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THE CORRELATION BETWEEN SELF-EFFICACY AND STUDENTS' HIGHER ORDER THINKING SKILLS IN EFL LEARNING CONTEXT AT SMKS PRO-SKILL INDONESIA

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ABSTRACT

This study aims to investigate the correlation between students' self-efficacy and their Higher Order Thinking Skills (HOTS) in the context of English as a Foreign Language (EFL) learning. The background of this study is based on the demands of 21st-century education, which require students to develop higher-order thinking skills to comprehend texts critically, as well as the role of psychological factors such as self-efficacy in influencing students' cognitive engagement and academic performance. This study employed a quantitative correlational design involving 91 students selected from a population of 118 students using Slovin's formula with a 5% margin of error. The data were collected through a self-efficacy questionnaire based on Bandura's theory and an essay-based HOTS reading comprehension test referring to the revised Bloom's Taxonomy. The data were analyzed using Pearson Product Moment correlation and simple linear regression. The findings revealed a positive and statistically significant correlation between self-efficacy and students' HOTS ($r = 0.267$, $p = 0.011$). The mean score of students' self-efficacy was categorized as high ($M = 2.93$), while the mean score of HOTS was 9.57. Furthermore, self-efficacy contributed 7.1% to students' HOTS. In conclusion, students with higher self-efficacy tend to demonstrate better higher-order thinking skills. Therefore, strengthening students' self-belief may support the development of HOTS in vocational EFL learning contexts.

Keywords: EFL learning; higher order thinking skills; reading comprehension; self-efficacy

1. INTRODUCTION

In the context of 21st-century education, students are expected not only to acquire linguistic knowledge but also to develop complex cognitive abilities that enable them to engage critically with information. Among these abilities, Higher Order Thinking Skills (HOTS) have become a central component of modern learning, as they allow students to analyze, evaluate, and create based on the information they encounter (Anderson & Krathwohl, 2001; Agustin & Razi, 2023). In the context of English as a Foreign Language (EFL) learning, these skills are particularly important in reading comprehension, where students are required not only to understand literal meaning but also to interpret, evaluate, and construct meaning from texts (Dorgham & Bin Obiad, 2025; Rahmadani et al., 2023).

Reading is widely recognized as a complex cognitive process involving the interaction between linguistic knowledge, cognitive strategies, and readers' background knowledge. In EFL contexts, this process becomes more challenging as students must deal with both language limitations and cognitive demands simultaneously. Therefore,

students are expected to apply higher-level cognitive processes such as analyzing relationships between ideas, evaluating information, and constructing new meanings, which correspond to the higher levels of Bloom's Revised Taxonomy (Anderson & Krathwohl, 2001).

Despite the importance of HOTS in reading comprehension, many students still experience difficulties in developing these skills. In practice, students often rely on lower-level comprehension strategies such as translating vocabulary or identifying main ideas, while analytical and evaluative skills remain underdeveloped (Rahmadani et al., 2023; Mingmin Zhang, 2024). As a result, students may understand the explicit meaning of texts but struggle to interpret implicit meanings, evaluate arguments, or synthesize information critically. This issue suggests that the challenges in developing HOTS are not solely related to cognitive aspects but may also be influenced by psychological factors.

One psychological factor that is believed to influence students' learning processes is self-efficacy. Self-efficacy refers to an individual's belief in their ability to accomplish specific tasks (Usher & Pajares, 2009). Students with high self-efficacy tend to demonstrate greater motivation, persistence, and strategic effort when facing challenging tasks (Saleh, 2025). In reading contexts, self-efficacy affects how students approach complex texts, apply comprehension strategies, and sustain effort in understanding difficult materials. Conversely, students with low self-efficacy are more likely to avoid challenging tasks and rely on minimal learning strategies.

Previous studies have shown that self-efficacy is closely related to students' academic achievement, particularly in reading skills. These studies indicate that students with higher levels of self-efficacy tend to perform better in reading and demonstrate greater engagement in learning activities (Saleh, 2025). On the other hand, research on HOTS has also revealed that higher-order thinking abilities contribute significantly to deeper and more critical reading comprehension (Setyani & Billah, 2024; Kurniawan et al., 2025).

