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Can High Order Thinking Thematic and Critical Thinking Skills Affect Student Learning Outcomes?: A Evidence in Elementary Schools in Grobogan Regency, Central Java

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Abstract: This study aims to analyze the effect of applying thematic HOTS questions and critical thinking skills to the learning outcomes of fourth grade elementary school students in Grobogan Regency. The approach that used by the researcher is a quantitative approach, with an *ex post facto model design.* This study used a sample of 47 students, instruments in research not only used questionnaires and documentation, but also used validity and reliability tests. Normality and linearity tests are used as perquisite test. T-test is used as simple linear regression hypothesis test, meanwhile F test is used as multiple regression test. The results of this study indicated that; (1) The application of thematic HOTS questions proved to have a significant effect of 14.5% on learning outcomes. (2) Critical thinking skills had a significant effect of 22.9% on learning outcomes. (3) The application of thematic HOTS questions and critical thinking together had a significant effect of 0.33% on learning outcomes. This research implies is that the refraction of higher-order thinking and critical thinking must start from elementary school so that students can keep up with the changes in the 21st century, besides that teachers are also to prepare more creative and innovative teaching materials so that learning occurs that sharpens students to think at a higher level.

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Introduction

Education is one of the essential elements of a country, one of its efforts is to create an excellent curriculum to realize students can learn independently, actively, creatively, and can think critically. Indonesia often suffers curriculum changes, starting from the KBK (competency-based curriculum), KTSP (Education Unit Level Curriculum), to the 2013 curriculum (Wasifatun Najiroh, 2020). The quality of learning in Indonesia is currently still lacking, so it needs to be improved. This can be seen from the low results of the 2015 TIMSS version of the measurement, "Indonesian students may on average only have a few basic facts, such as not having can communicate, relate disparate topics, and apply complex and abstract concepts to subjects. Therefore it is included in the category of Low International Benchmark"(Hunt et al., 2013).

Critical thinking skills of the students, especially in Indonesia, are still very lacking; the problem was found based on the results of the 2012 program (PISA) using questions consisting of 6 levels (one lowest level and six highest). One of the acts of critical thinking is a selective activity in receiving information (Nirwana et al., 2019) Students can always work on questions at stage level 1 and level 2 so that they can reach rank 64 with a score obtained by Indonesia is 382 (Rachmedita et al., 2017) This condition showed a tendency in critical

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Email: jklppm@undikma.ac.id

thinking skills that are so lacking, This problem is an evaluation material in improving the quality of learning in Indonesia in the face of changes in the 21st century, an era where everything that used to be conventional is now completely digital and even automatic, one of which is in the field of education by inculcating High order thinking skills (HOTS) that must be learned by students and must be developed by teachers as educators who teach to prepare for the achievement of 21st century learning goals (Fanani & Kusmaharti, 2018).

Thematic learning is a planned strategy to unite several points of view with subjects that are related to thematic or with subjects. Meanwhile (E. Mulyasa, 2015) integrated thematic learning is the provision of knowledge used at the basic education level that displays the learning process according to the theme which is combined with other subjects (Abdul Majid, 2014).

Thematic learning has several weaknesses, namely: (1) skills and concepts are less systematic, 2) the themes used in curriculum learning are quite complicated (3) Storage is needed to support thematic teaching activities in LKS books, module books, or so on, some are not appropriately implemented (4) the transition lead to learning, the curriculum transition is shown to be thematically based on the time and obligations of the teacher and the partners involved, (5) the comprehensive and constant evaluation of the different methods is delicate to reconcile (Wolfinger dalam Chumdari et al, 2018). Teaching and learning activities will be more fun and make an impression on students with supporting factors, one of which is the environment because if the student environment provides a sense of security and comfort, students can absorb the material well. Learning can be interpreted as an individual and contextual process, which means that students' self-development is in accordance with the state of the surrounding environment. Therefore, learning by doing can be more meaningful than just hearing an explanation (Setiawan et al., 2020).

