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Development of Student Worksheets for Inquiry Model in Differentiated Learning to Improve Students' Critical Thinking

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Abstract
conditions of grade V students of SDN Kubangjati 02 have an impact on the low scores of computer-based national assessments and education report cards. To overcome this problem, a learning model was developed to stimulate students' critical thinking process by using Student Worksheets (LKPD) in differentiated learning through the inquiry learning model. This study aims to analyze the effectiveness of the LKS device in differentiated learning through the inquiry learning model to improve students' critical thinking processes and abilities. The type of research used is development research. The data collection techniques used are tests, interviews, questionnaires, and documentation. The data analysis techniques used are normality tests, homogeneity tests, paired sample t-tests, and N-Gain tests. The results of the practicality test of the developed LKS student response questionnaire were stated to be practical by students with an average score of 91.4 and were categorized as very good. The output results of "Paired Samples Correlations" obtained a Sig. value. of 0.000 < 0.05, so there is a difference in the average learning outcomes of the pretest and posttest, which means that the use of student worksheets with inquiry in differentiated learning can improve the critical thinking process of elementary school students. Conclusion: (1) Student worksheets with the inquiry learning model have been proven to be able to build student enthusiasm in differentiation learning, (2) Student worksheets with the inquiry learning model have been proven to be able to improve students' critical thinking processes in differentiation learning, and (3) Student worksheets with the inquiry learning model have been proven to be able to improve students' critical thinking skills in differentiation learning.

INTRODUCTION

The Pancasila Student Profile is a character and ability that is carried out in everyday life and brought to life in each individual student through school culture, intracurricular learning, projects that strengthen the Pancasila student profile, and extracurricular activities. The Pancasila student profile is in accordance with the vision and mission of the Ministry of Education and Culture (Kemendikbud, 2020). The characters in the Pancasila Student Profile that are currently the focus of the Indonesian Government include: (a) having faith, being devoted to God Almighty, and having noble morals; (b) being globally diverse; (c) working together; (d) being independent; (e) being a critical thinker; and (f) being creative (Aryanto et al., 2023).

Critical thinking skills are very important in the formation of Pancasila students. Critical thinking is a deeper thinking skill that enables you to find solutions or answers to solve complex problems (Anggreani & Febriandi, 2023). The reality found in the field has not been in accordance with expectations. So far, attention to the development of critical thinking skills is still relatively low so that there is still an opportunity to explore critical thinking skills and their development. To face the challenge

of low ANBK scores for grade V students of SD Negeri Kubangjati 02, it is necessary to develop students' critical thinking skills to solve the problem. Critical thinking is very important in the learning process because it is seen as a process of skills and students' responsibilities to be involved in expressing opinions, evaluating, and reflecting to examine problems from the perspective faced and being able to draw conclusions (Alvi et al., 2016; Pratiwi & Setyaningtyas, 2020).

Critical thinking skills are skills that are very much needed by someone to be able to face various problems faced in social and personal life. With 21st century skills helping students adapt well to a world that is constantly changing, one of which is critical thinking skills (Stelhe & Burton, 2019). Research shows that critical thinking skills have many benefits for education so that later when in educational units they are able to realize their abilities to produce competent students in accordance with educational goals (Syafitri et al., 2021).

The Independent Curriculum trains students' freedom of opinion because the Independent Curriculum shares new colors in improving the previous curriculum. Freedom to learn is freedom of thought and the essence of freedom of thought must be in every teacher so that students experience changes in learning that are embedded in a socio-cultural context where students can learn and think critically (Febriyanti & Irawan, 2017). Critical thinking ability is a high-level thinking ability in solving a problem rationally. Critical thinking ability has 4 stages in solving a problem, namely the clarification stage, the assessment stage, the inference stage and the strategy stage (Dermawan & Maulana, 2023).

The low literacy condition of fifth grade students of Kubangjati 02 Elementary School has an impact on the low scores of computer-based national assessments and education report cards. This is because students in the class are not yet able to think critically in solving computer-based national assessment questions. This condition is exacerbated because the open modules created by teachers still do not use appropriate student worksheets. Based on these problems, an approach is needed that can make students think critically in solving questions. The learning profiles of students are different from one another. Therefore, teachers need diagnostic assessments to determine the profile of each student so that teachers can vary the models and approaches in learning. Differentiated learning is an approach that can accommodate students' needs. Aspects of differentiated learning consist of process, content, product and learning environment. In differentiated learning, teachers have control over four areas, namely class content, process, product, and learning environment or atmosphere (Yati et al., 2023).

