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# TEACHERS' ENTHUSIASM AND LEARNERS' ANALYTICAL THINKING ABILITY WITH ATTENTION FOCUS AS MEDIATOR

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**ABSTRACT**

*This study examined the mediating effect of attention focus on the relationship between teachers' enthusiasm and learners' analytical thinking ability among Grade 10 learners in Cluster 2 public secondary schools in Davao City. A non-experimental quantitative design with descriptive-correlational technique was employed, and data were gathered from 279 Grade 10 learners drawn from a population of 920 through simple random sampling with proportional allocation. Adapted and modified survey questionnaires were used to assess the three variables. Findings indicated that teachers' enthusiasm and attention focus were rated moderate, while learners' analytical thinking ability was rated high. Correlational analysis revealed significant positive relationships among teachers' enthusiasm, attention focus, and learners' analytical thinking ability. Mediation analysis confirmed a significant partial mediation, showing that attention focus explained part of the influence of teachers' enthusiasm on learners' analytical thinking ability. The study recommends learner-centered strategies that strengthen teacher enthusiasm, sustain attention, and promote analytical classroom engagement.*

**KEYWORDS**: *Teachers' Enthusiasm, Attention Focus, Analytical Thinking Ability, Mediation Analysis, Grade 10 Learners*

## INTRODUCTION

Analytical thinking ability remains an important concern in many classroom settings because it helps learners evaluate ideas, interpret information, and solve problems with sound reasoning. Despite continued classroom instruction, many learners still experience difficulty in analyzing information, explaining relationships among ideas, and giving logical answers during academic tasks. This problem becomes more visible when learners show passive participation, weak attention, limited reasoning, and low engagement in critical thinking activities. As a result, learners may depend on memorized answers instead of independent thinking. These concerns highlight the need to examine the mediating effect of attention focus on the relationship between teachers' enthusiasm and learners' analytical thinking ability among Grade 10 learners in Cluster 2 public secondary schools in Davao City.

In the United States, poor analytical thinking ability is reflected in learners' difficulty interpreting information and applying reasoning in academic tasks. PISA 2022 reported that many 15-year-old learners still struggled to interpret mathematical situations without direct guidance, suggesting dependence on basic recall rather than judgment and explanation (Organisation for Economic Co-operation and Development, 2023). Reduced teacher motivation and limited meaningful learning opportunities may also weaken attention during tasks that require deeper interpretation (Hoffmann, 2023). When this condition continues, learners may become less prepared to explain evidence and solve complex problems independently. This concern shows that analytical thinking may be affected not only by learner ability but also by classroom conditions that support focus and engagement (Griffin & Travell, 2024).

In South Africa, weak analytical thinking can be seen when learners struggle with tasks that require understanding, interpretation, and application of concepts. TIMSS 2023 results showed that Grade 9 learners obtained low average scores in mathematics and science, reflecting weaknesses in reasoning and analytical processing (Department of Basic Education, 2024). This means that many learners near the Grade 10 level may still have difficulty connecting ideas, explaining relationships, and using evidence to solve problems. School challenges such as limited instructional support and uneven learning conditions may further reduce opportunities to develop deeper thinking skills (Maharaj, 2024). Thus, poor analytical thinking becomes both a learner concern and a school-support concern that affects classroom learning (Botha, 2023).

In China, the concern on analytical thinking appears in the need to strengthen learners' flexible and independent reasoning despite strong performance in structured academic tasks. OECD reports showed that some Chinese

education systems performed above the OECD average in core subjects but only around or below the OECD average in creative thinking (Organisation for Economic Co-operation and Development, 2024). This suggests that learners may succeed in routine tasks but may still need support in evaluating unfamiliar information and forming original explanations. Classroom and teaching conditions may influence how learners sustain attention, participate in reasoning tasks, and move beyond memorized responses (Mo & Morris, 2024). Hence, high academic achievement does not always guarantee strong analytical thinking when learners face complex or unfamiliar tasks (Lu & Ruoxi, 2025).

In the Philippines, limited analytical thinking remains a concern among learners who are expected to evaluate and interpret complex information. Reports on national and local assessments show that many Filipino learners still perform below expected levels in mathematics, reading, and science, while critical thinking gaps continue to appear in school-based contexts. This situation suggests that learners may still struggle to analyze texts, understand problem situations, compare ideas, and form accurate conclusions. Classroom challenges such as reading difficulty, limited engagement, and uneven enrichment activities may further affect higher-order thinking development (Regunda & Patiño, 2025). As a result, learners may become less prepared for tasks that require reasoning, interpretation, and evidence-based explanation (Romero & Galicia, 2025).

