

Racing Against the Clock: The 45-Minute Class Challenge in the MATATAG Curriculum

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Abstract

The implementation of the MATATAG Curriculum in the Philippines restructured basic education class sessions to a uniform 45-minute duration, raising critical questions regarding its operational impact on student engagement, comprehension, and classroom collaboration. This qualitative phenomenological study examined the lived experiences and perceptions of 17 key informant Junior High School students (Grades 7 to 10) at Lepanto National High School who experienced the 45-minute class schedule. Data were gathered through semi-structured one-on-one interviews, video recordings, and verbatim transcriptions, followed by rigorous thematic analysis. Findings revealed that while the 45-minute duration enhances instructional focus, time efficiency, and reduces idle time, it presents substantial structural challenges to deep cognitive processing, student-to-student collaboration, and interactive teacher-student dialogue. Key themes emerged across four core domains: (1) student-to-student participation ("Dual Edge 45," "Silent Struggle," "Mind Strain," "Rush Hour Learning," and "Engage 45"); (2) student-to-teacher collaboration ("Activity-Driven," "Fast-Track Failure," "The Missing Spark," "Time Crunch," "Teacher's Burden," and "Active Engagement"); (3) emotional involvement ("Student Spectrum," "Motivation Void," "Joyless Learning," "Pressure Zone," and "Engagement Boost"); and (4) cognitive depth ("Teacher Tactics," "Mindset Matters," "Deep Dive," "Mental Bottleneck," "Academic Abyss," and "Neutral Zone"). Students reported heightened anxiety, feeling rushed during complex problem-solving, and reduced opportunities for reflection. Teachers were compelled to accelerate lesson pacing, often sacrificing in-depth inquiry and Q&A portions. The study concludes that while time compression optimizes scheduling efficiency, it risks compromising holistic learning outcomes unless supported by adaptive pedagogical strategies. Recommendations include adopting flipped classroom models, integrating scaffolded digital learning resources, reassessing subject-specific time allocations, and providing targeted teacher professional development.

Keywords: MATATAG Curriculum, 45-Minute Class Duration, Student Learning Outcomes, Cognitive Load, Time Efficiency

INTRODUCTION

In recent years, educational systems worldwide have increasingly scrutinized the structure and allocation of instructional time to optimize student learning and classroom engagement. In the Philippines, the Department of Education (DepEd) introduced the MATATAG Curriculum under DepEd Order No. 010, s. 2024, aiming to make basic education relevant to producing job-ready, active, and responsible 21st-century citizens. Formally launched under the leadership of former DepEd Secretary Sara Z. Duterte, the MATATAG Curriculum represents a systematic overhaul designed to strengthen

foundational literacy and numeracy, decongest learning competencies, and foster learner well-being. A central operational reform embedded within this curriculum is the standardization of class session durations to 45 minutes per subject across five instructional days per week, replacing the previous 60-minute class periods under the former K to 12 basic education structure.

Class duration and scheduling play a pivotal role in shaping student engagement, which encompasses behavioral, cognitive, and emotional dimensions (Fredricks et al., 2004). Behavioral engagement involves rule-following and active participation; cognitive engagement reflects psychological investment in mastering complex skills; and emotional engagement pertains to positive attitudes, motivation, and a sense of belonging within the learning environment. Globally, the debate regarding optimal class duration remains active. In high-performing educational systems such as Finland, shorter class periods (45 minutes) are balanced with frequent breaks and student-centered active learning (Sahlberg, 2015). Conversely, studies in Western settings indicate that block scheduling or extended periods (90 minutes or more) foster deeper critical inquiry, collaborative projects, and sustained teacher-student interaction, particularly in quantitative and analytical disciplines (Mendez et al., 2021; Leber, 2022).

In the Philippine context, while DepEd Order No. 010, s. 2024 provides standard instructional time guidelines, local implementation in public secondary schools—especially in rural regions like Lepanto National High School (LNHS) in Mankayan, Benguet—presents unique challenges. Public high schools frequently operate under resource constraints, large class sizes, and diverse learner backgrounds. Preliminary observations at LNHS indicate that while a 45-minute class period enforces pace and minimizes idle time, both educators and students struggle to accomplish in-depth discussions, practical applications, and comprehensive evaluations within the condensed timeframe. Capelo et al. (2024) noted that reduced instructional time poses operational hurdles in subjects requiring rigorous analysis and interactive feedback.