The differentiation approach is often known as an instructional approach that helps teachers manage classes, lead classes, encourage and monitor students to have good learning abilities and outcomes for each student (Putra, 2021; Saprudin & Nurwahidin, 2021). One of the learning models that teachers can apply is the inquiry model, because the inquiry model directly involves students in learning activities in the sense that it focuses on students, and is suitable for application in natural science subjects (Khoury, 2022; Larasati, 2018).

Research on the development of student worksheets with an inquiry learning model is a learning process with steps that emphasize students to think creatively, critically, responsibly, and confidently in seeking and finding answers to a problem. As for the integrated multidisciplinary learning approach to foster and improve the realization of independent learning curriculum objectives designed in accordance with 21st century skills (Laksana, 2021). Research conducted by Firdaus & Wilujrng stated that LKPD on the theme of Volcanic Eruptions based on guided inquiry is able to improve students' critical thinking skills (Firdaus & Wilujeng, 2018).

The use of student worksheets also supports student learning activities in learning where initial learning activities are not only focused on the teacher but the teacher only acts as a facilitator and motivator. Students become the first subject in discovery activities so that students are able to digest learning concepts directly (Laili et al., 2019; Elviyasmi et al., 2024)

The advantages of using student worksheets are that it makes it easier for teachers to carry out learning and students are more independent in learning and exploring and then carrying out written assignments to develop student worksheets. When compiling learning tools, teachers are required to use their creativity in order to achieve the desired meaningful learning. Through previous research, it

was found that the application of inquiry learning with the use of student worksheets can develop students' critical thinking and make students more active during learning (Nurhayatun, 2020), and can have a positive influence when facing a natural science problem so that they can develop students' ability to understand concepts (Laili et al., 2019).

Differentiated learning is an effort to adjust the learning process in the classroom to meet the learning needs of each student individually. Teachers must be fair in meeting student needs. There are three strategies in implementing differentiated learning, namely: content differentiation, process differentiation, and product differentiation. Differentiated learning that pays attention to variations in learning styles can help create an inclusive learning environment that is responsive to students' learning needs. Based on the diversity of students' learning styles, the suggestion given is that educators pay more attention to students' learning styles and characteristics in differentiated learning. The goal is for students to be able to understand the material in depth and achieve learning goals (Tomlinson, 2016).

Student worksheets are one of the teaching materials designed by teachers and consist of materials, instructions for completing questions, and practice questions (Hasanah et al., 2023). Hardiansyah's research states that interactive LKPD based on Liveworksheets can be categorized as good and suitable for use in differentiated learning (Hardiansyah et al, 2023).

The student worksheets provided are in accordance with the material taught and are easy for students to understand, but the form of the student worksheets is less attractive because it only contains writings. Overall, the teacher has taught well, but the learning model used is not optimal in improving students' critical thinking. From these conditions, the researcher intends to develop student worksheets using the inquiry learning model in differentiated learning to improve students' critical thinking processes and abilities.

The inquiry learning model is a learning model that is centered on students regarding the process of learning natural sciences to obtain an objective picture (Widayati et al., 2018; Toyibu & Faizah, 2021). The inquiry learning model can also help students to develop the scientific discipline and intellectual skills needed to ask questions and find answers based on their curiosity (Rangkuti et al., 2018). The inquiry learning model emphasizes that students are able to find out for themselves the problems given by the teacher and this model is considered appropriate for application in education in Indonesia (Suryani et al., 2018; Aryawati et al., 2023).

METHODS

This research is an educational development research that aims to develop an Inquiry Learning strategy. Educational development research includes the development process, product validation, and product trials. Research and development aims to produce new products through the development process. Research and development products in the field of education can be in the form of models, strategies, media, equipment, books, modules, evaluation tools, and learning devices such as curriculum and school policies (Mulyatiningsih, 2018).

Research and development or R&D is one type of non-experimental quantitative research. Research and development is a research method used to produce a particular product and test the effectiveness of the product. In order to produce a particular product, research is used that is in the form of needs analysis (qualitative methods are used) and to test the effectiveness of the product so that it can function in real terms, research is needed to test the effectiveness of the product (experimental methods are used) (Sugiyono, 2017).