In Mindanao, the issue may also be seen in learners' need for stronger reasoning, interpretation, and sustained attention during classroom activities. Public reports on Grade 10 achievement showed that critical thinking still needed improvement compared with other learning competencies. This suggests that many learners may still find it difficult to evaluate complex information, explain the basis of their answers, and defend conclusions clearly. Classroom conditions such as learner attention, teacher engagement, and instructional delivery may influence how learners participate in analytical tasks (Nogadas & Apostol, 2024). Therefore, the concern is important because learners' analytical thinking may depend not only on content knowledge but also on the quality of classroom interaction and teaching support (Annong-Aksan, 2024).

In Cluster 2 public secondary schools in Davao City, Grade 10 learners may experience similar difficulties because they are expected to process more difficult lessons across subject areas. Although school-level statistical data on analytical thinking may not always be publicly available, classroom experiences may show that some learners still struggle to evaluate ideas, interpret complex information, and explain their answers logically. Weak attention during discussion, dependence on teacher prompts, and limited engagement in critical thinking tasks may further affect their analytical thinking ability. If these concerns continue, learners may become less ready for the academic demands of senior high school. This situation creates the need to examine attention focus, teachers' enthusiasm, and analytical thinking ability in the local setting.

A key methodological gap is the limited use of quantitative mediation analysis to explain how classroom-related factors influence the analytical thinking ability of Grade 10 learners. Previous discussions often examined teacher enthusiasm, learner engagement, and thinking skills separately, but they have not fully tested how these variables work together in one mediation model. Specifically, there remains a need to determine whether attention focus serves as the mechanism that explains the relationship between teachers' enthusiasm and learners' analytical thinking ability. The empirical gap is evident because limited local research has directly examined the mediating role of attention focus in this relationship. These gaps justify the conduct of the present study in Cluster 2 public secondary schools in Davao City.

This study is grounded in Self-Determination Theory, Flow Theory, and Cognitive Load Theory. Self-Determination Theory explains that learners become more motivated when their needs for autonomy, competence, and relatedness are supported, which connects to teachers' enthusiasm as a source of encouragement and classroom support (Kaplan et al., 2025). Flow Theory explains that learners experience deeper concentration when tasks are meaningful, clear, and matched to their abilities, which supports the role of attention focus as a mediator (Rosas et al., 2023). Cognitive Load Theory explains that learners perform better when instruction directs mental effort toward important information, which connects to analytical thinking ability as a cognitive outcome (Rohde et al., 2023). Together, these theories explain why enthusiastic teaching may strengthen learner focus and why attention focus may help translate classroom enthusiasm into analytical thinking ability.

The primary objective of this study was to evaluate the mediating effect of attention focus on the relationship between teachers' enthusiasm and learners' analytical thinking ability among Grade 10 learners in Cluster 2 public secondary schools in Davao City. Therefore, the study sought to explore the levels of teachers' enthusiasm, learners' analytical thinking ability, and attention focus; the significant relationship among teachers' enthusiasm, attention focus, and

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learners' analytical thinking ability; and the mediating effect of attention focus. The following hypotheses were tested at 0.05 level of significance:

H01:There is no significant relationship among teachers' enthusiasm, learners' analytical thinking ability, and attention focus in Cluster 2 public secondary schools in Davao City.

H02: Attention focus does not significantly mediate, in partial or full, the relationship between teachers' enthusiasm and learners' analytical thinking ability in Cluster 2 public secondary schools in Davao City.

## METHODOLOGY

The methodology outlined the procedures used to conduct the study, including the research design, respondents, sampling procedure, ethical safeguards, research instrument, data gathering steps, and statistical treatment. The study utilized a non-experimental quantitative approach with descriptive-correlational technique and mediation analysis to determine the levels of teachers' enthusiasm, learners' analytical thinking ability, and attention focus and to examine their associations, including the indirect role of attention focus in the relationship between teachers' enthusiasm and learners' analytical thinking ability. This approach was appropriate because it enabled objective measurement of the variables through structured questionnaires and supported statistical testing of relationships and indirect effects without manipulating the natural classroom setting.

