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THE EFFECT OF LOCAL WISDOM-CONTAINED MODEL SETS ON ECOSYSTEM MATERIAL ON STUDENTS' CREATIVE THINKING

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ABSTRACT

Ecosystem material is important to study, the use of the SETS learning approach is very good for students. This research aims to determine the effect of SETS learning containing local wisdom on the creative thinking of students at SMA Negeri 9 Pekanbaru. Pekanbaru in November, even semester of the 2024/2025 academic year. This research is a quantitative research using a quasi-experiment method then using The Matching only Pretest-Posttest Control Group Design, by conducting initial tests and final tests in the experimental class and control class. Data collection is carried out through pretest, posttest, student activity observation sheets, creative students and teachers. The research sample consisted of 80 students, namely 40 students in class X.1, namely the control class and 40 students in class -t Independent 2 samples. The average N-Gain in the experimental class was 0.5463 in the low category, while in the control class it was 0.2094 in the very low category. Based on statistical analysis of the N-Gain value, there is a significant difference between the N Gain of the control class and the experimental class. Thus, it can be concluded that there is an influence of SETS learning containing local wisdom on the creative thinking of students at SMA Negeri 9 Pekanbaru, Pekanbaru for the 2024/2025 academic year.

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INTRODUCTION

The 21st century has seen rapid developments in technology, information, and communication. The 21st century requires high-quality human resources with expertise, high-level thinking skills, creativity, skill, collaboration, understanding of various cultures, and the ability to communicate and learn throughout life. John Dewey (1916) advocated from the outset that students should be taught thinking skills.

Creative thinking skills are essential for students. Creative thinking allows students to be more open to problems and to consider more than just one solution, but rather multiple approaches. Therefore, students' creative thinking skills must be enhanced (Ayu et al., 2020).

One of the goals of the Indonesian curriculum that students must achieve is creative thinking skills, categorized as High-Order Thinking (HOT) skills (Faturohman et al., 2020). This demonstrates the importance of creative thinking skills in all fields, including science, as a benchmark for learning success (Rachmantika et al., 2022).

Therefore, learning must positively contribute to the growth and development of student creativity. Creative thinking is one of the skills students must possess to face the various challenges emerging in the 21st century (Sa'idah et al., 2021).

Creative thinking skills will be successful if they are implemented by integrating local wisdom into learning. As stated by Pristiwanti et al. (2022), education plays a crucial role in enhancing individual knowledge. Conscious efforts are made to create a learning environment and learning process that enable individuals to actively develop their potential.

Local wisdom is useful in revealing structures for classifying environmental situations. Local wisdom is a field of scientific study that seeks to understand how indigenous communities understand nature (Fahrozy et al., 2022).

Various efforts have been made by various parties, including teachers, the government, and researchers, many of whom have conducted experiments to develop creative thinking. Teachers have conducted training, seminars, teacher council discussions, experimented with new classroom methods, and provided guidance and motivation to students. However, in reality, creative thinking has not developed optimally.

According to Rozi et al. (2022), the cause of low creative thinking skills is the persistence of student errors in solving mathematical creative thinking problems, which lie in the process of creating mathematical models, identifying the adequacy of elements and concepts, and errors in arithmetic operations.

Meanwhile, Wanelly et al. (2020) stated that low creative thinking skills are due to students' lack of familiarity with finding alternative ways to solve problems they are studying. Faturohman et al., (2020) said that the ability to think creatively is one of the abilities that needs more attention in the learning process both inside and outside the classroom.

A student's low level of creative thinking is usually reflected in their lack of ability to communicate ideas. They answer questions based on teacher illustrations or textbooks. Furthermore, students tend to memorize or simply copy what their teacher teaches, thus underperforming their original problem-solving abilities (Muslih et al., 2021).

Education and culture in Indonesia are interconnected and interconnected with life (Mufidah & Muslim, 2024). A quality national life is essential for survival in the era of

globalization, which is constantly changing with developments in knowledge, technology, arts, and culture (Songkares et al., 2021).

Furthermore, the integration of local wisdom into learning remains a key finding. According to Mulyani (2020), incorporating local wisdom into the learning process as a learning resource can foster students who care about cultural heritage. The goal is to align intellectual potential with the emotional, social, and spiritual intelligence that students need to compete (Dhiku, 2023).

Ngada Regency possesses a variety of local wisdom, such as language, knowledge systems, social organizational systems, religious systems, and arts, which can serve as guidelines for teachers in classroom learning (Lidi, Ningsih & Dhiki, 2020). Teachers are expected to find or develop more varied learning strategies, as each student is unique, thus optimally enhancing creative thinking skills (Wijayanto et al., 2021).

This corroborates the findings of Lasmana and Idris (2021) at Riau Islamic University students. Based on the results of the data processing and analysis described above, it can be concluded that the profile of critical and creative thinking skills in Biology learning for grade XI science students at SMAN 9 Pekanbaru in the 2020/2021 academic year was generally in the poor category.