However, several limitations remain in the existing literature. First, many previous studies have examined self-efficacy and HOTS separately, resulting in a lack of comprehensive understanding of the relationship between psychological and cognitive factors. Second, research focusing on the relationship between self-efficacy and HOTS in EFL contexts, particularly at the vocational high school level, is still limited. Third, many studies have focused on instructional interventions rather than examining the natural correlation between these variables.

Considering these gaps, this study aims to investigate the relationship between students' self-efficacy and their Higher Order Thinking Skills (HOTS) in reading comprehension among vocational high school students. This study is expected to provide empirical insights into how students' beliefs about their abilities are associated with their cognitive engagement in processing English texts.

The novelty of this research lies in its integrative approach, which simultaneously examines psychological (self-efficacy) and cognitive (HOTS) constructs in EFL reading contexts. Unlike previous studies that tend to examine these variables separately, this study focuses on their relationship within an authentic learning environment at the vocational high school level.

Furthermore, the findings of this study are expected to provide both theoretical and practical contributions. Theoretically, this study may enrich the literature on the interaction between motivational and cognitive factors in language learning. Practically,

the results may assist teachers in designing reading instruction that not only enhances students' higher-order thinking skills but also strengthens their self-efficacy.

2. METHODOLOGY

This study employed a quantitative correlational research design to investigate the relationship between students' self-efficacy and their Higher Order Thinking Skills (HOTS) in reading comprehension. A correlational approach was selected because the purpose of the study was not to manipulate variables but to examine whether a relationship existed between the two constructs. Through this design, the researcher was able to measure the degree and direction of the association between students' beliefs about their abilities and their higher-order cognitive engagement in reading activities.

The research was conducted at a vocational high school in Pekanbaru. The setting was considered appropriate because students at this level have been exposed to English reading instruction and are expected to develop higher-order thinking skills when interpreting texts. The data collection process was carried out during the 2024/2025 academic year, when students had already gained sufficient experience in reading-related learning activities.

The population of the study consisted of 118 students. Since it was not practical to involve the entire population, a sample was determined using Slovin's formula with a 5% margin of error. Based on this calculation, a total of 91 students were selected as the sample, which was considered representative of the population.

The study focused on two main variables. The independent variable (X) was students' self-efficacy, defined as their belief in their ability to perform reading tasks in English. The dependent variable (Y) was students' Higher Order Thinking Skills (HOTS) in reading comprehension, which refer to their ability to analyze, evaluate, and construct meaning from texts.

Two instruments were used to collect the data. The first instrument was a self-efficacy questionnaire developed based on Bandura's theory, covering indicators such as self-confidence, effort and persistence, and task management. The second instrument was a HOTS test in the form of essay questions based on the revised Bloom's Taxonomy, designed to measure students' higher-order thinking skills in reading.

The self-efficacy questionnaire employed a four-point Likert scale consisting of strongly disagree, disagree, agree, and strongly agree. The use of a four-point scale without a neutral option encouraged respondents to provide more definite responses. Meanwhile, the HOTS test was assessed based on criteria reflecting students' abilities in analyzing, evaluating, and creating meaning from the given texts.

Data were collected through the distribution of questionnaires and the administration of the HOTS test to students. All collected data were then compiled and prepared for further analysis.

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 26. Descriptive statistics were used to determine the general level of students' self-efficacy and HOTS, such as mean scores. To examine the relationship between the two variables, the Pearson Product Moment correlation test was applied. This statistical technique is commonly used to measure the strength and direction of the relationship between two continuous variables.

The Pearson correlation coefficient (r) ranges from −1 to +1, where values closer to +1 indicate a strong positive relationship, values closer to −1 indicate a strong negative relationship, and values near zero indicate no significant relationship. In this study, the level of significance was set at 0.05. If the obtained p-value was lower than 0.05, the correlation between self-efficacy and students' HOTS was considered statistically significant.