Ethical safeguards were emphasized through adherence to approved research procedures and institutional requirements before data collection. The study established social value by addressing learner attention, higher-order thinking, and classroom instruction in Cluster 2 public secondary schools in Davao City. Since the respondents were Grade 10 learners, proper consent and assent procedures were observed, and participation remained voluntary. Privacy and confidentiality were maintained through respondent coding, restricted access to raw data, secure storage of physical and digital records, and responsible disposal of materials in compliance with the Data Privacy Act of 2012. Transparency was also observed by informing respondents about the purpose of the study, the procedures involved, and the intended academic use of the findings.

A total of 279 Grade 10 learners were selected from a population of 920 through simple random sampling with proportional allocation. The instrument comprised adapted and modified survey questionnaires measuring teachers' enthusiasm, learners' analytical thinking ability, and attention focus, administered using a 5-point Likert scale and supported by acceptable to excellent reliability indices based on Cronbach's alpha. Data were collected through systematic permission processes, orientation of respondents, distribution and retrieval of questionnaires, and proper encoding of responses. The data were analyzed using weighted mean and standard deviation to describe levels, Shapiro-Wilk Test to check normality, Breusch-Pagan Test to examine heteroskedasticity, multicollinearity diagnostics to check predictor stability, Pearson Product-Moment Correlation to determine relationships, and Parametric Simple Mediation Analysis using the Standard Delta Method to verify the significance of the indirect effect.

## RESULTS AND DISCUSSION

This chapter presents the results generated from the data gathered. It is sequenced based on the objectives of the study as presented in the first chapter.

**Teachers' Enthusiasm.** The results showed that teachers' enthusiasm in Cluster 2 public secondary schools in Davao City was moderate overall (M = 3.39), meaning that enthusiastic teaching behaviors were present but not consistently demonstrated at a high level. Among the domains, supportive teacher-learner communication obtained the highest rating (M = 3.41, high), while passion for subject content had the lowest mean (M = 3.36, moderate). This pattern suggests that teachers were more consistent in maintaining warm, respectful, and encouraging classroom relationships than in showing strong excitement and enjoyment toward lesson content. This finding supports the view that enthusiasm becomes visible through active communication, motivating teaching behavior, and supportive learner interaction (Falcón et al., 2023; Alghamdi & Khadawardi, 2024).

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**Table 1. Teachers' Enthusiasm in Cluster 2 Public Secondary Schools in Davao City**

| Indicators | Mean | Descriptive Equivalent |
|---|---|---|
| Classroom Energy | 3.39 | Moderate |
| Encouraging Learning Support | 3.38 | Moderate |
| Passion for Subject Content | 3.36 | Moderate |
| Supportive Teacher-Learner Communication | 3.41 | High |
| ***Overall*** | ***3.39*** | ***Moderate*** |

In specific domains, classroom energy (M = 3.39) and encouraging learning support (M = 3.38) were both moderate, showing that energetic delivery and motivational support were sometimes evident but still needed stronger consistency. The result implies that learners perceived their teachers as generally enthusiastic, but sustained expression of energy, encouragement, and passion across different classroom activities may still be improved. This aligns with evidence that teacher enthusiasm can strengthen learner engagement, although enthusiasm alone may not automatically lead to stronger achievement unless learners become mentally engaged in the task (Marty-Dugas et al., 2024; Zhang & Zhu, 2025).

**Learners' Analytical Thinking Ability.** Learners' analytical thinking ability was high overall (M = 3.44), showing that Grade 10 learners often demonstrated skills in reasoning, evaluating evidence, applying concepts, and solving problems. The strongest area was evidence-based judgment (M = 3.46, high), while the lowest area was strategic problem-solving (M = 3.41, high). These findings suggest that learners were relatively capable of checking evidence and making reasoned judgments, but they still needed more structured support in solving complex problems step by step. This result is consistent with literature emphasizing analytical thinking as a higher-order skill involving reasoning, interpretation, evaluation, and the application of concepts (Hidayat et al., 2024; Liu et al., 2024).