PISA data obtained from ACI shows that the creative abilities of Indonesian students are very low. Only 5 percent of Indonesian students are considered proficient in creative thinking, while more than 50 percent of Singaporean students are considered capable of demonstrating creative thinking patterns.

Based on the statement above, numerous problems exist in education, particularly in terms of students' creative thinking and lack of knowledge about local wisdom. Therefore, a solution is needed to address these issues, one of which is the SETS learning approach, which incorporates local wisdom.

SETS is a learning model that connects the elements required for this learning: science, technology, and society. Regarding the identified problems, one student-centered learning model that can improve students' scientific literacy is the Science, Environment, Technology, and Society (SETS) model (Julianto, 2022).

SETS learning aligns with this learning orientation because it makes sense for students. The focus of SETS teaching is on how to enable students to conduct investigations to gain knowledge about the interconnectedness of science, the environment, technology, and society (Hardianti et al., 2021).

SETS also aims to empower students to practice critical and logical thinking through research, so that students actively develop their understanding of science through their reasoning and thinking skills (Rikizaputra et al., 2023).

Integrating local wisdom into the learning process requires an approach. One suitable approach to integrating local wisdom is the SETS approach. The SETS (Science, Environment, Technology, and Society) approach is a list of students' science that can be improved through activities or knowledge regarding problems that students often encounter in their daily environment (Itaunada & Rechmadiarti, 2023). Therefore, a study was conducted on the Effect of SETS Learning Containing Local Wisdom on Creative Thinking of Students of SMAN 9 Pekanbaru.

METHOD

This research includes experimental research using the quasi-experimental method and then using the Matching Only Pretest-Posttest Control Group Design, by conducting the first and second tests which were carried out on the control class and the experimental class (Fraenkel and Wallen, 1990). There were two classes named the control class and the experimental class, then given pretest and posttest questions to determine the initial and final abilities between the control class and the experimental class.

Table 1. Research Design

Class	Pretest	Treatment	Posttest
Control Class	O1	X1	O2
Experimental Class	O1	X2	O2

Description:
X1: Conventional learning
X2: SETS learning containing local wisdom
O1: Pretest
O2: Posttest

This research was conducted in the odd semester of the 2024/2025 academic year in the classrooms of SMA Negeri 9 Pekanbaru. The population was all 10th-grade students of SMAN 9 Pekanbaru, comprising eight classes, totaling 325. The sample consisted of classes X1 and X2, selected using simple random sampling. The research parameter was creative thinking. The research instruments used consisted of a learning tool in the form of an ecosystem teaching module and a data collection instrument in the form of a 30-item multiple-choice creative thinking test that had been tested for validity, reliability, discrimination, and difficulty level.

Data analysis was conducted using a quantitative approach. The increase in creative thinking ability was calculated using the N-Gain formula (Meltzer, 2002). The formula is as follows:

Information :
Spost: Posttest score
Spre: Pretest score
Smax: Ideal maximum score

To test the comparative hypothesis, a two-sample t-test (independent sample t-test) is used for parametric (if the data is normally distributed) or the Mann-Whitney U-test for non-parametric. The t-test is used if the data is normal or homogeneous. To determine normal data, normality and homogeneity tests are used (Sugiyono, 2010).

a. Normality Test

A normality test is needed to determine the distribution of data. One method used to test data normality is the Kolmogorov-Smirnov Method (KS-21). The Kolmogorov-Smirnov test formula is:

$$KS = | Fn_{(Yi-1)} - Fo_{(Yi)} |$$

Description:

KS : Calculated KS value
Fn(Yi – 1) : Cumulative percentage frequency at time before i
Fo(Yi) : Frequency of normally distributed data at time i

Homogeneity Test

The homogeneity test is conducted to determine the uniformity of research data. In regression analysis, good research data must have a homogeneous data distribution, and the method used to test this is the Levene's Test.
The Levene's Test formula is as follows (Sugiyono, 2010):

Description
L: Levene's calculated value
X: Residual data value
x: Mean residual data N: Number of samples
K: Number of groups

Uji-t

Sugiyono (2010) stated that testing the hypothesis with the t-test formula is as below:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{S_1^2 + S_2^2}}$$

Description:
X1: Average value of the experimental group
X2: Average value of the control group
S2: Variance of the experimental group's values
S2: Variance of the control group's values

To test the research hypothesis, the following statistical hypotheses were formulated:
Ho: The application of SETS learning with local wisdom to ecosystems material does not significantly influence high school students' creative thinking.
H_1: The application of SETS learning with local wisdom to ecosystems material does not significantly influence high school students' creative thinking.