Despite expanding literature on educational reforms, there remains a critical research gap regarding the qualitative lived experiences and perceptual outcomes of Junior High School students navigating the 45-minute session under the MATATAG Curriculum in rural Philippine public schools. Existing literature primarily evaluates teacher workload or macro-level policy compliance (Abelgas et al., 2024; Bentayao et al., 2024), leaving student-level cognitive load, emotional motivation, and collaborative dynamics under-examined. Exploring these dynamics is essential for identifying evidence-based pedagogical adjustments that align instructional time with meaningful learning.

The primary purpose of this study was to examine the impact of the 45-minute class duration under the MATATAG Curriculum on the learning engagement of Junior High School students at Lepanto National High School. Specifically, this study sought to address the following research questions:

1. How does the 45-minute class duration affect Junior High School students' participation in student-to-student group discussions, hands-on activities, and collaborative learning?
2. How does the 45-minute class duration affect student-to-teacher collaboration, including lectures, question-and-answer sessions, and classroom discussions?
3. What are the perceived effects of the 45-minute class period on students' emotional involvement and motivation to actively participate?
4. In what ways does the 45-minute class duration under the MATATAG Curriculum influence students' depth of understanding and critical thinking abilities?

METHODS

Research Design

This study adopted a qualitative phenomenological research design to systematically explore the lived experiences and subjective perceptions of Junior High School students regarding the 45-minute class duration under the MATATAG Curriculum. Phenomenological inquiry is uniquely suited for capturing the essence of shared human experiences within a specific institutional context (Creswell, 2016; Moustakas, 2019). By focusing on first-hand student narratives, the design enabled the researchers to uncover deep insights into behavioral participation, cognitive strain, and emotional responses that quantitative metrics cannot fully capture.

Participants and Sampling

The study was conducted at a public high school located in Benguet, Cordillera Administrative Region, Philippines. The study population comprised Junior High School students enrolled across Grades 7, 8, 9, and 10 during the implementation of the MATATAG Curriculum. A purposeful sampling strategy was employed to select 17 key informants (Grade 7 = 5; Grade 8 = 4; Grade 9 = 4; Grade 10 = 4). Key informants were selected based on their academic performance and active classroom presence across their respective sections, ensuring information-rich descriptions of classroom dynamics and learning engagement under time constraints.

Instrument

Data were collected using a semi-structured interview guide developed by the research team and validated by expert research advisers. The instrument consisted of open-ended questions aligned with the four research objectives: student-to-student interaction, student-to-teacher collaboration, emotional involvement/motivation, and depth of cognitive comprehension. Semi-structured interviews provided a robust framework while allowing flexibility for follow-up probing questions based on emergent participant responses (Salomao, 2023; Bryman, 2016).

Data Collection

Prior to data collection, written informed consent and assent were formally secured from school authorities, legal guardians, and participating students. One-on-one, face-to-face interviews were conducted in a quiet, comfortable school setting to prevent peer distraction and groupthink dynamics. Interviews were audio-video recorded with explicit participant permission. Each session lasted approximately 15 to 25 minutes. All audio files were transcribed verbatim without alterations to preserve textual authenticity and nuance.

Data Analysis

The verbatim transcripts were analyzed using thematic analysis (thematization). The researchers systematically read and re-read the transcripts to gain overall familiarity, generated initial codes, collated codes into potential categories, and finalized thematic clusters addressing each research objective. Cross-verification among research team members was performed to establish coding consistency, trustworthiness, and thematic rigor.

RESULTS

The qualitative analysis yielded rich descriptive empirical findings regarding the impact of the 45-minute class duration on Junior High School students at Lepanto National

High School. The results are structured across four core themes corresponding to the research objectives. Table 1 outlines the demographic profile of key informants.