**Table 2. Learners' Analytical Thinking Ability in Cluster 2 Public Secondary Schools in Davao City**

| Indicators | Mean | Descriptive Equivalent |
|---|---|---|
| Strategic Problem-Solving | 3.41 | High |
| Logical Reasoning | 3.44 | High |
| Evidence-Based Judgment | 3.46 | High |
| Application of Concepts | 3.43 | High |
| ***Overall*** | ***3.44*** | ***High*** |

The high ratings across logical reasoning (M = 3.44), application of concepts (M = 3.43), and strategic problem-solving (M = 3.41) indicate that learners generally showed readiness for analytical tasks. However, the lower placement of strategic problem-solving suggests that learners may still need classroom activities that require them to identify problems, compare possible solutions, and explain their answers clearly. Research supports that analytical thinking improves when learners experience reflective, collaborative, and problem-based learning activities that help them examine information and apply learned concepts in meaningful situations (Guo et al., 2024; Wardani et al., 2024).

**Attention Focus**

Attention focus was moderate overall (M = 2.96), indicating that learners sometimes sustained concentration, followed instructions, managed distractions, and remained engaged during classroom tasks. The highest-rated statement was looking at the teacher while lessons are taught (M = 3.10, moderate), while the lowest-rated statement was keeping interest in the topic from start to end (M = 2.87, moderate). This means that learners showed visible signs of attention, but maintaining interest throughout the entire lesson remained a challenge. Attention focus is important because it helps learners process important information, ignore distractions, and complete academic tasks with greater accuracy (Mrazek et al., 2022; Commodari et al., 2025).

The moderate level of attention focus suggests that learners' concentration was not yet stable across classroom situations. Although learners could look at the teacher, listen to explanations, and avoid some distractions, they still needed stronger support to maintain interest and concentration from beginning to end. This result supports the mediating role of attention focus because enthusiastic teaching may first capture learners' attention before it contributes to analytical thinking. Studies on attention and self-regulation indicate that learners perform better when

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they can monitor their focus, regulate mental effort, and remain engaged in cognitively demanding tasks (Tuncel & Ayvaz-Tuncel, 2024; Panadero et al., 2025).

**Table 3. Attention Focus of Learners in Cluster 2 Public Secondary Schools in Davao City**

| Statement | Mean | Descriptive Rating |
|---|---|---|
| 1. Listening carefully to the teacher during lessons. | 2.90 | Moderate |
| 2. Paying attention while the teacher is explaining. | 2.96 | Moderate |
| 3. Avoiding distractions when lessons are going on. | 3.00 | Moderate |
| 4. Staying focused until tasks are completed. | 2.94 | Moderate |
| 5. Following instructions without losing 6. concentration. | 2.92 | Moderate |
| 6. Remembering details shared during the lesson. | 2.93 | Moderate |
| 7. Looking at the teacher while lessons are taught. | 3.10 | Moderate |
| 8. Finishing activities within the given time. | 2.99 | Moderate |
| 9. Ignoring noise while focusing on the lesson. | 2.95 | Moderate |
| 10. Keeping interest in the topic from start to end. | 2.87 | Moderate |
| ***Mean*** | ***2.96*** | ***Moderate*** |

**Relationship Among Variables.** Correlation results showed a significant positive relationship between teachers' enthusiasm and learners' analytical thinking ability ($r = 0.266$, $p < .001$), meaning that higher teacher enthusiasm was associated with stronger analytical thinking ability among learners. This suggests that when teachers show more energy, encouragement, passion, and supportive communication, learners may become more prepared to reason, evaluate information, and apply concepts. A significant positive relationship was also found between teachers' enthusiasm and attention focus ($r = 0.588$, $p < .001$), indicating that enthusiastic teaching was closely linked with learners' capacity to stay attentive during instruction. These findings support the view that classroom enthusiasm can strengthen engagement and attention, which are important conditions for deeper learning (Falcón et al., 2023; Marty-Dugas et al., 2024).

Attention focus and learners' analytical thinking ability also had a significant positive relationship ($r = 0.290$, $p < .001$), suggesting that learners who sustained attention more effectively tended to demonstrate stronger reasoning, judgment, and problem-solving skills. This pattern supports the idea that attention focus helps learners select relevant information, follow reasoning steps, and stay mentally engaged in analytical tasks. Therefore, the correlation results show that the three variables move together in a meaningful direction. Stronger teacher enthusiasm was linked to stronger attention focus, and stronger attention focus was linked to better analytical thinking ability.