RESULTS AND DISCUSSION

Based on the analysis of the collected research data, the following recapitulation of pretest and posttest data was obtained for the experimental and control classes:

Table 2. Descriptive Statistics of Pretest and Posttest Scores

Kelas		N	Hasil Belajar			Rerata
			Nilai ideal	Nilai Minimum	Nilai Maksimum	
Pretest	Kontrol	40	100	43.33	66.66	51.49
	Eksperimen	40	100	40.00	60.00	50.58
Posttest	Kontrol	40	100	36.66	76.66	62.07
	Eksperimen	40	100	70.00	93.33	77.83

Based on Table 2 above, it can be seen that the ideal value for each data group in each class is set at 100. The minimum pretest scores for the control and experimental classes were 43.33 and 40.00, respectively, and the maximum scores were 66.66 and 60.00, respectively. The pretest averages for the control and experimental classes were 51.49 and 50.58, respectively. The pretest average for the control class was slightly higher than the pretest average for the experimental class, while the posttest averages for the control and experimental classes showed a larger difference, at 62.07 and 77.83.

To determine the significance of the differences in the pretest and posttest averages for the control and experimental classes, a comparative hypothesis test was conducted. The comparative test used was the U-Mann-Whitney test because the data were found to be non-normally distributed during the normality and homogeneity testing phase. The results of the U-Mann-Whitney test are shown in Table 3 below:

Table 3. Hasil *u-mann whitney* Data *Pretest dan posttest*

Data Type	Sig.(2-tailed)	α	Decision	Information
Pretest	0.780	0.05	Accept H0	Not significantly different
Posttest	0.000	0.05	Reject H0	Significantly different

Table 3 shows that the average pretest scores for the control and experimental classes did not differ significantly, with a Sig. (2-tailed) value greater than the α value. Meanwhile, the posttest scores for the experimental and control classes showed a significant difference, with a Sig. (2-tailed) value smaller than the α value. These data indicate that students have the same initial creative thinking skills on ecosystems material. This is because both classes have not received any instruction related to the material. Prior knowledge is capital for students in learning activities, because learning activities are a vehicle for the process of negotiation of meaning between teachers and students regarding the learning material (Payung, 2016). It can be seen that in the control and experimental classes, the average pretest score for the control class was 51.49, while the average pretest score for the experimental class was 50.5. Therefore, it can be

concluded that prior knowledge, especially in creative thinking, for students of SMA Negeri 9 Pekanbaru, class X1 control and class X2 experimental, is low. Then it can be seen in the Sig. (2-tailed) value for the posttest data in the control class and the experimental class is 0.000 <0.05 then the decision obtained is to reject H0 which means there is a significant difference between the posttest of the control class and the posttest of the experimental class. This shows that students in the control class and the experimental class after receiving treatment, where in the control class were given the lecture learning method treatment with ecosystem material so that they got an average score obtained by the posttest score in the control class which was 62.07%. then in the experimental class were given the SETS learning approach treatment with ecosystem material so that they got an average posttest score in the experimental class of 77.83%. So it can be seen that the different results with the average value of the experimental class were higher than the control class which shows that the SETS approach learning was very effective.

Athifah and Syafriani (2019) found that the initial creative thinking ability of class XI students at MAN 1 Pekanbaru was 63.7% in the low category. Based on the results of interviews with students, the low creative thinking ability was due to the majority of students being unfamiliar with the format of questions given by the researcher. A different opinion was found in the research of Lasmana and Idris (2021) who found that the creative thinking ability of class XI IPA students at SMAN 9 Pekanbaru, presented based on material about cells, was 71.5% in the low category. In line with Lasmana and Idris (2021), they stated that based on the results of data processing and analysis of the research data described, it can be concluded that the profile of critical and creative thinking abilities in Biology learning for class XI IPA students at SMAN 9 Pekanbaru in the 2020/2021 academic year, the average critical thinking ability was 75.0% in the low category. The average creative thinking ability was 71.5% in the low category. The magnitude of the increase in students' creative thinking after participating in SETS learning containing local wisdom in the experimental class and conventional learning in the control class can be seen through the N-Gain test. The N-Gain recapitulation is as follows.

Table 4: Summary of N-Gain Results for Control Class and Experimental Class

No	Class	N	Results			Average	Category
			Ideal	Minimum	Maximum		
1	Control	40	1.00	-0.13	0.60	.2094	Low
2	Eksperiment	40	1.00	-0.25	0.85	.5463	Currently

Based on Table 4, the minimum N-gain value for the control class is 0.13, while for the experimental class it is 0.25. The maximum N-gain value for the control class is 0.60 and for the experimental class it is 0.85. The average value for the control class is 0.2094, in the low category, while for the experimental class it is 0.5463, in the medium category.