Critical thinking is one of the way to handle and to solve problems based on effective and rational arguments to be give the correct answer as another alternative solution (Florea & Hurjui, 2015). In addition, according to (Baderan, 2018) critical thinking dexterity is a person's mental strategic ability that includes clear and sequential reasoning, analysis, and evaluative abilities with experience or special training so that they can make these decisions and bring goodness. According to (Feng, 2014) Components skills of analyzing arguments in critical thinking are included; breaking down the arguments, inductive or deductive as to make conclusions, assessing, and solving problems. In addition, according to (Santos, 2017) developing critical thinking skills is very important to gain the ability to see, think, research, question, and solve events scientifically. Critical thinking skills are not present in humans from birth, but one of them can be trained through learning (Ramadhanti & Agustini, 2021).
According to (Facione, 2011) the indicators of critical thinking skills are as follows:

1) Analysis, Skills to identify and describe an information that is actually obtained to express a belief or opinion.
2) Inference, the skill to know and look for elements to get a logical conclusion.
3) Evaluation, Skills to test the existing validity based on responses, experiences, beliefs, or opinions.
4) Explanation, Skills to express and justify reasons by giving valid opinions.
5) Self-Regulation, Skills to monitor one's cognitive activity by correcting one's results.

Based on the results of research by Maulina et al., (2019) explaining that in Grobogan Regency found several facts in the field, namely "teachers have not mastered the understanding of learning tools that support HOTS, they are still inclined to use verbs C1 (remember), C2 (understand), and C3 (apply). In addition, teachers have not been able to create a creative and innovative classroom atmosphere and the used of learning reference

Vol. 8, No. 3 : September 2022
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books only uses teacher and student handbooks. Based on the results of pre-research observations, it was found that for 3 months the difficulty of fourth-grade elementary school students in Grobogan Regency was that students were accustomed to being given LOTS level questions (lower order thinking skills) so that it could be seen from the learning outcomes that tended to be incomplete KKM, this was influenced by several factors such as students who are less able to understand the request for reading questions, the tendency of teachers to teach using the lecture method. before learning begins, it is better for teachers to prepare mature teaching materials, the reference for learning materials only uses teacher and student handbooks, so reasoning abilities are not as good as students who are accustomed to the discussion in solving a problem. Finally, the teacher usually asks questions to students who are still dominant in LOTS (lower-order thinking skills) (Aji, 2020).

Nurwahida's research (2018) examined the HOTS approach for the Social Studies subject. class IV Bontomania students that learning using the HOTS approach has a good influence on student learning outcomes, especially the Social Studies subject, so it is concluded that there is evidence that shows the results of the study, namely, first, 21.43%, for students who get the second very high category 32 .14%, the third category of students, 39.29% of the third category of the medium group, the four categories of students showed 7.14% and the results of students getting a very low category at this time 0%.

The purpose of learning is to help students understand and apply the knowledge that has been taught as part of the educational process (Ricardo & Meilani, 2017). The implementation of behavioral reform in educational institutions is based on student learning outcomes. Thus, it can be concluded that learning outcomes consist of cognitive, emotional, and psychological changes as a result of changes in the learning process. Agustin Mutia's research (2021) explained that the so-called HOTS theory has a 49.0% increase in student learning outcomes, and the value shows a high level of relationship level around, 0.700, 09% can be seen with a good percentage.

This research is important to analyze the understanding of fourth-grade students, especially in Grobogan regarding higher order thinking and critical thinking skills so that they affect learning outcomes as one of the demands of 21st century change. The research aims analyze the effect of thematic HOTS questions on learning outcomes and thinking skills. collectively critical of the learning outcomes of fourth-grade elementary school students, especially in Grobogan Regency. Expectations from the above objectives are that students are expected to cultivate critically, creative thinking, can train students to become problem solvers, and become motivated to teach in order to improve the quality of educators.

Research Method

This study used a quantitative approach. (Darmawan, 2013) put forward the definition of a quantitative approach, which is a method of detecting capabilities that used data in the form of numbers to become a benchmark for obtaining information regarding what we want to know. The design of this study used ex post facto, which is research to find a cause that triggers changes in overall to independent variables such as behavior, symptoms, or phenomena (Sappaile & Makassar, 2020).