**Table 4. Relationship among Teachers' Enthusiasm, Attention Focus, and Learners' Analytical Thinking Ability in Cluster 2 Public Secondary Schools in Davao City**

| Variables | Learners' Analytical Thinking Ability | Attention Focus |
|---|---|---|
| Teachers' Enthusiasm | 0.266**<br><.001<br>Reject H0 | 0.588**<br><.001<br>Reject H0 |
| Attention Focus | 0.290**<br><.001<br>Reject H0 | 1 |

**Mediating Effect of Attention Focus.** Mediation analysis revealed that attention focus significantly and positively mediated the relationship between teachers' enthusiasm and learners' analytical thinking ability. Teachers' enthusiasm significantly predicted attention focus (estimate = 0.773, $p < .001$), and attention focus significantly predicted learners' analytical thinking ability (estimate = 0.148, $p = .004$). Teachers' enthusiasm also had a significant total effect on learners' analytical thinking ability (estimate = 0.253, $p < .001$). This means that enthusiastic teaching was associated with stronger learner focus and better analytical thinking outcomes.

The indirect effect of teachers' enthusiasm on learners' analytical thinking ability through attention focus was significant (estimate = 0.114, $p = .005$). The direct effect remained significant even after attention focus was included

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in the model (estimate = 0.139, p = .038), showing that the mediation was partial. Practically, this suggests that teachers' enthusiasm contributes to learners' analytical thinking ability in two ways: directly, by creating engaging and cognitively stimulating instruction, and indirectly, by strengthening learners' attention focus during lessons. Thus, attention focus explains part of the pathway through which teacher enthusiasm supports learners' analytical thinking ability.

**Table 14. Mediation Analysis on Teachers' Enthusiasm, Attention Focus, and Learners' Analytical Thinking Ability in Cluster 2 Public Secondary Schools in Davao City**

| Path / Effect | Estimate | Std. Error | z-value | p-value |
|---|---|---|---|---|
| (Step 1) TE → LATA | 0.253 | 0.055 | 4.60 | < .001 |
| (Step 2) AF → LATA | 0.148 | 0.051 | 2.90 | .004 |
| (Step 3) TE → AF | 0.773 | 0.064 | 12.15 | < .001 |
| Indirect Effect TE → AF → LATA | 0.114 | 0.041 | 2.82 | .005 |
| Direct Effect TE → LATA | 0.139 | 0.067 | 2.07 | .038 |
| Total Effect TE → LATA | 0.253 | 0.055 | 4.60 | < .001 |
| Ratio Index = 0.4506 | | | | |
| Legend: TE = Teachers' Enthusiasm; AF = Attention Focus; LATA = Learners' Analytical Thinking Ability | | | | |

These findings offered support for Self-Determination Theory, Flow Theory, and Cognitive Load Theory in explaining classroom learning. Self-Determination Theory suggests that enthusiastic teaching can strengthen learners' motivation and willingness to participate, while Flow Theory explains that learners need focused engagement to remain absorbed in learning tasks (Kaplan et al., 2025; Rosas et al., 2023). Cognitive Load Theory further explains that focused attention helps learners manage mental effort and process important information needed for reasoning and analytical thinking (Rohde et al., 2023). Overall, the findings show that teacher enthusiasm becomes more effective when it helps learners sustain attention and engage in deeper cognitive processing.

## CONCLUSIONS

The study concludes that teachers' enthusiasm among Grade 10 learners in Cluster 2 public secondary schools in Davao City was moderate, indicating that enthusiastic teaching behaviors were sometimes observed but were not consistently demonstrated at a high level. Supportive teacher-learner communication was the strongest dimension, while passion for subject content was the weakest. This suggests that teachers were able to maintain warm and respectful relationships with learners, but they still needed to show greater excitement, enjoyment, and interest in presenting lesson content. Strengthening teacher enthusiasm may help create a more engaging learning environment that supports attention and higher-order thinking.

Learners' analytical thinking ability was high, showing that Grade 10 learners demonstrated strong skills in evidence-based judgment, logical reasoning, application of concepts, and strategic problem-solving. However, strategic problem-solving obtained the lowest rating, indicating the need for more challenging and structured activities that require learners to analyze problems, compare solutions, and explain their reasoning. Attention focus was moderate, suggesting that learners showed a fair level of concentration and task engagement during classroom instruction. While learners were able to look at the teacher during lessons, keeping interest in the topic from start to end remained a challenge.

