© IJARW | ISSN (O) - 2582-1008
August 2026 | Vol. 8 Issue. 2
www.ijarw.com

TIME MANAGEMENT SKILLS AND LEARNING ENGAGEMENT ON ACADEMIC PERFORMANCE OF STUDENTS IN MATHEMATICS

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ABSTRACT

This study examined the relationship between time management skills and learning engagement on the academic performance of students in Mathematics at Don Carlos Polytechnic College during the School Year 2025–2026. Specifically, it determined the level of time management skills in terms of time blocking, time tracking, and to-do list; the level of learning engagement in terms of behavioral, emotional, and cognitive engagement; the level of academic performance in Mathematics; and the significant relationships among the variables.

The study employed a descriptive-correlational research design involving one hundred second-year Bachelor of Elementary Education students selected through stratified random sampling. Data were gathered using an adapted survey questionnaire, while students' Mathematics grades were used to measure academic performance. Mean, standard deviation, frequency count, percentage, and Pearson Product-Moment Correlation Coefficient were utilized as statistical tools. The findings revealed that students demonstrated a high level of time management skills and learning engagement.

The academic performance of the students in Mathematics was generally satisfactory. Furthermore, the results showed a significant positive relationship between time management skills and academic performance in Mathematics. However, learning engagement did not show a significant relationship with academic performance. The study concluded that effective time management skills contribute positively to students' academic performance in Mathematics. Although students demonstrated active engagement in learning activities, learning engagement alone did not significantly influence academic achievement.

The findings further suggest that other factors may also affect students' Mathematics performance. It is recommended that teachers and school administrators provide academic support programs and interventions that strengthen students' time management practices and improve learning experiences in Mathematics.

Keyword: time management skills, learning engagement, academic performance, Mathematics

1. INTRODUCTION

Academic performance in mathematics is an important indicator of students' academic achievement because it reflects their ability to understand concepts, apply problem-solving strategies, and develop logical and analytical thinking skills. Mathematics plays a significant role in academic and professional success, especially in STEM-related disciplines, where students are expected to demonstrate higher-order thinking, self-regulation, and independent learning abilities (Wang & Degol, 2020). However, despite its importance, many students continue to experience difficulties in Mathematics, as shown by low proficiency levels in both international and local educational contexts. In the Philippines, challenges such as poor study habits, ineffective time management, lack of focus, and limited learning engagement contribute to students' low academic performance in Mathematics (Santos et al., 2022). These difficulties become more evident

in tertiary education, where students are required to manage heavier academic responsibilities and greater independence in learning.

One of the major factors influencing academic performance in Mathematics is time management skills, which involve students' ability to plan, organize, prioritize, and regulate their time effectively (Aeon & Aguinis, 2017). In mathematics learning, effective time management enables students to allocate sufficient time for studying lessons, solving problems, completing assignments, and preparing for examinations. Strategies such as time blocking, time tracking, and the use of to-do lists help students maintain consistent study routines and reduce procrastination (Wolters & Brady, 2021). Students with strong time management skills are more likely to accomplish academic tasks efficiently and achieve better academic outcomes, while poor time management often results in academic stress, incomplete requirements, and lower performance (Nasrullah & Khan, 2019).

Another important factor affecting academic performance is learning engagement, which refers to students' active participation and psychological involvement in the learning process (Fredricks et al., 2016). Learning engagement includes behavioral, emotional, and cognitive dimensions that influence how students interact with academic tasks and classroom activities (Wang & Eccles, 2016). In Mathematics education, engaged students tend to participate actively in discussions, demonstrate interest and motivation, and persist in solving challenging problems (Yang et al., 2021). This active involvement helps students develop deeper conceptual understanding and improve academic achievement (Maamin et al., 2022). In contrast, students with low engagement are more likely to exhibit passive learning behaviors, reduced motivation, and weaker academic performance (Bae & DeBusk-Lane, 2019).