The population in the study involved two schools in Grobogan Regency for the 2021/2022 academic year, which are Curut Public Elementary School with 22 students and Penawangan Public Elementary School 1 with 31 students. Samples were obtained using the Slovin formula.

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$$N = \frac{N}{1 + Ne^2}$$

Information:
N = Total population
n = Sample
e = Precision (estimated error is 0.05)

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{53}{1 + 53(0{,}05)^2}$$

$$n = \frac{53}{1 + 53(0{,}05)^2} = 46{,}79 \; dibulatkan \; menjadi \; 47$$

The number of samples in the calculation is 47 students in elementary schools in Grobogan Regency. (Arikunto, 2014) argued that the sample that can be taken is half or representative of the studied population. So that in calculating the sample can be described as follows:

Table 1. Sample Calculation

No.	Elementary School	Class	Sample	Total
1	Curut Public Elementary School	IV	$\frac{22}{53} \times 47$	20
2	Penawangan Public Elementary School 1	IV	$\frac{31}{53} \times 47$	27
Total				47

In column 1 it is explained that Curut Public Elementary School has a population (N) of 53 with 22 students, a sample of 47 so that a sample is obtained for Curut Public Elementary School. As for column 2, it is described as follows: the total population (N) is 53, 31 the number of students, and the sample value is 47. Therefore, 27 samples of students are obtained for Penawangan Public Elementary School 1.

The research instrument used a questionnaire and documentation using validity and reliability tests. Prerequisite test used normality and linearity tests. Hypothesis testing is carried out using Simple Linear Regression statistical analysis as a test of the effect of one independent variable on the type of dependent variable using the t-test, while as a tool to measure how far Multiple Linear Regression analysis affects the influence of two independent and dependent variables using the F test.

Results and Discussion

Analysis of the Effect of Thematic HOTS Questions on Student Learning Outcomes

HOTS is students' critical thinking knowledge in the form of analysis, synthesis, and evaluative but also includes mental activity to explore creative, complex, and reflective experiences (Wardana, 2010). In her research (Wasifatun Najiroh, 2020) she explained that students need to have the skills to analyze, create and evaluate critically. The explanation is as follows: a) analyzing (C4) students at this stage should prioritize thinking more operationally. Analyzing by distinguishing, managing, and being able to connect, the verbs used are to distinguish, determine, compare, criticize and sort. b) evaluate (C5) which has the

meaning of producing actions based on moderate categories, for example checking and criticizing the operational verbs used are evaluation, sorting/selecting, assessing, refuting, and giving opinions. c) creating (C6) required students' ability to scheme, bring on, find out, raise, plan, magnify, enrich, renew, and change. The operational verbs used are to explain, interpret, and predict.

Table 2. Coefficient of Determinant

Regression Statistics	
Observations	47
Standard Error	4.003995801
R Square	0.298592292
Adjusted R Square	0.266710123
Multiple R	0.54643599

The calculation of the determinant coefficient obtained an R Square of 29.8% Based on these data, there are equations of simple linear regression analysis, regression Y = 53,039 + 0,319 X_1. So it is substantial, that learning outcomes are worth 53,039 if there is no thematic HOTS question (X=0), but learning outcomes can increase by 0.319 if the higher order thinking skill question increases by 1.

Table 3. Correlation and T-Test values

	Coefficients	***Standard Error***	***t Stat***	***P-value***
Intercept	53.03930732	8.197247632	6.470380023	6.85814E-08
X1	0.319677737	0.153746227	2.079255817	0.043454245

The correlation value and T-test in the table above are t-test of X_1 (2.079), X_2 (3.101). With a correlation value of X_1 (0.04) < 0.05 and X_2 (0.003) < 0.05, so the two variables have a positive effect.