Finally, significant positive relationships were found among teachers' enthusiasm, attention focus, and learners' analytical thinking ability. Attention focus significantly and positively mediated the relationship between teachers' enthusiasm and learners' analytical thinking ability. Since the direct effect remained significant, the mediation was partial, meaning that teachers' enthusiasm influenced learners' analytical thinking both directly and indirectly through attention focus. These findings support Self-Determination Theory, Flow Theory, and Cognitive Load Theory by showing that enthusiastic teaching can strengthen motivation, sustain focus, and direct learners' mental effort toward deeper reasoning and analytical thinking.

## RECOMMENDATIONS

The study recommends that DepEd officials strengthen programs that promote teacher enthusiasm, learner engagement, attention-building techniques, and higher-order thinking skills in secondary schools. School heads should encourage teachers to demonstrate enthusiasm more consistently through energetic lesson delivery, meaningful examples, supportive teacher-learner communication, and encouraging learning support, while also providing mentoring, classroom observation feedback, and Learning Action Cell sessions. Teachers should design varied lessons with clear instructions, engaging questions, real-life examples, and analytical activities that help learners sustain focus and develop strategic problem-solving, logical reasoning, evidence-based judgment, and concept application skills. Learners should actively improve attention focus by listening carefully, avoiding distractions, completing tasks on time, and maintaining interest in classroom lessons. Future researchers may conduct similar studies in other clusters, grade levels, or school divisions and may include other mediating or moderating variables such as learner motivation, self-regulated learning, classroom climate, academic self-efficacy, or instructional strategies.

## REFERENCES

1. *Alghamdi, M. S., & Khadawardi, H. A. (2024). Investigating the impact of teacher enthusiasm on engagement among Saudi first-year EFL students. International Journal of English Language Education, 12(2), 86–96. https://doi.org/10.5296/ijele.v12i2.22241*
2. *Annong-Aksan, J. (2024). Extent of Demonstration Method on Mathematics Teaching Approaches Among Senior High School Students of Mindanao State University-Sulu. Journal of Interdisciplinary Perspectives, 2(6), 206–217. https://shorturl.fm/Hl9l6*
3. *Botha, L. (2023). Understanding the benefits and barriers of school-based mentoring in South Africa. https://shorturl.fm/qIubD*
4. *Commodari, E., La Rosa, V. L., & Foti, F. (2025). Attention skills, learning and academic abilities in children and adolescents with genetic disorders: A systematic review. Frontiers in Psychology, 16, Article 1677418. https://doi.org/10.3389/fpsyg.2025.1677418*
5. *Department of Basic Education. (2024). South African 2023 Trends in International Mathematics and Science Study (TIMSS) highlights report. Department of Basic Education. https://shorturl.fm/KElGS*
6. *Falcón, S., Admiraal, W., & León, J. (2023). Teachers' engaging messages and the relationship with students' performance and teachers' enthusiasm. Learning and Instruction, 86, Article 101750. https://doi.org/10.1016/j.learninstruc.2023.101750*
7. *Griffin, J., & Travell, A. (2024). Exploring teachers' motivations and opportunities in integrating children's literature in English language learning: Insights from the United States and Sweden. https://www.diva-portal.org/smash/record.jsf?pid=diva2:1860057*
8. *Guo, R., Jantharajit, N., & Thongpanit, P. (2024). Enhancing analytical and critical thinking skills through reflective and collaborative learning: A quasi-experimental study. Journal of Education and Educational Development, 11(2), 200–223. https://shorturl.fm/J4Z32*
9. *Hidayat, R., Nugroho, I., Zainuddin, Z., & Ingai, T. A. (2024). A systematic review of analytical thinking skills in STEM education settings. Information and Learning Sciences, 125(7/8), 565–586. https://shorturl.fm/ytK1y*
10. *Hoffmann, J. M. (2023). Understanding the Enrollment Decline in Teacher Preparation Programs Through the Lens of Generation Z High School Students (Doctoral dissertation, Concordia University Wisconsin). https://shorturl.fm/3WB38*
11. *Kaplan, H., Kalfon, A., Asaf, M., & Yitshaki, N. (2025). Motivational processes involved in simulation-based learning in teacher education: The perspective of Self-Determination Theory. European Journal of Teacher Education, 1–20. https://shorturl.fm/nt0SD*
12. *Liu, J., Liu, Z., Wang, C., Xu, Y., Chen, J., & Cheng, Y. (2024). K-12 students' higher-order thinking skills: Conceptualization, components, and evaluation indicators. Thinking Skills and Creativity, 52, Article 101551. https://shorturl.fm/VxQKf*
13. *Lu, C., & Ruoxi, C. (2025). Secondary Education (High School) in China. Education in China and the World, 137. https://shorturl.fm/LpbDF*
14. *Maharaj, N. (2024). Teachers' Challenges in the Rural Schools: A Case of Swayimana Circuit in Pietermaritzburg (Master's thesis, University of South Africa). https://shorturl.fm/FGy7q*
15. *Marty-Dugas, J., Vinney, L. A., Huang, X., Mazumder, M., & Smilek, D. (2024). The effects of instructor enthusiasm on attentional engagement, learning, and memory during online lectures. Frontiers in Education, 9, Article 1339815. https://doi.org/10.3389/feduc.2024.1339815*
16. *Mo, J., & Morris, G. (2024). Investigating the employment motivation, job satisfaction, and dissatisfaction of international high school teachers in China: The impact of the COVID-19 pandemic. Frontiers in Psychology, 15, 1271604. https://shorturl.fm/mfv1f*