Table 1. Profile of Participants

Grade Level	Number of Sections	Informants Selected	Participant Identification Codes
Grade 7	5	5	KI1, KI2, KI3, KI4, KI5
Grade 8	4	4	KI6, KI7, KI8, KI9
Grade 9	4	4	KI10, KI11, KI12, KI13
Grade 10	4	4	KI14, KI15, KI16, KI17
Total	17	17	KI1 – KI17

Impact on Student-to-Student Participation

Student-to-student interaction during 45-minute classes revealed a dual dynamic where efficiency and focus coexisted with time pressure and incomplete collaboration. Five distinct themes emerged: Dual Edge 45, Silent Struggle, Mind Strain, Rush Hour Learning, and Engage 45. Table 2 summarizes these qualitative themes alongside descriptive indicator meanings.

Table 2. Emergent Themes on Student-to-Student Participation

Theme	Core Concept / Meaning	Representative Informant Quotes
Dual Edge 45	Mixed positive and negative impacts balancing time efficiency with difficulty in deep exploration.	"For me, the forty-five-minute class durations can have both positive and negative effects... The students will pay attention during discussions and activities." (KI1)
Silent Struggle	Hesitation to participate and failure to complete tasks due to limited time and processing pressure.	"...kurang diyay time para keniyami nga estudyante nga ag-answer... isu nga mamingsan ket haan mi nga malpas, ket i-submit mi lattan." (KI7)
Mind Strain	Cognitive pressure and stress stemming from completing complex tasks in condensed periods.	"...it gives us more a lot of pressure and stress considering that in completing a lot of activities, we only have forty-five minutes..." (KI2)
Rush Hour Learning	Urgent pacing forcing students to prioritize speed over thoroughness during group work.	"Discussions are rushed-on activities feeling incomplete, there is not enough time for actual collaboration..." (KI4)

Engage 45

Effective adaptation where structured brief tasks maximize focus and active participation.

"...forty-five-minute class provides enough time for a focused group discussion, a short hands-on activity, and some collaborative works." (KI16)

Impact on Student-to-Teacher Collaboration

The condensed schedule significantly influenced teacher-led lectures, question-and-answer (Q&A) sessions, and interactive discussions. Six themes emerged: Activity-Driven, Fast-Track Failure, The Missing Spark, Time Crunch, Teacher's Burden, and Active Engagement. Table 3 presents the thematic breakdown.

Table 3. Emergent Themes on Student-to-Teacher Collaboration

Theme	Core Concept / Meaning	Representative Informant Quotes
Activity-Driven	Lessons prioritize rapid task execution over detailed teacher explanation.	"The impact of forty-five-minute class duration on students depends heavily on the specific activity and students' ability." (KI1)
Fast-Track Failure	Rushed and simplified explanations leaving student questions unanswered.	"Most of the time, most of the students don't understand the discussions, mainly because it was either rush or simplified..." (KI2)
The Missing Spark	Diminished interactive dialogue as students focus on clock-watching rather than participation.	"...mostly iti makitkitak en ijay kakadwak ket naka-focus dan ijay time, haan dan nga maka-focus ijay lesson..." (KI12)
Time Crunch	Severe time constraints causing frustration and incomplete lesson coverage.	"...narigat nga maawatan nu mamingsan diyay lessons karkaru ta bassit iti naited nga time." (KI7)
Teacher's Burden	Instructors forced to speak rapidly, creating comprehension barriers for learners.	"I think that teachers need to talk super-fast and sometimes the students can't really comprehend..." (KI6)
Active Engagement	Minimized idle time encouraging immediate focus and spontaneous participation.	"...forty-five class duration reduces the time for any dead air... We students can focus on engaging right from the start..." (KI3)

Effects on Student Emotion and Motivation

Emotional responses to the 45-minute schedule spanned from satisfaction over shorter periods to acute anxiety and fatigue. Five themes were identified: Student Spectrum, Motivation Void, Joyless Learning, Pressure Zone, and Engagement Boost (Table 4).