The t-test on dk = n – 2 and an error level of 5% obtained a two-party t-table with a value of 2.014103 and a t-count of 2.079, so that the t-count (2.079) lies > t-table (2.014103). Thus, H0 is rejected, which means that learning outcomes are proven to be significantly influenced by the thematic HOTS questions. Based on the calculation obtained a significant probability value of 0.04 < 0.05, then H_0 is rejected. The results of the hypothesis experiment decision showed a significant positive outcome on thematic HOTS questions on learning outcomes for grade IV elementary schools in the Grobogan Regency.

The conclusion from these findings is that the thematic HOTS questions have a significant effect, as seen from the determinant coefficient of 14.5% on learning outcomes, in elementary schools in Grobogan Regency for the 2021/2021 academic year; the results obtained are similar to the research carried out (Agustin Mutia, 2021) can be proven that there was a significant effect on the HOTS questions theme eight sub-theme 3 learning 1 and 2 on learning outcomes by 49.0%.

By contributing to each other, the 2013 curriculum synergize in implementation of learning so that it significantly forms the potential of students, one of the efforts is to apply thematic hots questions as an instrument that can develop quality, as well as guide and manifest students so that they can compete in the global era in accordance with indicators of learning outcomes in the cognitive domain, including knowledge, understanding, application, study, manufacture, and evaluation (Ricardo & Meilani, 2017).

One of the efforts of the 2013 curriculum in the implementation of learning HOTS is the ability to think high by using "know-how" in order that the utility of thematic hots-based

Vol. 8, No. 3 : September 2022
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pp. 795-805
Email: jklppm@undikma.ac.id

questions can influence student learning outcomes. high thinking skills in training students' skills are classified into 4, which are; firstly it can train students in critical thinking, secondly creating a sense of creativity, thirdly help to practice problem-solving, and fourthly making decisions, through inquiry or making conjectures, HOTS may be included in a manner that does not restrict students in conveying assumptions, thoughts, or critiques (Ahmad et al., 2021). Basically, the context of evaluation in HOTS question not only minimize the ability to recall information know-how as a substitute degree the ability to: 1) switch one concept to another, 2) drill and apractice data, 3) locate connections from distinctive sorts of statistics, 4) use facts to clear up problems, and 5) have a look at ideas and record severely (Herman et al., 2021).

As for teaching theme lessons to students, the following steps are: (1) Selection of certain themes, (2) Determining certain concepts, (3) Determining learning activities, (4) Determining subject matter to carry out activities, (5) Reviewing activities. and subject matter related to the content, (6) Distribution and implementation can be facilitated by preparing lesson plans, (7) The presentation of learning activities is obtained through the determination of the class order, and (8) Follow-up with discussions (Wolfinger in Chumdari et al., 2018).

Analysis of the Effect of Critical Thinking Skills on Learning Outcomes of Elementary School Students

Table 4. Correlation and T-Test values

	Coefficients	***Standard Error***	***t Stat***	***P-value***
Intercept	53.03930732	8.197247632	6.470380023	6.85814E-08
x2	0.415313911	0.133907943	3.101488234	0.003356219

This simple linear regression analysis shows the regression equation
Y = 53.039 + 0.415 X2. that is interpreted, if the ability to think critically does not exist (X = 0), then the learning outcomes are worth 53,039. However, if critical thinking skills increase by 1, it is estimated that learning outcomes will increase by 0.415.

Only use one space The t-test on dk = n – 2 and an error rate of 5% obtained t-count 3.101 with t-table 2.014103 for the two-party test, t-count (3.101) lies > t table (2.014103), so H0 is rejected, meaning the ability to think critical thinking is proven to affect student learning outcomes. Based on the obtained a significant probability value of 0.003 < 0.05, it can be concluded that H_0 is rejected. With the results described above, it can be concluded that applying critical thinking skills can affect student learning outcomes, especially in the fourth grade of elementary school in the Grobogan area. Critical thinking as reaching conclusions according to goals and knowledge, while mentioning it as students' application of previous knowledge and changing it after the assessment process (Yazar Soyadı, 2015). The higher the critical thinking of students in solving problems positively, it can improve learning outcomes, one way is by the need for support from various parties (Beddu, 2019), such as by teaching teachers in schools to start getting used to 4C including communication, collaboration, creative thinking, critical thinking, solving problems in realizing the success of parental student learning activities, and a conducive environment can be the main factor, so that students can think critically and can affect student learning outcomes. According to (Indrašienė et al., 2022) Critical thinking is the potential to motive, replicate and act significantly for the best of oneself, others and society crucial.