The research design that will be used is the design developed by Borg and Gall. This design contains systematic steps so that the product being developed reaches the eligibility standard. There are 10 steps taken in developing this design. In this study, only 8 stages were used due to the limitations of the researcher.

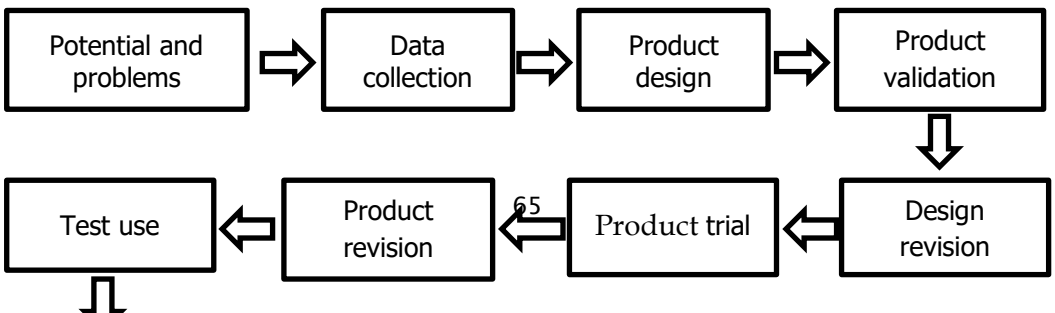

Figure 1. R&D Steps Borg and Gall (Sugiyono, 2017)

The next step taken is to collect various data and information that can be used as material for planning a product to solve the problem (Sugiyono, 2017). At this stage, researchers collect data in the form of questionnaires that analyze the needs of teachers and students for the expected product.

The instruments used in this study include: (1) learning devices, (2) teacher and student needs questionnaires, (3) teacher and student response questionnaires, (4) expert validation sheets, (5) pretest and posttest questions. The instruments were then tested for validity by experts and practitioners.

Reliability shows the understanding that an instrument is sufficiently trusted to be used as a data collection tool because the instrument is good. A good instrument is not tendentious in nature that directs respondents to answer certain answers. A reliable instrument produces data that can also be trusted (Arikunto, 2018). The following are the results of the reliability test.

Table 1. Reliability Test Results

Reliability Statistics			
Cronbach's Alpha	Part 1	Value	.817
		N of Items	8[a]
	Part 2	Value	.772
		N of Items	7[b]
	Total N of Items		15
Correlation Between Forms			.762
Spearman-Brown Coefficient	Equal Length		.865
	Unequal Length		.865
Guttman Split-Half Coefficient			.857

Based on the reliability test of 15 questions, the calculated r result was 0.857 while the table r was 0.444, so the 15 questions were declared reliable and entered the very high category. Furthermore, 15 trial questions were tested for the level of difficulty of the questions.

The data collection techniques used in this study were tests, interviews, questionnaires, and documentation. A test is an instrument in the form of a series of questions, worksheets, or the like that is used to measure the knowledge, skills, abilities, and talents of research subjects (Uno, 2019). Interviews are used as a data collection technique when researchers want to conduct preliminary studies to find problems that need to be researched, and also when researchers want to know things from respondents in more depth and the number of respondents is small (Sugiyono, 2017). A questionnaire is a data collection technique carried out by giving a set of written questions or statements to respondents to answer (Sugiyono, 2017). Documentation means written items. In implementing the documentation method, researchers investigate props such as Asturo, glue, cardboard, and so on (Arikunto, 2018).

The form of data obtained in the study is quantitative and qualitative data. The validity of the student worksheets is obtained from validation by experts and practitioners. Comments, suggestions and input from the validator include qualitative data. In the field trial, data was collected using

questionnaires and tests. Some assumption tests carried out include: normality test, homogeneity test, paired sample t-test, and N-Gain test.

RESULTS AND DISCUSSION

Based on the results of interviews with grade V teachers, the problems found were that students' critical thinking skills were still low and the development of student worksheets was still lacking. The student worksheets used were less varied, the student worksheets presented contained more writing so that children were bored, and the student worksheets had not been developed with inquiry learning.

Students' needs for student worksheets include: students' initial understanding, critical thinking, and the appearance of student worksheets. Based on the analysis of student needs, 10 students considered learning the water cycle material to be less enjoyable, 20 students considered the water cycle material to be difficult for students to understand, 8 students concluded that the water cycle material was less able to stimulate students to think critically, and 27 students prefer student worksheets that are illustrated, colored and complete with instructions for completing them.