The following are the N-gain results for each student in the control and experimental classes, as depicted in the following line diagram :

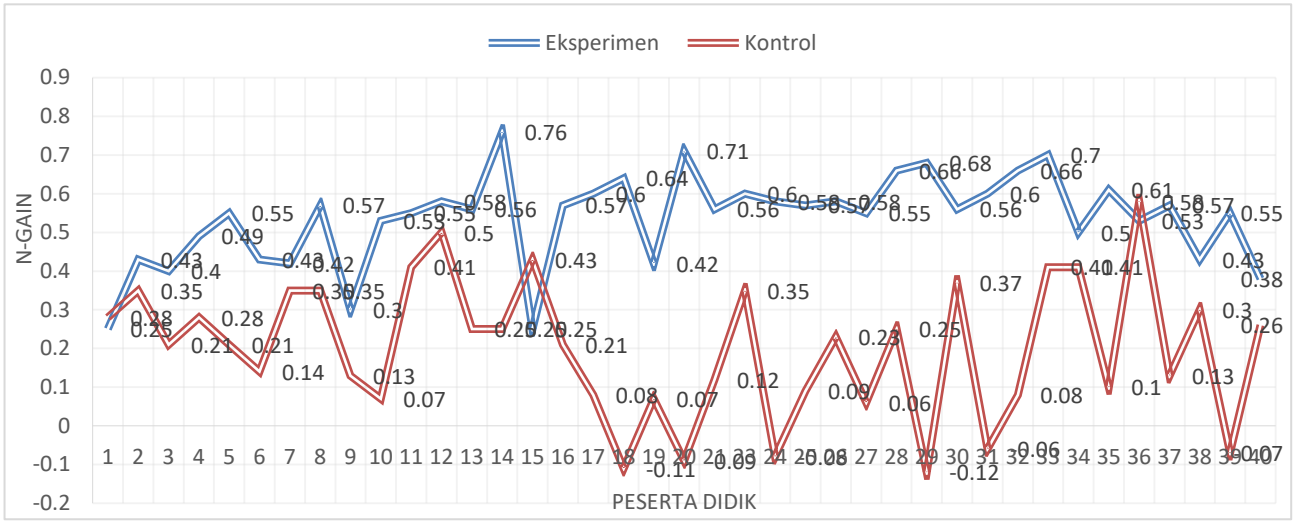


Figure 1: Line diagram comparing the N-gain values of the control class and the experimental class.

Based on Figure 1 above, it can be seen that the N-gain of each control class student is 40 students and the experimental class is 40 students. The minimum N-gain value for the control class is -0.13 while for the experimental class it is -0.25. The maximum N-gain value for the control class is 0.60 and the experimental class is 0.85. Overall, it can be seen that the N-gain value for the experimental class is higher than the control class.

The N-gain data from the control and experimental classes were then analyzed using normality tests, homogeneity tests, and comparative hypothesis tests. If the data were normally distributed and homogeneous, a t-test was used. However, if the data were not normally distributed and homogeneous, non-parametric statistics, such as the Mann-Whitney U-test, were used.

The normality test was conducted as a prerequisite for determining further tests using parametric and non-parametric statistics. The Kolmogorov-Smirnov (KS-21) normality test for data distribution was used. The results of the N-gain normality test for the control and experimental classes are presented in Table 5 below:

Table 5. Summary of N-gain Normality Test Results

Classs	Asymp. Sig (2-tailed)	α	Decision	Information
Control	0.200	0.05	Accept H0	Normal
Eksperiment	0.002	0.05	Reject H0	Abnormal

Based on Table 5, the results of the N-gain normality test for the control and experimental classes were obtained with a significance level (α) of 0.05. The Asymp. Sig. (2-tailed) value for the control class was 0.200 > 0.05, indicating a normal distribution. Meanwhile, the Asymp. Sig. (2-tailed) value for the experimental class was 0.002 < 0.05, indicating a non-normal distribution.

The N-gain data, which were normally distributed, were then subjected to an N-gain data homogeneity test. The homogeneity test aims to determine the homogeneity of data variance. The data for the homogeneity test was analyzed using the Levene test. The results of the homogeneity test for the control and experimental classes are shown in the table below:

Table 6. Summary of N-gain Homogeneity Test Results

Data Type	Based on trimmed mean	α	Decision	Decision
N-gain	0.161	0.05	Accept H0	Homogen

Based on Table 6, the homogeneity test results based on the trimmed mean in the Levene test table are 0.161 > 0.05 with a significance level (α) of 0.05. The decision is to accept H0. This means that the N-gain data for the control and experimental classes come from homogeneous variances.

After the N-gain data for the control class were found to be normally distributed, while the experimental class was found to be non-normally distributed and homogeneous, one reason for the non-normal distribution is the presence of outliers, or data that produces negative numbers or exceeds the zero limit.

Outliers are data with extreme scores, either extremely high or extremely low. Because the data is non-normal, a decision can be made to conduct a comparative hypothesis test, namely the Mann-Whitney U-test. This comparative hypothesis test is useful for determining whether there are significant differences. The results of the Mann-Whitney U-test are shown in Table 7 below:

Table 7. Summary of U-Mann Test Results with N-gain Data

Data Type	Sig. (2-tailed)	α	Decision	Information
N-gain	0.000	0.05	Reject H1	Significantly different

Based on Table 7, the Sig. (2-tailed) for the N-gain data in the control and experimental classes is 0.000 < 0.05, with the decision to reject H1, indicating a significant difference in the N-gain between the control and experimental classes. This is because the experimental class implemented a SETS learning approach, incorporating local wisdom, to foster students' creative thinking on the Ecosystem topic, while the control class implemented a conventional learning model with the lecture method. This difference in the implementation of learning models affects student learning outcomes. The results of the study revealed that the experimental class achieved higher learning outcomes than the control class, indicating that the SETS learning approach is effective in improving students' creative thinking skills.