The data described is relevant to previous research; it is proven that learning outcomes are significantly influenced by critical thinking skills 59.8% (Saputri et al., 2020). From these findings, it means that although critical thinking skills only have a significant

Vol. 8, No. 3 : September 2022
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pp. 795-805
Email: jklppm@undikma.ac.id

effect, it can be seen from the determinant coefficient of 22.9% on learning outcomes. Elementary schools in Grobogan Regency for the 2021/2022 academic year still need to be improved in inculcating critical thinking skills. According to (Ramdliyani, 2012) the focus of critical thinking is the definition of something that is full of awareness in achieving certain goals and can consider and choose in determining a decision. Critical thinking aims to find good solutions to the problems at hand. Students with critical thinking are active thinkers, solution inquiries to understand, search for answers and solutions, guide their solution with arguments, interpret, analyze logically and examine other people's arguments (Cojocariu & Butnaru, 2014), In addition, according to (Saptono et al., 2020) thinking skills must be taught so that students acquire abilities and skills, by creating a pleasant learning atmosphere, supportive peers, and innovative and creative teachers so as to create a good learning process

Analysis of the Influence of the Application of Thematic HOTS Questions and Critical Thinking Skills Together on Student Learning Outcomes

The coefficient of multiple regression analysis found regression of Y = 53.039 + 0.319 + 0.415, which means that learning outcomes will get increase, if the thematic HOTS questions and critical thinking skills are improved, likewise, if the thematic HOTS questions and critical thinking skills are increased by 1, the learning outcomes are estimated 53,773.

Table 5. F-test significance

ANOVA

	Df	*MS*	*F*	*SS*	*Significance F*
Regression	2	150.1474515	9.365495045	300.294903	0.00040865
Residual	44	16.03198238		705.4072246	
Total	46			1005.702128	

Judging from the Anova table, it can be concluded that the F-test is 9.36 with a significant level of 0.000 so that it has a positive effect. F test at an error rate of 5% dk the numerator = k and dk the denominator = (n-k-1). From the F test obtained F count (9.365) > F table (3.21) with a significance of 0.00, then H0 is rejected and concluded significant, with a determinant coefficient of 0.33% meaning that the thematic HOTS questions and critical thinking skills together significant effect on the learning outcomes of fourth-grade elementary school students in Grobogan Regency.

Implementing HOTS in the classroom can be achieved if students in the class actively participate during learning. To carry out HOTS activities, teachers need active student to realize it because passive student usually do not speak in the discussion and tend to only listen to what other people have to say. They are often silent even though they know the answers to these questions. This certainly thwarts the learning objectives involving HOTS (Parimaladevi & Ahmad, 2019).

To follow the 21st century, learning is also expected to be able to follow the flow of change, one of which is by providing students with HOTS-based questions, one of the characteristics of these questions is having a bloom taxonomy with levels C4-C6 (Maulina et al., 2019) namely analyzing, evaluating, creating, in these questions students are expected to be able to solve problems and be able to relate them to daily life so that indirectly students have critical thinking skills, this can be honed in the school environment in habituation such as in the learning process, a good classroom atmosphere. creative and innovative so that the thematic HOTS questions simultaneously in developing high-level thinking skills effect learning outcomes.

Vol. 8, No. 3 : September 2022
E-ISSN: 2442-7667
pp. 795-805
Email: jklppm@undikma.ac.id

The findings of previous research (Mayasari, 2022) from the results of this research test of student mastery in post-test learning, that student learning outcomes reach a success rate of 100%, by applying HOTS question-based worksheets to form critical thinking skills, the method used is discovery learning. So, it can be concluded that the application of LKPD is suitable for training students' ability in critical thinking and influencing student learning outcomes.