3. RESULTS

This section presents the findings of the study and the discussion of the results related to the relationship between students' academic self-efficacy and their Higher Order Thinking Skills (HOTS) in writing skill. The findings were obtained from the analysis of the questionnaire responses collected from students at the vocational high school. The analysis focused on three main aspects: the level of students' academic self-efficacy, the level of students' Higher Order Thinking Skills in writing skill, and the correlation between these two variables.

3.1 Academic Self-Efficacy in EFL Writing Skill

Academic self-efficacy has been widely recognized as a significant psychological factor influencing students' academic engagement and learning performance, particularly in English as a Foreign Language (EFL) contexts. Rooted in Social Cognitive Theory proposed by Albert Bandura, self-efficacy refers to individuals' beliefs about their capability to organize and execute actions required to achieve specific academic outcomes. These beliefs influence how students approach learning tasks, regulate effort, and maintain persistence when encountering difficulties.

In the context of writing skill, academic self-efficacy plays an important role in shaping students' confidence in generating ideas, organizing arguments, and producing coherent written texts in English. Students with higher levels of self-efficacy tend to demonstrate greater willingness to engage in writing tasks, revise their work, and overcome challenges such as limited vocabulary or grammatical difficulties. This confidence also supports their ability to sustain effort during complex writing processes.

In EFL learning environments, academic self-efficacy contributes not only to motivational readiness but also to cognitive engagement. Students who believe in their writing abilities are more likely to apply effective writing strategies, such as planning, drafting, revising, and editing their work. Previous studies support this view. Schunk and DiBenedetto (2021) highlight that self-efficacy strengthens students' strategic learning behavior and academic persistence, while Graham (2022) reports that learners with higher self-efficacy levels show better performance in writing tasks.

Within EFL writing contexts, these findings suggest that psychological readiness serves as a foundation for developing productive language skills. When students feel confident in their writing abilities, they are more likely to express ideas clearly, structure their texts logically, and engage more deeply in the writing process.

3.2 Higher Order Thinking Skills in EFL Writing Skill

Higher-order thinking skills (HOTS) represent advanced cognitive processes that enable learners to analyze, evaluate, and create ideas in meaningful ways. These processes are aligned with the revised Bloom's taxonomy framework introduced in A Taxonomy for Learning, Teaching, and Assessing, which classifies cognitive skills into hierarchical levels ranging from lower-order thinking to higher-order thinking.

In the context of EFL writing, HOTS plays a crucial role in helping students develop not only linguistic accuracy but also the ability to construct meaningful and well-organized texts. Writing requires students to generate ideas, organize arguments, evaluate information, and express their thoughts critically. Therefore, HOTS is essential for producing effective written communication.

Students with strong higher-order thinking skills are able to analyze topics deeply, evaluate different perspectives, and present logical as well as creative arguments in their writing. According to Brookhart (2021), instructional practices that emphasize HOTS significantly improve students' analytical reasoning and academic literacy. This is particularly relevant in writing activities, where students must engage in complex cognitive processes throughout the writing stages.

Recent studies also indicate that integrating HOTS-oriented tasks such as problem-solving writing activities, argumentative essays, and reflective writing can

enhance students' engagement and critical thinking. These findings suggest that the development of writing skills in EFL contexts requires not only linguistic competence but also strong cognitive abilities to process and transform information into written form.

3.3 Correlation between Academic Self-Efficacy and HOTS in EFL Writing Skill.

To examine the relationship between academic self-efficacy and higher-order thinking skills, descriptive and inferential statistical analyses were conducted using SPSS version 25. The results are presented below.

Table 1 Descriptive Statistics of Research Variables

Variable	N	Mean	Std. Deviation	Category
Academic Self-Efficacy	91	9.57	2.06	Moderate
Higher Order Thinking Skills	91	9.57	2.066	Moderate

The descriptive statistics of the two main variables examined in this study, namely academic self-efficacy and students' Higher Order Thinking Skills (HOTS) in EFL writing skill, are presented in Table 1. The results indicate that the mean score of academic self-efficacy is **9.57** with a standard deviation of **2.06**, while the mean score of students' HOTS is also **9.57** with a standard deviation of **2.066**. Both variables fall into the **moderate** category, indicating that the participants generally demonstrate a sufficient level of confidence in their academic abilities as well as an adequate level of higher-order cognitive engagement in writing activities.