Other research has found a significant difference in creative thinking skills between classes using a project-based learning model with the SETS approach and classes using the project-based learning method without the approach (Wahyuni et al., 2021). This difference proved significant at the 0.05 level, demonstrating the effectiveness of the SETS approach in enhancing student creativity. Meanwhile, Pokhrel's (2024) research by conducting an Independent T-test showed that the comparison between the two resulted in a significant value (Sig.2-tailed) obtained of 0.000 which was smaller than the significance level of 0.05, it can be said that Sig. (2-tailed) <

sig 0.05 (0.000 < 0.05). So it can be said that Ha is accepted and Ho is rejected. So it can be concluded that there is a significant influence of the SETS (Science, Environment, Technology, and Society) learning model on students' scientific literacy on environmental pollution material.

Based on the results of the N-Gain score test calculation above, it shows that the average N-Gain score of the experimental class (SETS learning model) is 69.8672 or 69.8%, including the high category, which is quite effective. The minimum N-Gain value is 53.8% and the highest is 81.2%, while the average N-Gain in the control class (Conventional model) is 39.0628 or 39%, including the ineffective category, the minimum N-Gain score is 11% and the maximum is 57.1% (trimo saputro et al,. 2022).

CONCLUSION

Based on the results of the research and data analysis that have been carried out, it can be concluded that there is an influence of SETS learning containing local wisdom on the creative thinking of students of SMA Negeri 9 Pekanbaru. Based on the results of the analysis obtained U-Mann Whitney N-Gain with Sig. (2-tailed) 0.000 <0.05 the decision to reject H0 means a significant difference. Showing that there is an increase in learning outcomes in ecosystem material where the results of the experimental class scores are higher than the results of the control class scores after being given behavior to the control class with lecture mode, then the experimental class, namely the SETS learning approach with ecosystem material, resulting in a different impact from the two classes.

BIBLIOGRAPHY

Arsyad, Azhar. 2007. Media Pembelajaran. Jakarta: Raja Grafindo Persada.

Arikunto. 2006. Prosedur Penelitian Suatu Pendekatan Praktek. Jakarta : PT. Rineka Cipta.

Arikunto, S. 2005. Prosedur Penelitian Suatu Pendekatan Praktik. Jakarta: Rineka Cipta.

Arikunto, Suharsimi. 2011. Dasar-Dasar Evaluasi Pendidikan Edisi Revisi. Jakarta: Bumi Aksara.

Arikunto, S. 2013.Prosedur Penelitian Suatu Pendekatan Praktik. Edisi Revisi. Jakarta: PT. Rineka Cipta.

Athifah., Syafriani. 2019. Analysis of Students Creative Thinking Ability in Physics Learning. Journal of Physics: Conf. Series 1185

Aripin Nurmantono, M., Saefullah Kamali, A., Ulfah Sutarba, M., & Hernawan, I. (2022). Apakah Pembelajaran Berbasis Proyek Dan Berbasis Masalah Dapat Meningkatkan Penguasaan Konsep Dan Kemampuan Berpikir Kreatif Siswamadrasah? Gema Wiralodra, 13, 306.

Dhiku, D. D., Laksana, D. N. L., & Wau, M. P. (2023). Studi Kelayakan Konten Dan Desain: Bahan Ajar Multilingual Berbasis Konten Dan Konteks Budaya Lokal Etnis Ngada Untuk Siswa Sd. Jurnal Pendidikan Dasar Flobamorata, 4(1), 368–375. https://doi.org/10.51494/jpdf.v4i1.813

Lidi, M. W., Ningsih, & Dhiki, Y. Y. (2020). Identifikasi Potensi Kearifan Loka Masyarakat Golewa Kabupaten Ngada Sebagai Upaya Pengembangan Di Bidang Pendidikan. OPTIKA: Jurnal Pendidikan Fisika, 4(1), 21-29. https://doi.org/10.37478/optika.v4i1.332

Dewey, (1916). *Democracy and Education. The Free press.*

David, Fred R. 2002. Manajemen Strategis: Konsep. Jakarta: Prenhallindo. Dirgantoro, Crown. 2001. Manajemen Stratejik: Konsep, Kasus, dan Implementasi. Jakarta: Grasindo.