Thematic learning has some advantages, which are (1) Extra comprehensive studying and active pupil participation, (2) Eradication of obstacles among the subjects, (three) Children's growth adapted to authentic material, (4) Conceptualization is more emphasized than memorization, (5) Students choose topics in keeping with their pastimes and mastering tasks independently, (6) Students are free to choose the time to study according to their respective abilities, (7) Consideration on problem-solving, (8) Interpersonal capabilities can be evolved thru group activities, (9) Various learning styles, classical learning, massive groups, small corporations or individuals based on scholar pastimes, (10) According to the characteristics of the material, the assessment technique can be more diverse, not only with general tests. Further, thematic learning can enable students to analyze topics better, apprehend key standards and locate value in issues (Nugrahaningsih et al., 2020).

In addition, learning outcomes are used as a benchmark to measure the success of the learning process and objectives so that it can be described as a benchmark for teachers in identifying and evaluating student learning processes so that they can be observed the extent to which students' absorption and can be used as a benchmark for an educational institution to have achieved the predetermined goals. The role of the teacher is very important in motivating students before learning activities because it can add enthusiasm for learning so that it affected learning outcomes (Andriani & Rasto, 2019).

Conclusion

The conclusions obtained from the results of this study are: (1) the application of thematic HOTS questions has a significant effect of 14.5% on learning outcomes. (2) Critical thinking skills have a significant effect of 22.9% on learning outcomes. (3) The application of thematic HOTS questions and critical thinking simultaneously has a significant effect of 0.33% on learning outcomes. This research implies that the refraction of higher-order thinking and critical thinking must start from elementary school so that students can keep up with the changes in the 21st century, besides that teachers also need to prepare creative and innovative teaching materials so that learning occurs that sharpens students to think at higher levels.

Recommendation

Recommendations based on the results of this study are; (1) for teachers, in order to be able to manage to learn not only using the lecture method but also using creative methods to stimulate students to learn to reason and be able to relate them to real-life problems following the objectives of higher-order thinking skills (2) for students, participation active in the learning process such as actively asking questions, receiving teacher feedback can foster higher-order thinking skills and critical thinking (3) for schools, the use of the 2013 curriculum and the independent curriculum should provide innovative learning media so that it can emphasize students to think at higher levels.

Vol. 8, No. 3 : September 2022
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pp. 795-805
Email: jklppm@undikma.ac.id

References

Abdul Majid. (2014). *Pembelajaran Tematik Terpadu*. Remaja Rosdakarya.

Agustin Mutia. (2021). Pengaruh Soal Higher Order Thinking Skill (Hots) Terhadap Keterampilan Berpikir Kritis Dan Hasil Belajar Siswa Pada Tema 8 Sub Tema 3 Di Kelas Iv Sekolah Dasar. *Jurnal Edukasi: Kajian Ilmu Pendidikan*, *7*(2), 18–24. https://doi.org/10.51836/je.v7i2.234

Ahmad, D. N., Karim, A., Zulkarnain, I., Ati, A. P., & Nusantari, D. O. (2021). Analysis Creative Thinking Ability and Scientific Communication in HOTS Learning Using Whatsapp Media. *Journal of Physics: Conference Series*, *1823*(1). https://doi.org/10.1088/1742-6596/1823/1/012074

Aji, U. S. (2020). Analisis Higher Order Thinking Skill (Hots) Siswa Madrasah Ibtidaiyah Dalam Menyelesaikan Soal Bahasa Indonesia. *ELEMENTARY: Islamic Teacher Journal*, *8*(2), 377. https://doi.org/10.21043/elementary.v8i2.7440

Andriani, R., & Rasto, R. (2019). Motivasi belajar sebagai determinan hasil belajar siswa. *Jurnal Pendidikan Manajemen Perkantoran*, *4*(1), 80. https://doi.org/10.17509/jpm.v4i1.14958

Arikunto. (2014). *Prosedur Penelitian*. Rineka Cipta.

Baderan, J. K. (2018). Pengembangan Soal. *PEDAGOGIKA Jurnal Ilmu Pendidikan Volume 9 (Nomor 2) 2018*, *9*(Nomor 2), 152–178.