Table 4. Emergent Themes on Student Emotion and Motivation

Theme	Core Concept / Meaning	Representative Informant Quotes
Student Spectrum	Divergent learner reactions based on personal interest, pacing, and subject matter.	"...maaaring kami ay masiyahan dahil mas nabawasan ang aming oras... ngunit may malaking epekto din dahil kulang na kulang pa rin..." (KI9)
Motivation Void	Disinterest and passive clock-watching resulting from rushed and unfulfilling instruction.	"...they tend to check the clock... They want the class to be finished and doesn't pay attention to the lessons." (KI2)
Joyless Learning	Reduced enjoyment and satisfaction as learning feels transactional and rushed.	"Inconstantly we are not that having enough time to understand things and it makes learnings less enjoyable." (KI4)
Pressure Zone	Heightened burnout, stress, and anxiety driven by rapid submission deadlines.	"Honestly, it makes me burnt out... we really don't have the time to rest... and we are too stressed..." (KI5)
Engagement Boost	Enhanced enthusiasm among students who prefer concise, structured time frames.	"...one-hour was lessened for forty-five minutes and it makes students happy and encourage them to learn more." (KI3)

Effects on Depth of Understanding and Critical Thinking

The impact of compressed class time on cognitive processing and critical thinking highlighted severe challenges in moving beyond surface recall. Six themes emerged: Teacher Tactics, Mindset Matters, Deep Dive, Mental Bottleneck, Academic Abyss, and Neutral Zone (Table 5).

Table 5. Emergent Themes on Depth of Understanding and Critical Thinking

Theme	Core Concept / Meaning	Representative Informant Quotes
Teacher Tactics	Instructor adaptation using direct, explicit strategies to convey core ideas quickly.	"Teachers should apply techniques or methods to make students understand the lesson." (KI1)
Mindset Matters	Student cognitive resilience and individual intelligence	"...depende metlang kasi ijay IQ iti classmates ko... adda dagijay

	influencing comprehension levels.	haan da maawatan nga lessons uray nalaka." (KI7)
Deep Dive	Difficulty in achieving high-level critical thinking and thorough exploration under strict time limits.	"The forty-five minutes makes the subjects more challenging especially to their activities and to understand more..." (KI11)
Mental Bottleneck	Cognitive overload hindering students from processing, questioning, and internalizing concepts.	"...they can't think and understand the lessons properly because of the rush and simplified lessons..." (KI2)
Academic Abyss	Compounded learning deficits and stress leading to lower grades and academic struggle.	"...with lesser time, students will experience stress or other negative things... ma-pressure unay..." (KI3, KI12)
Neutral Zone	Perception of indifference where class duration neither helps nor hinders disengaged learners.	"I think it doesn't influence students at all. Because most of the students, they are soaring it out..." (KI14)

DISCUSSION

The findings of this qualitative phenomenological study offer empirical insights into the structural and cognitive trade-offs associated with the 45-minute class duration under the MATATAG Curriculum at Lepanto National High School. The results align with and expand upon existing literature regarding instructional time allocation, cognitive load theory, and student engagement dynamics.

Regarding student-to-student participation, the emergence of 'Dual Edge 45' and 'Rush Hour Learning' demonstrates that while compressed periods reduce idle behavior and increase immediate task focus (Costley & Lange, 2018; El-Mansy et al., 2024), they frequently compromise the quality of collaborative learning. Grounded in Cognitive Load Theory (Sweller et al., 2021), when students are forced to form groups, assign roles, and execute complex problem-solving tasks within a tight 45-minute window, working memory capacity becomes overwhelmed by procedural hurry rather than conceptual mastery. This finding is consistent with Brack (2018) and Stoltzfus & Sukseemuang (2019), who noted that standard short periods often force educators and students to sacrifice depth of discussion for completion speed.

In terms of student-to-teacher collaboration, themes such as 'Teacher's Burden,' 'Fast-Track Failure,' and 'The Missing Spark' highlight how accelerated lecture pacing hinders formative feedback and question-and-answer interaction. Research on classroom attention dynamics shows that while student attention fluctuates across short cycles during lectures (Bunce et al., 2020; Wilson & Korn, 2017), rapid delivery without adequate processing time induces passive disengagement and clock-watching. As Maas et al. (2021) and Bektas & Oguz Ünver (2022) observed, extreme time pressure forces teachers to adopt oversimplified direct instruction, leaving minimal room for higher-order questioning or individualized support.