The relatively similar mean scores between the two variables suggest that students' psychological readiness and cognitive abilities are balanced in supporting their writing performance. In addition, the standard deviation values indicate that students' responses are relatively consistent, meaning that most participants share similar levels of academic self-efficacy and higher-order thinking skills. These findings imply that students possess a fairly stable level of confidence and cognitive capability when engaging in writing tasks that require idea generation, organization, and critical thinking.

Table 2 Normality and Linearity Test

Test	Sig. Value	Description
Normality Test	0.275	Normally Distributed
Linearity Test	0.007	Linear Relationship

Table 2 presents the results of the normality and linearity tests conducted prior to the correlation analysis. Based on the One-Sample Kolmogorov-Smirnov test, the significance value is 0.275, which is higher than the significance level of 0.05. This indicates that the data are normally distributed.

Furthermore, the linearity test shows a significance value of 0.007, which is lower than 0.05. This result indicates that there is a linear relationship between academic self-efficacy and students' Higher Order Thinking Skills (HOTS) in EFL writing skill. These findings confirm that the assumptions required for conducting the Pearson Product Moment correlation analysis have been fulfilled. Therefore, it is appropriate to proceed with the correlation analysis to examine the relationship between the two variables.

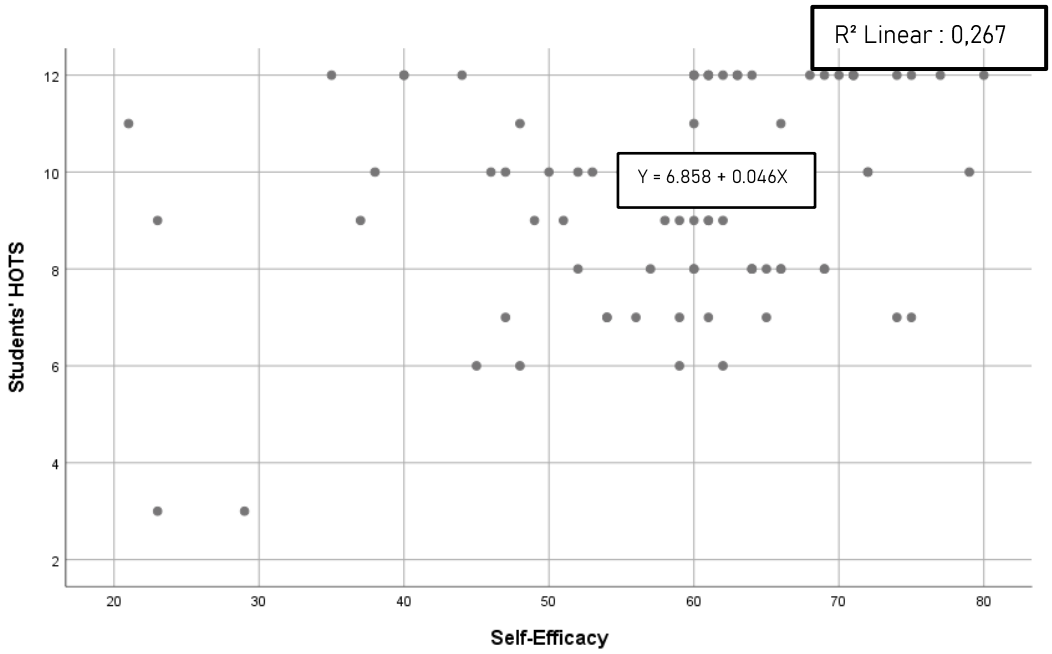
Table 3 Pearson Correlation Result

Variables	r	Sig. (2-tailed)	R^2	Interpretation
Academic Self-Efficacy and HOTS	0.267	0.011	0.071	Low Positive Correlation

Table 3 presents the results of the Pearson Product Moment correlation analysis between academic self-efficacy and students' Higher Order Thinking Skills (HOTS) in EFL writing skill. Based on the SPSS output, the correlation coefficient (r) is 0.267 with a significance value of 0.011, which is lower than the significance level of 0.05. This indicates that there is a statistically significant relationship between academic self-efficacy and HOTS.