Pristiwanti, D., Badariah, B., Hidayat, S., & Dewi, R. S. (2022). Pengertian Pendidikan. Jurnal Pendidikan Dan Konseling (JPDK), 4(6), 1707–1715

Fazrina, Hanisya Nurul, Otib Satibi Hidayat, and Uswatun Hasanah. 2023. "Pengaruh Pendekatan I-SETS (Islamic-Science, Environment, Technology, Society) Terhadap Hasil Belajar IPA Siswa Sekolah Dasar." *Jurnal Basicedu* 7(2): 1348–55. doi:10.31004/basicedu.v7i2.5130.

Faturohman, I., & Afriansyah, E. A. (2020). Peningkatan Kemampuan Berpikir Kreatif Matematis Siswa melalui Creative Problem Solving. Mosharafa: Jurnal Pendidikan Matematika, 9(1), 107–118. https://doi.org/10.3198 0/mosharafa.v9i1.562

Fahrozy, F. P. N., Irianto, D. M., & Kurniawan, D. T. (2022). Etnosains sebagai Upaya Belajar secara Kontekstual dan Lingkungan pada Peserta Didik di Sekolah Dasar. Edukatif : Jurnal Ilmu Pendidikan, 4(3), 4337–4345. https://doi.org/10.31004/edukatif.v4i3.2843

Fraenkel, Jack. R and Norman E. Wallen. (1990). How to Design and Evaluate Research in Education USA, San Fransisco State University.

Hardianti, F., Setiadi, D., Syukur, A., & Merta, I. W. (2021). Pengembangan Bahan Ajar Berbasis SETS (Science, Environment, Technology, Society) Untuk Meningkatkan Literasi Sains Peserta Didik. Jurnal Pijar Mipa, 16(1), 68–74. https://doi.org/10.29303/jpm.v16i1.1636

Hines, M. ., Catalana, S. & Anderson, B. . (2019). When Learning Sinks In: Using the Incubation Model of Teaching to Guide Students Through the Creative Thinking Process. Gifted Child

Today, Vol. 42 No. 1: 36–45. https://doi. org/10.1177/1076217518804858.

Hamdiyah, Heni, Bachtiar Sjaiful Bachri, and Fajar Arianto. 2025. "Pengaruh Project Based Learning Dengan Pendekatan Science , Enviroment , Technology and Society (SETS) Terhadap Keterampilan Berpikir Kreatif Siswa SMK." 7(3): 1166–77.

Hanany, F., & Sumaji, S. (2021). Berfikir Kreatif Dalam Matematika. JURNAL SILOGISME : Kajian Ilmu Matematika Dan Pembelajarannya, 5(2), 77. https://doi.org/10.24269/silogisme.v5i2.2888

I Ketut Gobyah, "Berpijak pada Kearifan Lokal", dalam http://www.balipos. co.id , didownload 17/9/03.

Itaunada, & Rachmadiarti, F. (2023). Pengembangan E-Lkpd Berbasis Sets (Science, Environment, Technology, and Society) Pada Sub Materi Pencemaran Lingkungan Untuk Melatihkan Keterampilan Literasi Sains Siswa. Berkala Ilmiah Pendidikan Biologi (BIOEDU), 12(3), 813–823.

Julianto, E. (2022). Penerapan Pendekatan Science Environment Technology and Society (SETS) untuk Meningkatkan Literasi Sains Siswa di Sekolah Dasar. COMSERVA : Jurnal Penelitian Dan Pengabdian Masyarakat, 2(7), 1219– 1239. https://doi.org/10.59141/comserva.v2i7.507

Jumanto, J., & Adi, Y. K. (2023). Profil Kemampuan Berpikir Kreatif Peserta Didik Kelas Vi Ditinjau Dari Prestasi Akademik. *Jurnal Sinektik*, *5*(1), 82–87. https://doi.org/10.33061/js.v5i1.7533.

Jailani, Sugiman, Heri, R., Bukhori, Ezi, A., Hasan, D., & Zainal, A. (2018). Desain Pembelajaran Matematika Untuk Melatih Higher Order Thinking Skills. Yogyakarta: UNY PRESS.

Kurniawati, S. P., Kumala, F. N., & Yasa, A. D. (2019). SETS (Science, Enviroment, Technology, And Society) : Sikap Ilmiah Siswa Sekolah Dasar. Seminar Nasional PGSD UNIKAMA, 3, 558–569. Retrieved from https://conference.unikama.ac.id/artikel/index.php/pgsd/article/view/77

Lasmana, Nursyahrani, and Tengku Idris. 2021. "Profil Kemampuan Berpikir Krit is Dan Kreatif Pada Pembelajaran Biologi Siswa Kelas XI IPA SMAN 9 Pekanbaru." *Industry and Higher Education* 3(1): 1689–99.

Lilyanti M. Payung, dkk (2016). Pengaruh Pengetahuan Awal, Kecerdasan Emosional,Dan Motivasi Belajar Terhadap Hasil Belajar IPA Siswa Kelas VIII SMP Negeri 3 Parigi. 2e-Jurnal Mitra Sains, Volume 4 Nomor 3, Juli 2016 hlm 59-67.