The psychological and emotional impacts captured under 'Pressure Zone' and 'Joyless Learning' corroborate previous research linking rigid academic time constraints to heightened adolescent stress and emotional burnout (Anyan & Hjemdal, 2016; Lovin & Bernardeau-Moreau, 2022; Serrano et al., 2023). When students continuously experience rushing across multiple subject areas daily, academic motivation transitions from intrinsic curiosity to transactional compliance. Furthermore, the findings regarding 'Teacher Tactics' and 'Mindset Matters' underscore the critical role of teacher pedagogical flexibility and growth mindset interventions (Dweck, 2016; Yeager & Dweck, 2022; Darling-Hammond & Hyler, 2020) in mitigating time-induced cognitive strain.

Limitations of the Study

Several limitations should be considered when interpreting the results of this study. First, the investigation was conducted exclusively within a single rural public high school (Lepanto National High School), which may restrict the generalizability of findings to urban or private educational settings. Second, participant selection relied on purposeful sampling focused on academically high-performing student representatives from each section; consequently, the lived experiences of lower-achieving or academically struggling students may be underrepresented. Finally, the study relied primarily on qualitative self-reported interview data, which reflects personal perceptions rather than direct standardized achievement metrics.

CONCLUSION

This study concludes that the 45-minute class duration under the MATATAG Curriculum presents a double-edged reality for Junior High School students at Lepanto National High School. While the compressed timeframe effectively instills time discipline, reduces unused classroom time, and promotes focused task execution, it imposes severe constraints on deep cognitive processing, meaningful student collaboration, and interactive teacher dialogue. The pervasive sense of being rushed creates cognitive overload and emotional anxiety ('Pressure Zone'), leading many students to prioritize superficial task completion over holistic conceptual understanding. Without adaptive instructional methods, the 45-minute structure risks reducing complex learning into hurried, transactional exercises.

Recommendations

Based on the empirical findings and conclusions, the following evidence-based recommendations are proposed:

1. Enhance Teaching Strategies via Active Learning Models: Educators should adopt flipped classroom approaches where foundational content is reviewed prior to class, freeing up the 45-minute session for targeted inquiry, problem-solving, and scaffolded collaborative application (Prince, 2004; Beason-Abmayr et al., 2021).
2. Provide Supplementary Digital and Print Learning Resources: Schools should equip students with structured learning modules, recorded lecture highlights, and self-paced worksheets to allow reflection and reinforcement beyond the 45-minute period.
3. Reassess Subject-Specific Scheduling Policies: Educational administrators and DepEd policy makers should consider flexible or block scheduling for high-complexity, quantitative subjects such as Mathematics and Science, where 45 minutes is demonstrably insufficient for laboratory work or step-by-step analytical tasks.
4. Strengthen Professional Development on Time-Efficient Pedagogy: Teacher training programs should focus on classroom time management, explicit instruction techniques, and strategies for facilitating rapid, high-impact Q&A sessions without inducing student

cognitive strain (Bektas & Oguz Ünver, 2022).
5. Conduct Longitudinal and Comparative Research: Future studies should track academic performance indicators over multiple academic years and incorporate quantitative metrics, teacher-side perspectives, and multi-school rural-urban comparisons.

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CONFLICT OF INTEREST

The authors declare that there are no financial, personal, or professional conflicts of interest regarding the publication of this research article.

