processes in Improving Mathematical Creative Thinking with Scaffolding According to Learning Style. Journal of Physics: Conference Series, 1097(1).

19. Widia, W., Syahrir, S. & Sarnita, F. 2020. Berpikir Kreatif Merupakan Bagian Terpenting dalam Meningkatkan Life Skills di Era Industri 4.0. Jurnal Pendidikan Ilmu Pengetahuan Alam (JP-IPA), 1(02): 1–6.

20. Widiana, I.W. & Jampel, I.N. 2016. Improving Students' Creative Thinking and Achievement through The Implementation of Multiple Intelligence Approach with Mind Mapping. International Journal of Evaluation and Research in Education (IJERE), 5(3): 246.

21. Wiratama, N.A. & Agustin, A. 2021. Pengembangan Modul Pembelajaran Tema Sistem Tata Surya Pada Siswa Kelas IV SDN Gedongombo 6 Kabupaten Tuban. Efektor, 8(1): 69–78.

22. Yenny Suzana & Imam Jayanto 2021. Teori Belajar & Pembelajaran. Cetakan 1 ed. Batu: Literasi Nusantara.

******