The positive correlation coefficient suggests that students with higher levels of academic self-efficacy tend to demonstrate better higher-order thinking skills in writing. However, the strength of the relationship is categorized as low, indicating that although self-efficacy contributes to students' HOTS, the effect is relatively weak. Furthermore, the coefficient of determination (R^2 = 0.071) shows that academic self-efficacy contributes approximately 7.1% to students' higher-order thinking skills in writing, while the remaining percentage is influenced by other factors such as learning strategies, instructional methods, and language proficiency.

Although the SPSS output also shows correlations involving additional variables, this study focuses specifically on the relationship between academic self-efficacy and HOTS, as these are the primary variables examined in this research.



Picture 1. Scatter Diagram Correlation

Based on the scatter diagram, the regression line slopes upward from left to right, indicating a positive relationship between students' academic self-efficacy and Higher Order Thinking Skills (HOTS) in EFL writing skill. This means that when students' self-efficacy increases, their HOTS also tend to improve. In other words, students who feel more confident about their academic abilities are more likely to perform better in higher-level writing tasks.

The statistical findings reveal a positive relationship between academic self-efficacy and students' higher-order thinking skills in writing. The correlation coefficient (r = 0.267) suggests that students who possess higher academic confidence tend to demonstrate better analytical and evaluative abilities in writing. However, the strength of the relationship is categorized as low, indicating that while self-efficacy contributes to HOTS, it is not the only determining factor.

Furthermore, the coefficient of determination (R^2 = 0.071) indicates that academic self-efficacy contributes 7.1% to the variance in students' higher-order thinking

skills. This result suggests that psychological factors play a role in shaping students' cognitive engagement, although other variables may also significantly influence their performance.

These findings are consistent with theoretical perspectives emphasizing the interaction between motivational and cognitive dimensions in learning. Students with stronger self-efficacy are more likely to persist in completing writing tasks and to apply higher-level thinking processes such as organizing ideas, evaluating arguments, and expressing opinions effectively.

From a pedagogical perspective, the results suggest that strengthening students' academic self-efficacy may help improve their higher-order thinking skills in writing. Lecturers can support this development by providing structured writing tasks, meaningful feedback, and opportunities for revision that enhance both students' confidence and cognitive engagement.

4. DISCUSSION

The findings of this study reveal that there is a positive and statistically significant correlation between academic self-efficacy and students' Higher Order Thinking Skills (HOTS) in EFL writing skill. The correlation coefficient ($r = 0.267$) indicates that students who have stronger beliefs in their academic abilities tend to demonstrate better higher-order thinking performance in writing tasks. Although the strength of the relationship is categorized as low, the positive direction suggests that self-efficacy still plays an important role in supporting students' cognitive engagement.

This finding is consistent with Bandura's Social Cognitive Theory, which emphasizes that self-efficacy beliefs influence how individuals approach tasks, regulate effort, and persist when facing challenges. In the context of writing skill, students who believe in their ability to write in English are more likely to engage actively in the writing process, including generating ideas, organizing arguments, and revising their work. As a result, they are more capable of applying higher-order thinking processes such as analyzing, evaluating, and creating written texts.

The results of this study also support the framework of Higher Order Thinking Skills proposed by Anderson and Krathwohl (2001), which highlights that higher-level cognitive processes involve analyzing, evaluating, and creating. In EFL writing contexts, these processes are essential for students to produce meaningful and well-structured texts. Students with strong self-efficacy are more likely to engage in these cognitive processes because they feel confident in their ability to complete complex writing tasks.

Furthermore, this finding is in line with previous research conducted by Michelot, Béland, and Poellhuber (2022), which found that self-efficacy plays a significant role in supporting students' critical thinking skills and learning engagement. Their study suggests that students with higher levels of self-efficacy tend to demonstrate stronger cognitive involvement when completing academic tasks that require deeper thinking.