17. *Mrazek, A. J., Mrazek, M. D., Brown, C. S., Karimi, S. S., Ji, R. R., Ortega, J. R., Maul, A., Carr, P. C., Delegard, A. M., Kirk, A. C., & Schooler, J. W. (2022). Attention training improves the self-reported focus and emotional regulation of high school students. Technology, Mind, and Behavior. https://doi.org/10.1037/tmb0000092*
18. *Nogadas, E. B., & Apostol, R. L. (2024). The mediating effect of school culture on the relationship between instructional leadership of school heads and teacher engagement of public elementary school teachers. European Journal of Education Studies, 11(5). https://oapub.org/edu/index.php/ejes/article/view/5288*
19. *Organisation for Economic Co-operation and Development. (2023). PISA 2022 results (Volume I and II): Country notes: United States. OECD Publishing. https://shorturl.fm/fk9W1*
20. *Organisation for Economic Co-operation and Development. (2024). PISA 2022 results (Volume III): Creative minds, creative schools. OECD Publishing. https://doi.org/10.1787/765ee8c2-en*
21. *Panadero, E., Fernández-Ortube, A., Zamorano, D., Pinedo, L., Sánchez-Iglesias, I., & Barrenetxea-Mínguez, L. (2025). Tracking self-regulated learning in action: How individual differences shape positive and negative regulation across three types of tasks. Learning and Individual Differences, 124, Article 102808. https://doi.org/10.1016/j.lindif.2025.102808*
22. *Regunda, R. O., & Patiño, E. M. S. (2025). Unveiling pedagogical hurdles: An exploration of teachers' struggles in nurturing reading proficiency among senior high school students of Toledo S. Pantilo Sr. Memorial National High School. https://philpapers.org/rec/REGUPH*
23. *Rohde, N., Flindt, N., Rietz, C., Chang, Y. K., Stracke, E., & Sabaliauskas, S. (2023). Reflection of individual cognitive load theories in digital learning from a pedagogical point of view - An empirical study of the impact of language skills in an e-learning program for migrants and refugees. Статистика, учет и аудит, 91(4), 64–83.*
24. *Romero, R. D., & Galicia, L. S. (2025). Embracing challenges and transforming practices: Understanding the lived experiences of master teachers in English on the implementation of the National Learning Camp (NLC) in the Philippines. https://shorturl.fm/kWMU1*
25. *Rosas, D. A., Padilla-Zea, N., & Burgos, D. (2023). Validated questionnaires in flow theory: A systematic review. Electronics, 12(13), 2769. https://www.mdpi.com/2079-9292/12/13/2769*
26. *Tuncel, İ., & Ayvaz-Tuncel, Z. (2024). The mediating role of attention control dimension of self-regulation in the relationship between academic self-efficacy and academic goal orientation. Journal of Pedagogical Research, 8(4), 281–300. https://doi.org/10.33902/JPR.202430120*
27. *Wardani, A. D. P., Fadly, W., & Zayas, J. D. M. (2024). Improving 8th grade students' contextualized problem-solving and analytical thinking skills through problem-based learning in the digestive system: A study intervention findings in the complex domain. Journal of Science Learning, 7(2), 165–177. https://doi.org/10.17509/jsl.v7i2.64283*
28. *Zhang, C., & Zhu, J. (2025). Teacher enthusiasm and students' reading achievement: Teachers' stimulation of reading engagement and students' reading enjoyment as mediators. Language Teaching Research. Advance online publication. https://shorturl.fm/zj5Zj*