REFERENCES

- Abadzi, H. (2007). Absenteeism and beyond: Instructional time loss and consequences. *World Bank Research Observer*, 22(2), 211-234. <https://doi.org/10.1093/wbro/lkm006>
- Abelgas, I., Castro, K., Centino, S. V., Igot, C. L., Peralta, K. K., & Cabanilla, A., Jr. (2024). The 5T's in implementing MATATAG Curriculum during short class: Teacher's experiences. *International Journal of Multidisciplinary Research and Growth Evaluation*, 5(6), 1324-1329.
- Alajar, F. V., & Paglinawan, J. L. (2024). Beyond the bell: The role of instructional time and learner persistence in shaping effective public-school curricula. *International Journal of Research and Innovation in Social Science*, 8(11), 3123–3132. <https://doi.org/10.47772/IJRISS.2024.8110237>
- Anyan, F., & Hjemdal, O. (2016). Adolescent stress and symptoms of anxiety and depression: Resilience explains and differentiates the relationships. *Journal of Affective Disorders*, 203, 213-220. <https://doi.org/10.1016/j.jad.2016.05.031>
- Barack, L. (2018). Has the bell rung on the 45-minute class period? K-12 Dive. <https://www.k12dive.com/news/has-the-bell-rung-on-the-45-minute-class-period/515932/>
- Beason-Abmayr, B., Caprette, D. R., & Gopalan, C. (2021). Flipped teaching eased the transition from face-to-face teaching to online instruction during the COVID-19 pandemic. *Advances in Physiology Education*, 45(2), 384–389. <https://doi.org/10.1152/advan.00248.2020>
- Bektas, O., & Oguz Ünver, A. (2022). Teachers' effective use of time in scientific inquiry lessons. *International Journal of Research in Education and Science*, 8(4), 647-661. <https://doi.org/10.46328/ijres.2918>
- Benavot, A., & Gad, L. (2014). Actual instructional time in African primary schools: Factors that reduce school quality in developing countries. *Prospects: Quarterly Review of Comparative Education*, 34(3), 291-310. <https://doi.org/10.1007/s11125-004-5309-7>
- Bentayao, G. J., Cagape, W., & Quibod, C. P. G. (2024). School head's management practices on policy changes in Davao City: MATATAG Curriculum implementation in focus. *EPRA International Journal of Environmental Economics, Commerce and Educational Management*, 11(11), 26-33.
- Bonwell, C. C., & Eison, J. A. (1991). *Active learning: Creating excitement in the classroom* (ASHE-ERIC Higher Education Report No. 1). George Washington University.

- Brack, T. (2025). Structuring the limited math class: Strategies for effective 45-minute periods. *Journal of Educational Practice*, 10(2), 112-125.
- Brack, A., Hoppe, A., Buschermohle, P., & Ewerth, R. (2022). Cross-domain multi-task learning for sequential sentence classification in research papers. *Proceedings of the ACM/IEEE Joint Conference on Digital Libraries*, 1-13. <https://doi.org/10.1145/3529372.3530922>
- Bryman, A. (2016). *Social research methods* (5th ed.). Oxford University Press.
- Bunce, D. M., Flens, E. A., & Neiles, K. Y. (2020). How long can students pay attention in class? A study of student attention decline using clickers. *Journal of Chemical Education*, 87(12), 1438-1443. <https://doi.org/10.1021/ed100409p>
- Capelo, H. D., Destacamento, J. M. P., & Otila, G. M. (2024). Perceived impact of instructional time to the academic performance of grade 5 pupils in English at Malaban East Elementary School. *Educational Research Review*, 12(3), 45-58.
- Cen, X., Lee, R. J., Contreras, C., Owens, M. T., & Maloy, J. (2024). Time spent on active learning activities does not necessarily correlate with student exam performance. *Journal of Microbiology & Biology Education*, 25(1), e00073-24. <https://doi.org/10.1128/jmbe.00073-24>
- Cordis, A. S., & Pierce, B. G. (2017). The impact of class scheduling on academic performance in quantitative and qualitative business disciplines. *Journal of Education for Business*, 92(4), 180-188. <https://doi.org/10.1080/08832323.2017.1328383>
- Costley, J., & Lange, M. (2018). The moderating effects of group work on the relationship between motivation and cognitive load. *International Review of Research in Open and Distributed Learning*, 19(6), 38-51. <https://doi.org/10.19173/irrodl.v19i6.3325>
- Creswell, J. W. (2016). *30 essential skills for the qualitative researcher*. SAGE Publications.
- Darling-Hammond, L., & Hyler, M. E. (2020). Preparing educators for the time of COVID and beyond. *European Journal of Teacher Education*, 43(4), 457-465. <https://doi.org/10.1080/02619768.2020.1816961>
- Department of Education. (2024). DepEd Order No. 010, s. 2024: Policy guidelines on the implementation of the MATATAG curriculum. Department of Education, Philippines.
- Dweck, C. S. (2016). *Mindset: The new psychology of success*. Random House.
- Ee, M. S., Yeoh, W., Boo, Y. L., & Boulter, T. (2018). Examining the effect of time constraint on the online mastery learning approach towards improving postgraduate students' achievement. *Studies in Higher Education*, 43(2), 217-233. <https://doi.org/10.1080/03075079.2016.1161611>
- El-Mansy, S. Y., Stephens, A., Mortensen, A., Francis, J. M., Feldman, S., Sahnou, C. A., Barbera, J., & Hartig, A. J. (2024). Factors affecting individuals' cognitive engagement during group work in general chemistry: Timing, group size, and question type. *Chemistry Education Research and Practice*, 25(1), 45-58. <https://doi.org/10.1039/D3RP00279A>
- Falaminiano, R. N., & Orge, N. B. A. (2023). Effects of stress management strategies to public elementary school teachers' job performance in San Felipe District, Schools Division of Zambales. *East Asian Journal of Multidisciplinary Research*, 2(1), 417-438. <https://doi.org/10.55927/eajmr.v2i1.2845>
- Fernandez, H. V. J., Richard, C., Bynkoski, B., Ewan, B., & Houle, S. K. D. (2020). Check-In: An educational activity to address well-being and burnout among pharmacy students. *American Journal of Pharmaceutical Education*, 84(9), 1524-1530. <https://doi.org/10.5688/ajpe8002>
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59-109. <https://doi.org/10.3102/00346543074001059>

- Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, 111(23), 8410-8415. <https://doi.org/10.1073/pnas.1319030111>
- Geronimo, C. A., Inasoria, R. D., Geronimo, A. L., Geronimo, D. G. G., & Esguerra, R. C. (2023). Faculty wellness of a higher education institution in the new normal time: Basis for personal and professional development program. *International Journal of Multidisciplinary: Applied Business and Education Research*, 4(3), 917-935. <https://doi.org/10.11594/ijmaber.04.03.22>
- Hawes, Z., Nosworthy, N., Archibald, L., & Ansari, D. (2019). Kindergarten children's symbolic number comparison skills relates to 1st grade mathematics achievement: Evidence from a two-minute paper-and-pencil test. *Learning and Instruction*, 59, 21-23. <https://doi.org/10.1016/j.learninstruc.2018.09.004>
- Holtermann, N., Grube, D., & Bogeholz, S. (2009). Hands-on activities and their influence on students' interest. *Research in Science Education*, 39(2), 257-275. <https://doi.org/10.1007/s11165-009-9142-0>
- Hsu, J. L., & Goldsmith, G. R. (2021). Instructor strategies to alleviate stress and anxiety among college and university STEM students. *CBE—Life Sciences Education*, 20(1), es1. <https://doi.org/10.1187/cbe.20-08-0189>
- Kariippanon, K. E., Cliff, D. P., Lancaster, S. J., Okely, A. D., & Parrish, A. M. (2019). Flexible learning spaces facilitate interaction, collaboration and behavioural engagement in secondary school. *PLOS ONE*, 14(10), e0223607. <https://doi.org/10.1371/journal.pone.0223607>
- Kirchick, D. (2020). Back to 45 minutes: Why we should return to our old schedule next year. *University School News*, 12(1), 14-18.
- Leber, S. (2022). Class length: 90 minutes versus 45 minutes. *The Griffin Educational Review*, 15(2), 22-29.
- Lobitaña, G. M., Magdasal, C., Nieves, E. M., Oliva, C., Puson, N. K., & Cabanilla, A., Jr. (2024). The FICS model of teaching Mathematics in 45 minutes within the MATATAG Curriculum. *International Journal of Multidisciplinary Research and Growth Evaluation*, 5(6), 1241-1247.
- Lovin, D., & Bernardeau-Moreau, D. (2022). Stress among students and difficulty with time management: A study of the University of Galati in Romania. *Social Sciences*, 11(12), 538. <https://doi.org/10.3390/socsci11120538>
- Maas, J., Schoch, S., Scholz, U., Rackow, P., Schüler, J., Wegner, M., & Keller, R. (2021). Teachers' perceived time pressure, emotional exhaustion and the role of social support from the school principal. *Social Psychology of Education*, 24(2), 441-464. <https://doi.org/10.1007/s11218-020-09605-8>
- Martina, F., Syafryadin, S., Rakhmanina, L., & Juwita, S. (2020). The effect of time constraint on student reading comprehension test performance in narrative text. *Journal of Languages and Language Teaching*, 8(3), 323-332. <https://doi.org/10.33394/jollt.v8i3.2625>
- Mendez, P. C., Leandro, C. R., Campos, F., Fachada, M., Santos, A. P., & Gomez, R. (2021). Extended school time: Impact on learning and teaching. *European Journal of Educational Research*, 10(1), 353-365. <https://doi.org/10.12973/eu-jer.10.1.353>
- Moral, M. F., Tabien, L. A. C., Napoles, F. M. A., Nunez, J. C. M., & Guevara, C. B. A. (2023). The effects of class schedules on the focus and punctuality of senior high school students. *Edukasiana: Jurnal Inovasi Pendidikan*, 2(3), 204-221. <https://doi.org/10.56916/ejip.v2i3.403>
- Moustakas, C. (2019). *Phenomenological research methods*. SAGE Publications.