Similarly, the findings are supported by Saleh (2025), who reported that self-efficacy significantly influences students' performance in EFL learning. Students with higher self-efficacy tend to apply more effective learning strategies, persist longer when facing difficulties, and demonstrate better academic outcomes. In the context of writing, this implies that confident students are more likely to develop their ideas critically and express them effectively in written form.

However, the relatively low correlation coefficient obtained in this study indicates that self-efficacy is not the only factor influencing students' Higher Order Thinking Skills. The coefficient of determination ($R^2 = 0.071$) shows that academic self-efficacy contributes only 7.1% to the variance in students' HOTS. This suggests that other factors, such as instructional strategies, learning environment, students' prior knowledge, and language proficiency, may also play significant roles in shaping students' higher-order thinking abilities in writing.

This interpretation is supported by Mao (2023), who emphasized that the development of higher-order thinking skills requires supportive teaching strategies and learning environments that encourage critical and reflective thinking. Likewise, Rahmadani, Geroda, and Pane (2023) highlighted that the implementation of HOTS-oriented learning activities can help students develop deeper cognitive engagement and improve their language skills.

From a pedagogical perspective, the findings of this study suggest that improving students' writing skills should not only focus on linguistic aspects but also consider psychological factors such as self-efficacy. Lecturers can support this development by providing structured writing tasks, constructive feedback, and opportunities for revision that help students build confidence in their writing abilities. When students feel confident, they are more willing to take risks, explore ideas, and engage in higher-level thinking processes during writing activities.

In conclusion, the results of this study confirm that academic self-efficacy has a meaningful relationship with students' Higher Order Thinking Skills in EFL writing skill. Although the strength of the relationship is relatively low, the findings indicate that students' beliefs in their own abilities contribute to their engagement in higher-order cognitive processes. Therefore, fostering both cognitive skills and positive academic beliefs is essential in helping students become more critical and effective writers in EFL contexts.

5. CONCLUSION

This study aimed to examine the relationship between students' academic self-efficacy and their Higher Order Thinking Skills (HOTS) in EFL writing skill among students in the English Education context. Based on the findings and discussion presented in the previous sections, several important conclusions can be drawn.

First, the findings indicate that students' academic self-efficacy plays an important role in supporting their engagement in writing activities. Students who possess higher levels of self-efficacy tend to show greater confidence in generating ideas, organizing arguments, and completing writing tasks. This suggests that students' beliefs about their academic abilities influence how they approach writing tasks and how persistently they deal with difficulties during the writing process.

Second, the results of this study show that students' Higher Order Thinking Skills in EFL writing are reflected in their ability to analyze, evaluate, and create written texts. These cognitive processes are essential in producing meaningful and well-structured writing. However, the development of these skills requires not only cognitive ability but also psychological readiness, which is closely related to students' level of self-efficacy.

Third, the correlation analysis reveals that there is a positive and statistically significant relationship between academic self-efficacy and students' Higher Order Thinking Skills in writing ($r = 0.267$, $p = 0.011$). Although the strength of the relationship is categorized as low, the positive direction indicates that students who have stronger beliefs in their academic abilities tend to demonstrate better higher-order thinking performance in writing tasks. This means that self-efficacy contributes to students' ability to engage in complex cognitive processes, even though it is not the only influencing factor.

Furthermore, the coefficient of determination ($R^2 = 0.071$) indicates that academic self-efficacy contributes 7.1% to the variance in students' HOTS in writing. This suggests that while self-efficacy plays a meaningful psychological role, a large proportion of students' higher-order thinking ability is influenced by other factors such as teaching strategies, learning environment, prior knowledge, and language proficiency. Therefore, improving students' writing skills requires a comprehensive approach that integrates both cognitive and psychological aspects.

The findings of this study provide important implications for teaching practices in EFL writing contexts. Lecturers are encouraged not only to focus on developing students' writing skills but also to strengthen their academic self-efficacy. This can be achieved by

providing constructive feedback, designing structured writing activities, and creating a supportive learning environment that encourages students to express their ideas confidently. When students feel more confident in their abilities, they are more likely to engage in higher-level thinking processes during writing activities.