Beddu, S. (2019). Implementasi Pembelajaran Higher Order Thinking Skills (HOTS) Terhadap Hasil Belajar Peserta Didik. *Jurnal Pemikiran Dan Pengembangan Pembelajaran*, *1*(3), 71–84.

Chumdari, C., Sri Anitah, S. A., Budiyono, B., & Nunuk Suryani, N. (2018). Implementation of Thematic Instructional Model in Elementary School. *International Journal of Educational Research Review*, *3*(4), 23–31. https://doi.org/10.24331/ijere.424241

Cojocariu, V.-M., & Butnaru, C.-E. (2014). Asking Questions – Critical Thinking Tools. *Procedia - Social and Behavioral Sciences*, *128*, 22–28. https://doi.org/10.1016/j.sbspro.2014.03.112

Darmawan. (2013). *Penelitian Kuantitatif*. Remaja Rosdakarya.

E. Mulyasa. (2015). *Implementasi Kurikulum 2013*. PT Remaja Rosdakarya.

Facione, P. a. (2011). Critical Thinking : What It Is and Why It Counts. *Insight Assessment*, *ISBN 13: 978-1-891557-07-1.*, 1–28. https://www.insightassessment.com/CT-Resources/Teaching-For-and-About-Critical-Thinking/Critical-Thinking-What-It-Is-and-Why-It-Counts/Critical-Thinking-What-It-Is-and-Why-It-Counts-PDF

Fanani, A., & Kusmaharti, D. (2018). Pengembangan Pembelajaran Berbasis Hots (Higher Order Thinking Skill) Di Sekolah Dasar Kelas V. *Jurnal Pendidikan Dasar*, *9*(1), 1–11.

Feng, Z. (2014). Using Teacher Questions to Enhance EFL Students' Critical Thinking Ability. *Journal of Curriculum and Teaching*, *2*(2), 147–153. https://doi.org/10.5430/jct.v2n2p147

Florea, N. M., & Hurjui, E. (2015). Critical Thinking in Elementary School Children. *Procedia - Social and Behavioral Sciences*, *180*(November 2014), 565–572. https://doi.org/10.1016/j.sbspro.2015.02.161

Herman, H., Rahim, A. R., & Syamsuri, A. S. (2021). Analisis Instrumen Tes Hasil Belajar Berbasis Higher Order Thinking Skill (Hots). *Jurnal Riset Dan Inovasi Pembelajaran*, *1*(3), 88–101. https://doi.org/10.51574/jrip.v1i3.65

Vol. 8, No. 3 : September 2022
E-ISSN: 2442-7667
pp. 795-805
Email: jklppm@undikma.ac.id

Hunt, T., Carper, J., Lasley, T., & Raisch, C. (2013). Trends in International Mathematics and Science Study (TIMSS). *Encyclopedia of Educational Reform and Dissent*, 562–569. https://doi.org/10.4135/9781412957403.n438

Indrašienė, V., Jegelevičienė, V., Merfeldaitė, O., Penkauskienė, D., Pivorienė, J., Railienė, A., Sadauskas, J., & Valavičienė, N. (2022). The Interaction Between Understanding of Critical Thinking and Teaching/Learning of Critical Thinking Skills. *Pedagogika*, *144*(4), 25–42. https://doi.org/10.15823/p.2021.144.2

Marchelina Dwi Saputri, K. C. S. (2018). *ANALYSIS OF CRITICAL THINKING IN CLASS 4 STUDENTS OF SDN 2 KUTOSARI IN THEMATIC LEARNING 2013 CURRICULUM*. *1*, 274–279.

Maulina, D., Slamet, S., & Indriayu, M. (2019). *Higher Order Thinking Skills (HOTS) Instrument in Social Studies Learning for Elementary School Students in Grobogan Regency*. https://doi.org/10.4108/eai.27-4-2019.2286828

Mayasari, W. noviati dan S. dan Li. (2022). Efektivitas Lembar Kerja Peserta Didik (Lkpd) Berbasis Hots Terhadap Kemampuan Berpikir Kritis Siswa Di Sma Negeri Kecamatan Sumbawa. *Jurnal Kependidikan*, *6*(2), 11–17.