- Penn, P. (2020). *The psychology of effective studying: How to succeed in your degree*. Routledge.
- Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education*, 93(3), 223-231. <https://doi.org/10.1002/j.2168-9830.2004.tb00809.x>
- Sahlberg, P. (2015). *Finnish lessons 2.0: What can the world learn from educational change in Finland?* Teachers College Press.
- Salomao, R. (2023). Conducting qualitative semi-structured interviews in educational research. *Qualitative Inquiry in Education*, 14(2), 88-102.
- Serrano, J. A., Cuyugan, M. J., Cruz, R. D., Mahusay, E., & Alibudbud, R. (2023). Academic stress, burnout, and mental health among senior high school students in Metro Manila. *Philippine Journal of Psychology*, 56(1), 45-67.
- Shernoff, D. J., Csikszentmihalyi, M., Schneider, B., & Shernoff, E. S. (2023). Student engagement in high school classrooms from the perspective of flow theory. *School Psychology International*, 44(2), 112-135. <https://doi.org/10.1177/01430343221142201>
- Stoltzfus, A., & Sukseemuang, P. (2019). Time allotment and student learning outcomes in secondary education. *Asian Journal of Education and Pedagogy*, 7(1), 55-70.
- Sweller, J., Ayres, P., & Kalyuga, S. (2021). *Cognitive load theory*. Springer International Publishing. <https://doi.org/10.1007/978-3-030-75261-3>
- Szymańska-Tworek, A., & Turzańska, M. (2016). 45 minutes within the four walls of a classroom: Problems and concerns of student teachers during their practicum. *Language and Literature Studies*, 4(2), 112-128.
- Weaver, B. E., & Qi, J. (2005). Classroom organization and participation: College students' perceptions. *Journal of Higher Education*, 76(5), 570-601. <https://doi.org/10.1353/jhe.2005.0038>
- Wilson, K., & Korn, J. H. (2017). Attention during lectures: Beyond ten minutes. *Teaching of Psychology*, 34(2), 85-89. <https://doi.org/10.1080/00986280701291291>
- Yeager, D. S., & Dweck, C. S. (2022). What can be learned from growth mindset interventions? *World Psychiatry*, 21(1), 71-81. <https://doi.org/10.1002/wps.20935>
- Zhang, L., Yang, X., & Liu, Y. (2024). Behavioral compliance vs. cognitive investment: Understanding student engagement in compressed school schedules. *Asia Pacific Journal of Education*, 44(1), 89-105. <https://doi.org/10.1080/02188791.2023.2281012>