In addition, writing instruction should incorporate activities that promote Higher Order Thinking Skills, such as argumentative writing, problem-solving tasks, and reflective writing exercises. These activities can help students practice analyzing information, evaluating ideas, and constructing well-developed arguments in their writing. By integrating HOTS-oriented instruction with efforts to enhance students' self-efficacy, educators can support the development of more critical, independent, and effective writers in EFL contexts.

Overall, this study contributes to the understanding of the relationship between academic self-efficacy and Higher Order Thinking Skills in EFL writing skill. The findings highlight that students' belief in their academic abilities plays a meaningful role in shaping their cognitive engagement in writing tasks. Future research is recommended to explore other factors that may influence students' higher-order thinking skills, such as learning strategies, motivation, classroom interaction, and instructional methods, in order to provide a more comprehensive understanding of how these skills can be effectively developed in language learning environments.

REFERENCES

Agustiar, A. A., & Amalia, N. (2024). Ahmad Dahlan Thoughts Through Al-Ma'un and Higher Order Thinking Skill (HOTS) in Education: Is It Relevance?. Jurnal Muhammadiyah Studies, 9(1), 9–19. https://doi.org/10.22219/jms.v9i1.12864

Agustin, S., & Razi, P. (2023). Validity of E-Book based on problem-based learning with higher order thinking skills oriented for senior high school. Journal of Physics: Conference Series, 2582(1), 012066. https://doi.org/10.1088/1742-6596/2582/1/012066

Alawiyah, T., Roza, Y., & Maimunah. (2023). Validitas soal tipe higher order thinking skills (HOTS) untuk memfasilitasi kemampuan numerasi siswa materi bangun ruang. Juring: Journal for Research in Mathematics Learning, 6(3), 255–264. https://doi.org/10.24014/juring.v6i3.24764

Amanda, C., & Hadiyanti, W. (2024). Utilizing memes for vocabulary learning development: EFL senior high school students' viewpoints. Salingka: Jurnal Bahasa dan Sastra, 21(1), 46–61 https://doi.org/10.26499/salingka.v21i1.1079

Amanda, C., & Hadiyanti, W. (2024). Utilizing memes for vocabulary learning development: EFL senior high school students' viewpoints. Salingka: Jurnal Bahasa dan Sastra, 21(1), 46-61. https://doi.org/10.26499/salingka.v21i1.1079

Anderson, L. W. and Krathwohl, D. R., et al (Eds..) (2001) A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives. Allyn & Bacon. Boston, MA (Pearson Education Group) https://quincycollege.edu/wp-content/uploads/Anderson-and-Krathwohl_Revised-Blooms-Taxonomy.pdf

Ariyana, I. K. S., & Sariyasa. (2024). A mathematics learning outcome test characterized by higher-order thinking skills for grade V elementary school students. Zero: Jurnal Sains, Matematika, dan Terapan, 8(2), 90–98. https://doi.org/10.30829/zero.v8i2.21807

Budyartati, S., Jamilah, J., Khalik, S., Rahayu, A. P., & Kosilah, K. (2024). Workshop dan Pelatihan Pembelajaran Berbasis Higher Order Thinking Skill (HOTS). Carmin: Journal of Community Service, 4(1), 19–22. https://doi.org/10.59329/carmin.v4i1.114

Dorgham, R., & Bin Obiad, L. (2025). Utilizing an instructional higher-order thinking-based strategy to improve EFL critical reading skills. Journal of Language Teaching and Research, 16(4), 1373–1382. https://doi.org/10.17507/jltr.1604.30

Elmasry, H. I. I. (2019). A Word Attack Skills-Based Program to Enhance EFL Secondary School Students' Vocabulary Learning and Reading Comprehension. (n.d.). OSF Preprints. https://doi.org/10.31235/osf.io/n43vu