Teachers' needs for student worksheets include: content, language, and appearance of student worksheets. Teachers need complete and attractive student worksheets that contain division instructions for students according to their learning needs. Teachers agree that student worksheets are arranged with an attractive design and language that is easy for students and teachers to understand so that the learning carried out can run according to the learning needs of students.

The developed student worksheets have the advantage of more complete instructions and presentations according to the needs of the students. The student worksheets are made in 2 types, namely the first student worksheet for students under guidance and the second for students who are already proficient. The student worksheets for guidance are specially designed so that students are able to understand each teacher's instructions so that the explanation is more detailed. The worksheets for advanced students are shorter and more concise because students are already able to digest what steps must be taken according to what is contained in the student worksheet.

The student worksheet was assessed by two experts and one practitioner. Based on the assessment results, the student worksheet was suitable for use because it obtained a percentage of more than 70.01%, according to the validation criteria (Akbar, 2015). Based on the results of the assessment of validators 1, 2, and 3 on the student worksheet, the score was 78 or 88.6%. The following is a graph of the results of the material validation by the validator.

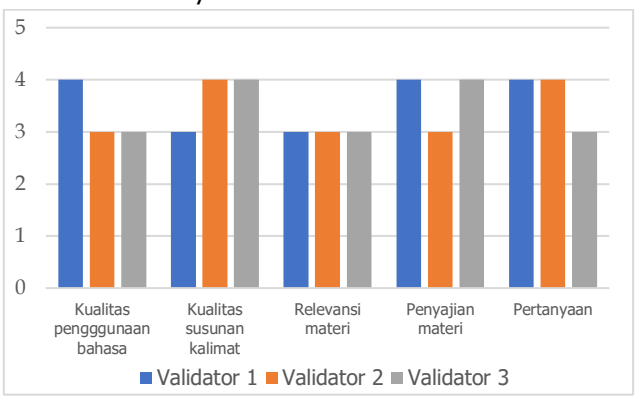

Figure 2. Validation Graph against Material Aspects

Based on the validator's assessment of the development of student worksheets, it can be seen that the student worksheets are included in the very valid level because they obtained a value of 88.6%. Based on this, the student worksheets are suitable for use in learning. Suggestions and comments from validators 1, 2, and 3 have been improved through the revision process. The design of the student worksheet after revision was made into 2 student worksheets, namely the guided student worksheet and the expert student worksheet.

The results of the practicality test of the student response questionnaire to provide an assessment of the development of student worksheets were made by covering aspects including: ease of use, attractiveness of presentation, benefits of student worksheets, and positive user responses. Based on the average value of the practicality test, it can be concluded that the developed student worksheets were declared practical by students with an average value of 91.4 and were categorized as very good. As for individual data in the readability test, student data with an interval value of X > 90 obtained a good category of 8 respondents or 30%. While students who obtained an interval of X < 91 with a very good category were 19 respondents or 70%.

The teacher response questionnaire to determine the practicality of the developed student worksheets was made by covering several aspects including: presentation of material, suitability of material to the curriculum, presentation of material content, and language and readability of the material. The student worksheets developed according to the practicality response obtained a score of 95 with a very good category. Based on peer assessment, a score with an interval of 92 was obtained with a very good category. So it can be concluded that the student worksheets are very good to be used to help students improve their critical thinking process.

The activities carried out before the implementation of learning are students working on questions for the pretest. The pretest is carried out to determine students' critical thinking skills before learning using the developed student worksheets. After learning, students use the developed student worksheets to work on the posttest questions.

Testing the effectiveness of student worksheets can be known by using normality tests and homogeneity tests. The recapitulation of the results of the normality test on the pretest and posttest scores can be seen in the table 2.

Table 2. Normality Test of Pretest and Posttest Values of Experimental Class

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	POSTES	Statistic	df	Sig.	Statistic	df	Sig.
PRETEST	1	.175	27	.033	.872	27	.003
	2	.302	27	.000	.811	27	.000

a. Lilliefors Significance Correction

Based on the results of the normality test (table 2), the Shapiro-Wilk statistical value is 0.872. Because the Shapiro-Wilk statistical value is > 0.05, it can be concluded that the pretest and posttest questions are normally distributed.

The homogeneity test used is the Levene test. The results of the homogeneity test are as follows.