Nirwana, N., Rochman, S., & Zukmadini, A. Y. (2019). *An assessment of Higher Order Thinking Skills (HOTS) Based on Rasch Models of Student in Physics Learning*. *295*(ICETeP 2018), 162–165. https://doi.org/10.2991/icetep-18.2019.40

Nugrahaningsih, T. K., Almasitoh, U. H., Darmo, M. P., & Riyadi, I. (2020). *The Implementation of Thematic–Scientific Learning to Build High-Order Thinking Skills of Elementary School Students*. *397*(Icliqe 2019), 846–855. https://doi.org/10.2991/assehr.k.200129.105

Parimaladevi, P., & Ahmad, A. (2019). *The implementation of Higher-Level Thinking Skills (HOTS) in History Education*. *2*, 216–220. https://doi.org/10.32698/gcs.01100

Rachmedita, V., Sinaga, R. M., & Pujiati. (2017). Peningkatan kemampuan berpikir kritis melalui penggunaan strategi active sharing knowledge. *Jurnal Studi Sosial Program Pascasarjana P-IPS*, *5*(1).

Ramadhanti, A., & Agustini, R. (2021). Analisis Keterampilan Berpikir Kritis Peserta Didik Melalui Model Inkuiri Terbimbing Pada Materi Laju Reaksi. *Jurnal Kependidikan: Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan, Pengajaran Dan Pembelajaran*, *7*(2), 385. https://doi.org/10.33394/jk.v7i2.3458

Ricardo, R., & Meilani, R. I. (2017). Impak Minat dan Motivasi Belajar Terhadap Hasil Belajar Siswa. *Jurnal Pendidikan Manajemen Perkantoran*, *2*(2), 79. https://doi.org/10.17509/jpm.v2i2.8108

Santos, L. F. (2017). The Role of Critical Thinking in Science Education. *Journal of Education and Practice*, *8*(20), 159–173.

Sappaile, B. I., & Makassar, U. N. (2020). *KONSEP PENELITIAN EX-POST FACTO*. *January*.

Saptono, A., Suparno, S., Wibowo, A., Ahman, E., Ismiyati, I., & Sukayugi, D. (2020). An analysis of higher-order thinking skills (HOTS) in the learning of economics. *International Journal of Learning, Teaching and Educational Research*, *19*(4), 268–290. https://doi.org/10.26803/ijlter.19.4.16

Saputri, R., Nurlela, N., & Patras, Y. E. (2020). Pengaruh Berpikir Kritis Terhadap Hasil Belajar Matematika. *JPPGuseda | Jurnal Pendidikan & Pengajaran Guru Sekolah Dasar*, *3*(1), 38–41. https://doi.org/10.33751/jppguseda.v3i1.2013

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Email: jklppm@undikma.ac.id

Setiawan, H., Khair, B. N., Ratnadi, R., Hakim, M., & Istiningsih, S. (2020). *Developing HOTS-Based Assessment Instrument for Primary Schools*. *465*(Access 2019), 216–220. https://doi.org/10.2991/assehr.k.200827.054

Wardana, N. (2010). Pengaruh Model Pembelajaran Berbasis Msalah dan Ketahanmalangan Terhadap Kemampuan Berfikir Tingkat Tinggi dan pemahaman konsep fisika. *Jurnal Ilmiah Pendidikan Dan Pembelajaran*, *Vol 6*, *No*, 1625-1635.

Wasifatun Najiroh, M. A. (2020). ANALISIS SOAL HOTS PADA BUKU SISWA TOKOH PENJELAJAH ANGKASA LUAR. *Pendidikan Dasar*, *2*(Penilaian), 2–6.

Yazar Soyadı, B. B. (2015). Creative and Critical Thinking Skills in Problem-based Learning Environments. *Journal of Gifted Education and Creativity*, *2*(2), 71–71. https://doi.org/10.18200/jgedc.2015214253