Florent Michelot, Sébastien Béland, Bruno Poellhuber; A transnational comparative study of preservice teachers' critical thinking skills and metaliteracy self-efficacy. Higher Education, Skills and Work-based Learning 12 October 2022; 12 (5): 866–883. https://doi.org/10.1108/HESWBL-10-2021-0191

Iyer, M., & Begum, J. (2025). Solving skills before intervention on HOTS: A quantitative study on prospective teachers' assessment skills about critical thinking, creative thinking, and problem-solving skills. International Journal for Multidisciplinary Research, 7(5). https://doi.org/10.36948/ijfmr.2025.v07i05.56676

Kurniawan, A., Kuswanto, H., & Syar, N. I. (2025). Active learning using PBL and DELMAN method to enhance students' Higher Order Thinking Skills (HOTS) on Coulomb's Law material. Momentum: Physics Education Journal, 9(1), 80–91. https://doi.org/10.21067/mpej.v9i1.10953

Malik, E., Rohmatillah, R., & Rahmawati, I. N. (2025). An Analysis of English as a Foreign Language (EFL) Learners' Problems in Speaking Skills Based on Their Perception at Senior High School. Edunesia : Jurnal Ilmiah Pendidikan, 6(1), 190–206. https://doi.org/10.51276/edu.v6i1.1106

Mao Chaojing. A Study on Strategies for Cultivating Higher-Order Thinking Skills in Primary and Secondary School Students. Frontiers in Educational Research (2023) Vol. 6, Issue 20: 67-71. https://doi.org/10.25236/FER.2023.062011.

Mingmin Zhang. A Model for English Reading Teaching in Senior High School That Points to Higher-Order Thinking —"Questioning the Author" Theory Perspective. International Journal of New Developments in Education (2024), Vol. 6, Issue 3: 211-216. https://doi.org/10.25236/IJNDE.2024.060336.

Muhassanah, N., & Hayati, A. (2022). Workshop Penyusunan Soal HOTS (Higher Order Thinking Skills) Berdasarkan Kisi-Kisi Ujian Nasional Matematika SD. ADI Pengabdian Kepada Masyarakat, 2(2), 56–63. https://doi.org/10.34306/adimas.v2i2.636

Mundo, H. J. C. D. (2022). 21st century digital skills, technology integration in instruction and challenges encountered by senior high school teachers in Muntinlupa National High School. International Journal of Multidisciplinary Research and Analysis, 5(05), 101-120. https://doi.org/10.47191/ijmra/v5-i5-35

Nur Lita, & Rahman, I. F. (2024). Using YouTube Videos to Teach Students' Transactional Speaking Skills at Senior High School. English Language Teaching for EFL Learners Journal, 6(01), 33–45. https://doi.org/10.24252/elties.v6i01.45095

Rahmadani, A., Geroda, G. B., & Pane, W. S. (2023). Using HOTS (Higher Order Thinking Skills) to improve students' critical reading in English class. Inquest Journal, 1(2), 133-139. https://doi.org/10.53622/ij.v1i02.173

Saleh, M. M. (2025). Using interactive reading model to develop preparatory school pupils' EFL reading comprehension skills and self-efficacy. Journal of Faculty of Education, 36(141.1), 1-56. https://doi.org/10.21608/jfeb.2024.310800.1987

Setyani, D. A., & Billah , A. . (2024). Effectiveness of STAD with Digital Bingo Media on High-Order Thinking Skills and Learning Motivation in Middle School Biology. BIODIK, 10(4), 517–527. https://doi.org/10.22437/biodik.v10i4.35397

Syafitri, A., Simorangkir, M., & Sudrajat, A. (2024). Validity and reliability analysis of HOTS multiple choice questions in a chemistry course at a senior high school. KnE Social Sciences, 9(8), 367–376. https://doi.org/10.18502/kss.v9i8.15568

Usher & Pajares (2009). Sources of self-efficacy in mathematics: A validation study. Contemporary Educational Psychology, 34(1), 89–101. https://www.researchgate.net/publication/223441919_Development_and_testing_of_meteorology_and_air_dispersion_models_for_Mexico_City