Table 3. Homogeneity Test of Pretest and Posttest Values of the Experimental Class

		Levene Statistic	df1	df2	Sig.
postes	Based on Mean	4.325	1	52	.082
	Based on Median	3.045	1	52	.087
	Based on Median and with adjusted df	3.045	1	50.454	.087
	Based on trimmed mean	4.241	1	52	.084

Based on the results of the homogeneity test (table 3), the Sig. value is 0.082 > 0.05. So the variance of the two groups of data populations is the same (homogeneous).

Paired Sample T-Test was conducted to determine whether there was a difference in the use of student worksheets in improving students' critical thinking skills. By using SPSS, the results were obtained as in the table 4.

Table 4. Paired Sample T Test Results

		N	Correlation	Sig.
Pair 1	VAR00001 & VAR00002	27	.255	.009

Based on the output results of "Paired Samples Correlations" (table 4) obtained a Sig. value of 0.000 <0.05, then H_0 is rejected and H_1 is accepted. So there is a difference in the average learning outcomes of the pretest and posttest which means that the use of student worksheets with Inquiry in differentiated learning can improve the critical thinking process of elementary school students.

The effectiveness of student worksheet development was analyzed using the N Gain test. The N Gain test is used to calculate the extent to which students' critical thinking skills have increased. Based on the data obtained, the N Gain of students' critical thinking skills has increased as seen from the pretest and posttest scores. N Gain analysis of critical thinking skills with an average n-gain value of 0.72. This value is included in the high category.

The results of the study were declared valid by experts and practitioners for use in science learning. There are two aspects assessed, namely the aspects of student worksheets and evaluation questions. Student worksheets consist of aspects of learning, materials, and conformity to instructions, basic competency indicators, and appearance. Thus, from the aspect of validity, the developed student worksheets are suitable for use in science learning to improve students' critical thinking skills.

The steps of inquiry learning can guide students to be more careful and appreciate the learning process to find and solve critical thinking problems and find innovative ideas. The student worksheets developed are categorized as good, namely regarding the use of language, sentence structure, simplicity, and in accordance with student development so that they are easy to understand (Widyantini, 2017).

These advanced and guided inquiry student worksheets are specifically designed to be easily accessible to students and teachers with an attractive appearance, full of bright colors, and complete instructions for use according to student needs. The student worksheets used have language quality that is easy for students to understand, the sentence structure is clear and unambiguous.

CONCLUSION

Student worksheets with an inquiry approach to differentiated learning that have been developed have been proven valid with a very valid category according to experts and practitioners. This is proven by the use of student worksheets that can build student enthusiasm in learning activities at school on the water cycle material.

Student worksheets with the developed inquiry approach have proven to be practical with a very good category. This can be seen from the enthusiasm of students and teachers in using student worksheets developed in learning and feels more enthusiastic. Class conditions become more conducive for both students and teachers so that learning indicators can be achieved well.

The developed student worksheets have proven to be effective in improving students' critical thinking processes. This can be seen in the experimental class that received treatment so that the post-test score was greater than the control class that did not receive treatment on the topic of the water cycle.

REFERENCES

Akbar, S. (2015). *Instrumen Perangkat Pembelajaran.* Bandung: Remaja Rosda Karya.

Alfi, C., Sumarmi, & Amirudin, A. (2016). Pengaruh Pembelajaran Geografi Berbasis Masalah Dengan Blended Learning Terhadap Kemampuan Berpikir Kritis Siswa SMA. *Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan*, 1(4), 597-602, http://dx.doi.org/10.17977/jp.v1i4.6203 .

Anggreani, A., & Febriandi, R. (2023). Implementasi Model Realistic Mathematics Education(RME) Untuk Meningkatkan Kemampuan Critical Thinking Matematika Pada Siswa Kelas IV Sekolah Dasar. *Jurnal Elementaria Edukasia*, 6 (4), 1937-1946. https://doi.org/10.31949/jee.v6i4.7588.

Arikunto, S. (2018). *Prosedur Penelitian Suatu Praktek.* Jakarta: Rineka Cipta.

Aryanto, S., Agustina, P. A., Erlianda, M., Silaen, A. E., Puspitasari, A. P., & Meliyanti. (2023). Pengembangan Buku Ramah Cerna Berbasis Human Security sebagai Upaya Penguatan Profil Pelajar Pancasila di Sekolah Dasar. *Jurnal Elementaria Edukasia*, 6 (4), 1846-1860. https://doi.org/10.31949/jee.v6i4.6900.