Mufidah, L., & Muslim, A. H. (2024). Pengembangan Media Pembelajaran Engklek Berbasis Culturally Responsive Teaching Dalam Pembelajaran Ipas Di Kelas Iv Sd Negeri Tambaksogra 2: Penelitian Research and Development (R&D). Didaktik : Jurnal Ilmiah PGSD STKIP Subang, 10(2), 949 – 963 https://doi.org/10.36989/didaktik.v10i2.2946.

Mulyani, S. (2020). Pengembangan Lembar Kerja Siswa (Lks) Berbasis Kearifan Lokal Dengan Pendekatan Contextual Teaching And Learning (Ctl) Sub Tema Perubahan Lingkungan Untuk Meningkatkan Keterampilan Berpikir Kritis Siswa. Jurnal Prakarsa Paedagogia, 2(2). https://doi.org/10.24176/jpp.v2i2.4179.

Muslih, M., & Dkk. (2021). Inovasi Pendidikan Dan Praktik Pembelajaran Kreatif.

Munandar, Utami. 2012. Pengembangan Kreativitas Anak Berbakat. Jakarta Rineka Cipta.

Mashitoh, N. L. D., Sukestiyarno, Y. ., & Wardono. (2019). Analisis Kemampuan Berpikir Kreatif Berdasarkan Teori Wallas pada Materi Geometri Kelas VIII. *Unnes : Universitas Negeri Semarang*, *21*(1), 229–234.

Meltzer,David E .2002.The Relationship Between Mathematics PreparationAnd conceptual learning gain in physics:A possible inhidden Variablei in Diagnostic pretest scores.Ames:Department of physics and Astronomy,Lowa State University.

Njatrijani, R. (2018). Kearifan Lokal Dalam Perspektif Budaya Kota Semarang Gema Keadilan Edisi Jurnal Gema Keadilan Edisi Jurnal. *Gema Keadilan Edisi Jurnal 17*, *5*(September), 16–31.

Pristiwanti, D., Badariah, B., Hidayat, S., & Dewi, R. S. (2022). Pengertian Pendidikan. Jurnal Pendidikan Dan Konseling (JPDK), 4(6), 1707–1715

Pamungkas, A., Subali, B., & Linuwih, S. (2017). Implementasi model pembelajaran IPA berbasis kearifan lokal untuk meningkatkan kreativitas dan hasil belajar siswa. *Jurnal Inovasi Pendidikan IPA*, *3*(2), 118. https://doi .org/10.21831/jipi.v3i2.14562.

Pokhrel, Sakinah. 2024. 15 Αγαη *No TitleΕΛΕΝΗ*.

Qadri, L., Ikhsan, M., & Yusrizal, Y. (2019). Mathematical Creative Thinking Ability for Students Through REACT Strategies. International Journal for Educational and Vocational Studies, Vol. 1 No. 1: 58–61. https://doi.org/10 .29103/ijevs.v1i1.1483.

Rikizaputra, Firda, A., & Sari, F. R. (2023). Model SETS Bermuatan Etnosains: Pengaruhnya terhadap Literasi Sains Siswa. Bio-Lectura: Jurnal Pendidikan Biologi, 10(2), 280–288.

Rachmantika, A. R., Waluya, S. B., & Isnarto, I. (2022). Kemampuan Berpikir Kreatif Matematis pada Pembelajaran Project Based Learning dengan Setting Daring. Edukatif : Jurnal Ilmu Pendidikan, 4(2), 2609–2615. https: //doi.org/10.31004/edukatif.v4i2.1100

Rohmatun, H., & Rasyid, A. (2022). Model Pembelajaran SETS (Science, Environment, Technologi, Society) Berbantuan Media Video Terhadap Pemaham Konsep Siswa. *Seminar Nasional Pendidikan*, *4*, 118–125.

Rozi, F. A., & Afriansyah, E. A. (2022). Analisis Kemampuan Berpikir Kreatif Matematis Berdasarkan Disposisi Matematis Peserta Didik. Journal of Authentic Research on Mathematics Education (JARME), 4(2), 172–185. http://repositori.unsil.ac.id/id/eprint/3288%0Ahttp://repositori.unsil.ac.id/3288/8/11

Ruhimat, Toto. dkk. (2011). Kurikulum dan Pembelajaran. Jakarta: PT Raja Grafindo Persada.

Rahardhian, A. (2022). Pengaruh Pembelajaran Pjbl Berbasis Stem Terhadap Kemampuan Berpikir Kritis Siswa Pada Materi Listrik Dinamis. Jurnal Inovasi Penelitian Dan Pembelajaran Fisika, 3(1), 1-9. https://doi.org/10.26418/jippf.v3i1.50882.

Sa'idah, U., & Siswanto, B. (2021). Students ' Creative Thinking Abilit y in Solving Open-Ended Questions. 597, 275–280.