Aryawati, A., Mania, S., Yuliany, N., Abrar, A. I. P., & Halimah, A. (2023). Efektivitas Penerapan Metode Pembelajaran Penemuan Terbimbing terhadap Kemampuan Berpikir Kritis Matematika Peserta Didik. *Al Asma: Journal of Islamic Education*, 5(1), 44-53. https://journal.uin-alauddin.ac.id/index.php/alasma/article/view/38044/17313.

Dermawan, D. D., & Maulana, P. (2023). Analisis Berpikir Kritis Pada Pembelajaran PKN di Sekolah Dasar. *Jurnal Elementaria Edukasia*, 6 (4), 1571-1579. https://doi.org/10.31949/jee.v6i4.7153.

Elviyasmi, Junaidi, & Adji, S. S. (2024). Pengembangan Lembar Kerja Peserta Didik Berbasis Crossword Puzzledalam Meningkatkan Kreativitas dan Hasil Belajar pada Mata Pelajaran Budaya Alam Minangkabau. *Journal of Education Research*, 5(4), 4903-4915. https://jer.or.id/index.php/jer/article/view/1557/951.

Febriyanti, C., & Irawan, A. (2017). Meningkatkan Kemampuan Pemecahan Masalah Dengan Pembelajaran Matematika Realistik. *Delta-Pi: Jurnal Matematika Dan Pendidikan Matematika*, 6(1), 31–41. https://doi.org/10.33387/dpi.v6i1.350.

Firdaus, M., & Wilujeng, I. (2018). Pengembangan LKPD Inkuiri Terbimbing Untuk Meningkatkan Keterampilan Berpikir Kritis Dan Hasil Belajar Peserta Didik. *Jurnal Inovasi Pendidikan IPA*, 4(1), 26–40. https://doi.org/10.21831/jipi.v4i1.5574.

Hardiansyah, H., Asmawi, U. S., & Darmansyah, A. (2023). Pengembangan LKPD Interaktif dalam Pembelajaran Berdiferensiasi. DWIJA CENDEKIA: Jurnal Riset Pedagogik, 7(3). https://doi.org/10.20961/jdc.v7i3.78584.

Hasanah, A., Suratmi, & Laihat. (2023). Analısıs Kebutuhan Pengembangan E-Lkpd Berbasıs Hots Berbantuan Lıveworksheet Untuk Peserta Dıdık Sekolah Dasar. *Jurnal Elementaria Edukasia*, 6 (4), 1571-1579. https://doi.org/10.31949/jee.v6i4.7153.

Kemendikbud. (2020). *Peraturan Menteri Pendidikan dan Kebudayaan Nomor 22 Tahun 2020 tentang Rencana Strategis Kementerian Pendidikan dan Kebudayaan Tahun 2020-2024.* Jakarta: Kemendibud.

Khoury, O. (2022). Perceptions of student centered learning in online translator training: findings from Jordan. *Heliyon*, 8(6), e09644. https://doi.org/10.1016/j.heliyon.2022.e0964.

Laili, N., Purwanto, S. E., & Alyani, F. (2019). Pengaruh Model Penemuan Terbimbing Berbantu LKPD terhadap Kemampuan Pemahaman Konsep Matematis Siswa SMPN 6 Depok. *International Journal of Humanities, Management and Social Science*, 2(1), 14-37, https://doi.org/10.36079/lamintang.ij-humass-0201.20.

Laksana, S. D. (2021). Pentingnya Pendidikan Karakter Dalam Menghadapi Education Technology The 21st Century. *Jurnal Teknologi Pembelajaran (JTeP)*, 1(1), 14-22, https://journal.iaimnumetrolampung.ac.id/index.php/jtep/article/view/1289/679.

Larasati, F. (2018). Student Centered Learning: an Approach To Develop Speaking Skill in Efl Classroom. *English Community Journal*, 2(1), 153. https://doi.org/10.32502/ecj.v2i1.1004.

Mulyatiningsih, E. (2018). *Metode Penelitian Terapan Bidang Pendidikan.* Bandung: Alfabeta.

Nurhayatun, B. (2020). Penerapan Metode Penemuan Terbimbing dengan Mengoptimalkan Penggunaan Lembar Kerja Siswa (LKS) Untuk Meningkatkan Hasil Belajar Matematika Siswa Kelas VI SD Negeri 39 Mataram. *As-Sabiqun : Jurnal Pendidikan Islam Anak Usia Dini*, 2(2), 98-112, https://doi.org/10.36088/assabiqun.v2i2.1071.

Pratiwi, E. T., & Setyaningtyas, E. W. (2020). Kemampuan Berpikir Kritis Siswa Melalui Model Pembelajaran Problem Based Learning dan Model Pembelajaran Project Based Learning. *Jurnal Basicedu*, 4(2), 379 -388, https://doi.org/10.31004/basicedu.v4i2.362.

Putra, I. M. (2021). Implementasi pembelajaran flipped classroom berbasis strategi diferensiasi untuk meningkatkan keterampilan berpikir kritis peserta didik. *Indonesian Journal of Educational Development*, 2(3), 461–471. https://doi.org/10.5281/zenodo.5681318.

Rangkuti, M. A., & Sani, R. A. (2018). Analisis Kemampuan Berfikir Kritis Menyelesaikan Masalah Fisika Pada Pembelajaran Dengan Model Pembelajaran Inkuiri. *Jurnal Inovasi Pembelajaran Fisika (INPAFI)*, 6(3), 82-86, DOI : 10.24114/inpafi.v6i3.11126.

Ritonga, S. & Zulkarnaini. (2021). Penerapan Pendekatan STEM untuk Meningkatkan Keterampilan Berpikir Kritis Peserta Didik. *Jurnal Studi Guru dan Pembelajaran*, 4(1), 75-81, https://e-journal.my.id/jsgp/article/view/519/433.

Saprudin, M., & Nurwahidin, N. (2021). Implementasi Metode Diferensiasi dalam Refleksi Pembelajaran Pendidikan Agama Islam. *Syntax Literate: Jurnal Ilmiah Indonesia*, 6(11), 5765–5776. https://doi.org/10.36418/syntax-literate.v6i11.4562.

Stehle, R. M., & Peters-Burton, E. E. (2019). Developing student 21st Century skills in selected. *International Journal of STEM Education*, 6(1), 1-15, https://doi.org/10.1186/s40594-019-0192-1.

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

Suryani, N., Rudibyani, R. B., & Efkar, T. (2018). Penerapan Model Pembelajaran Inkuiri Terbimbing Dalam Menganalisis Keterampilan Mengelompokkan Dan Inferensi. *Jurnal Pendidikan dan Pembelajaran Kimia*, 1-10, https://media.neliti.com/media/publications/140053-ID-penerapan-model-pembelajaran-inkuiri-ter.pdf.

Syafitri, E., Armanto, D., & Rahmadani, E. (2021). Aksiologi Kemampuan Berpikir Kritis (Kajian Tentang Manfaat dari Kemampuan Berpikir Kritis). *Journal of Science and Social Research*, 4(3), 320-325, https://www.jurnal.goretanpena.com/index.php/JSSR/article/view/682/627.

Tayibu, N. Q., & Faizah, A. N. (2021). Efektivitas Pembelajaran Matematika melalui Metode Penemuan Terbimbing Setting Kooperatif. *Mosharafa: Jurnal Pendidikan Matematika*, 10(1), 117-128. https://journal.institutpendidikan.ac.id/index.php/mosharafa/article/view/646/583.

Tomlinson, C. A. (2016). *How to differentiate instruction in mixed.* Alexandria: ASCD.

Uno, H. B. (2019). *Teori Motivasi dan Pengukurannya.* Jakarta: Bumi Aksara.

Widayati, Suryono, & Rahayu, W. (2018). Pengaruh Model Pembelajaran Berbasis Penemuan Terhadap Kemampuan Berpikir Kritis Matematis Dan Self Concept Dengan Mengontrol Kemampuan Awal Peserta Didik Kelas VII SMP. *JPPM (Jurnal Penelitian dan Pembelajaran Matematika)*, 11(1), 94-104, http://dx.doi.org/10.30870/jppm.v11i1.2988.

Widyantini, T. (2017). *Penyusunan Lembar Kegiatan Siswa (LKS) Sebagai Bahan Ajar.* Yogyakarta: PPPPTK Matematika.

Yati, Y., Minsih, Fauziati, E., & Hidayati, Y. M. (2023). Pelaksanaan Pembelajaran Berdiferensiasi Berdasarkan Modelitas Belajar Di Sekolah Dasar. *Jurnal Elementaria Edukasia*, 6 (2), 726-735. https://doi.org/10.31949/jee.v6i2.5147.