Songkares, M. F., Kua, M. Y., & Ariyani, N. W. P. (2021). Pengembangan Lembar Kerja Siswa Multi Representase Dengan Real World Problemberbasis Kearifan Lokal Ngada Pada Pembelajaran IPA Untuk Siswa Smp Kelas VII Jurnal Citra Pendidikan, 1(4), 576-586. https://doi.org/10.38048/jcp.v1i4.338

Schindler, M., & Lilienthal, A. J. (2022). Students' collaborative creative proces and its phases in mathematics: an explorative study using dual eye tracking and stimulated recall interviews.

ZDM - Mathematics Education, 54(1), 163–178. https://doi.org/10.1007/s11858-022-01327-9

Sukamto. (2009). Dasar-Dasar Pembuatan LKS yang Baik dan Benar sebagai Media Pembelajaran. Jakarta: PT Kencana.

Steel, Piers. (2010). Arousal, avoidant and decisional procrastinators: Do they exist? Personality and Individual Differences, 48(8), 1–9.

Sartini. (2004). Menggali Kearifan Lokal Nusantara. *Jurnal Filsafat*, *37*(2), 111–120.

Sugiyono. (2017). Metode Penelitian Kuantitatif, Kualitatif, R & D. Bandung: CV Alfabeta.

Setiyadi, M. W., Ismail, & Gani, H. A. (2017). Pengembangan Modul Pembelajaran Biologi Berbasis Pendekatan Saintifik Untuk Meningkatkan Hasil Belajar Siswa. Journal of Educational Science and Technology (EST), 3(2), 104.

Sugiyono. (2009). Metode Penelitian Kuantitatif Kualitatif dan R & D. Bandung: Alfabeta.

Sartika, Ida Ayu Kade, Wayan Sadia dan Wayan Muderawan. 2013. Pengaruh Model Pembelajaran Berbasis Proyek Terhadap Pemahaman Konsep Kimia Dan Keterampilan Berpikir Kritis. e-Journal Program Pascasarjana Universitas Pendidikan Ganesha. Vol 3 tahun 2013.

Suyanto, dan Asep Jihad.2013.Menjadi Guru Profesional, Strategi meningkatkan Kualifikasi dan Kualitas Guru di Era Global. Jakarta : Esensi Erlangga Group.

Trimo saputro, maharani damayanti, indra gunawan, anggun lia putri, dona miranda, oktasari. 2022. "Efektivitas Model Pembelajaran Sets (Scienci, Environment, Technology, Society) Terhadap Kemampuan Berfikir Kritis Peserta Didik Xi Mas Al-Hidayat Kabupaten Pesawaran." *Jurnal Sains* 1(1): 1–13.

Ulfah Fajarini. (2014). Peran Kearifan Lokal bagi Pendidikan Karakter. *Sosiodidaktika*, *1*(2), 123–130.

Ulinnuha, R., Waluya, S. B., & Rochmad. (2019). Creative Thinking Ability With Open-Ended Problems Based on Self- Efficacy in Gnomio Blended Learning. Creativity Research Journal, Vol. 10 No. 1: 20– 25.

Wanelly, W., & Fauzan, A. (2020). Pengaruh Pendekatan Open Ended dan Gaya Belajar Siswa terhadap Kemampuan Berpikir Kreatif Matematis. Jurnal Basicedu, 4(3), 523–533. https://doi.org/10.31004/basicedu.v4i3.388

Wijayanto, M. T., Purwosetiyono, F. D., & Prasetyowati, D. (2021). Kemampuan Berpikir Kreatif Siswa dalam Menyelesaikan Word Problem Ditinjau dari Gaya Belajar Siswa. Imajiner: Jurnal Matematika Dan Pendidikan Matematika, 3(1), 37–47. https://doi.org/10.26877/imajiner.v3i1.7026

Wulandari, A. (2010). Metode Penelitian. Tersedia http://www.Trinoval.web.com [27 Juli 2013].

Wahyuni, L., & Rahayu, Y. S. (2021). Pengembangan e-book berbasis project based learning (pjbl) untuk melatihkan kemampuan berpikir kreatif pada materi pertumbuhan dan perkembangan tumbuhan kelas xii sma. Berkala Ilmiah Pendidikan Biologi (BioEdu), 10(2), 314-325. https://doi.org/10.26740/bioedu.v10n2.p314-325.

Yulistiana, Yulistiana. 2015. "Penelitian Pembelajaran Berbasis SETS (Science Environment, Technology, And Society) Dalam Pendidikan Sains." *Formatif: Jurna Ilmiah Pendidikan MIPA* 5(1): 76–82. doi:10.30998/formatif.v5i1.169.

Zahra, M., Wati, W., & Makbuloh, D. (2019). Pembelajaran SETS (Science, Environment, Technology, Society): Pengaruhnya pada Keterampilan Proses Sains. Indonesian Journal of Science and Mathematics Education, 2(3), 320– 327. https://doi.org/10.24042/ijsme.v2i3.4357