The relationship between time management skills and learning engagement is also essential because these variables are interconnected in shaping students' academic behavior and learning outcomes. Effective time management allows students to become more prepared, organized, and less overwhelmed by academic demands, which may increase their participation and engagement in learning activities (Sanchez-Gomez et al., 2020). However, previous studies present varying findings regarding the extent to which these factors directly influence academic performance, suggesting that other variables such as motivation, instructional quality, cognitive ability, and learning environment may also contribute to students' success in Mathematics (Mega et al., 2022). In tertiary education, where students are expected to regulate their own learning, the development of effective time management and learning engagement becomes even more critical in helping students cope with academic demands and improve performance (Chen et al., 2025).

Therefore, this study sought to examine the influence of time management skills and learning engagement on the academic performance of tertiary students in Mathematics. Specifically, it aimed to assess students' level of time management skills, determine their level of learning engagement, evaluate their academic performance in Mathematics, and identify the significant relationships among these variables. The findings of the study are expected to provide valuable insights for students, teachers, school administrators, and future researchers by contributing context-specific knowledge that may help improve Mathematics learning and academic achievement among tertiary students.

1.1 Statement of the Problem

The study was conducted to assess the levels of time management skills and learning engagement to determine their relationship to the academic performance in Mathematics.

Specifically, it aimed to answer the following questions:

1. What is the level of time management skills of college students in Mathematics in terms of:

a. time blocking

b. time tracking

c. to do list

2. What is the level of learning engagement of college students in Mathematics in terms of:

a. behavioral engagement

b. emotional engagement

c. cognitive engagement

3. What is the level of academic performanceof college students in Mathematics?

4. Is there significant relationship on time management skills to academic performance of students in Mathematics?

5. Is there significant relationship on learning engagement to academic performance of students in Mathematics?

1.2 Hypothesis of the Study

The hypotheses were drawn based on the stated objectives and tested at 0.05 level of significance:

Ha_1: There is a significant relationship between time management skills and academic performance in Mathematics among college students.

Ha_2: There is a significant relationship between learning engagement and academic performance in mathematics among college students.

2.METHODOLOGY

This section outlined the methods and procedures that are utilized in this research. It is divided into the following sub-section: research design, locale of the study, sampling procedure, respondents of the study, instrumentation, data gathering procedure, and statical analysis aim at assessing the level of academic performance on time management skills and learning engagement among Don Carlos Polytechnic College.

2.1 Research Design

This study employed a descriptive-correlational research design to evaluate the level of time management skills and learning engagement on academic performance in Mathematics among BEED second-year students the frequency counts average of the participants levels of time management skills and learning engagement on academic performance were ascertained using a descriptive approach. According to John W. Creswell (2018), this type of research was useful in describing characteristics of a group and analyzing relationships between variables without manipulating them. This was very relevant in education because it helped teachers and curriculum planners understand student behavior, study habits, and learning participation, which served as a basis for improving teaching strategies and academic interventions.

2.2 Locale of the Study

This study was conducted at Don Carlos Polytechnic College (DCPC) located at Purok 2, Poblacion Norte, Don Carlos, Bukidnon 8712, Region X, Philippines. The respondents of the study were second-year Bachelor of Elementary Education (BEED) students who were currently enrolled in the second semester of the School Year 2025–2026. The total population of second-year BEED students consisted of 580 regular students distributed across ten (10) sections.

Don Carlos Polytechnic College is renowned for its focus on teacher education and the College of Criminal Justice, with a diverse student population of approximately 5,000 students and around 100 faculty members across departments. The college offered various undergraduate programs including the Bachelor of Elementary Education (BEED), Bachelor of Secondary Education (BSED), Bachelor of Science in Criminal Justice (BS Crim), and Bachelor of Science in Industrial Security Management (BSISM). The institution was strategically located approximately 170 meters from the Sayre Highway.

2.3 Sampling Procedure

This study employed a stratified random sampling technique to select the respondents. The total population consisted of 580 second-year Bachelor of Elementary Education (BEED) students enrolled in ten (10) regular class sections at Don Carlos Polytechnic College during the second semester of the School Year 2025–2026. Weekend class students were excluded from the study to ensure uniformity in class schedules and learning conditions.

From the total population, one hundred (100) students were selected as respondents through stratified random sampling. The respondents were proportionally distributed according to the size of each of the ten regular class sections to ensure proper representation. After determining the number of respondents needed from each section, the participants were randomly selected to provide equal chances of being selected and to maintain fairness in the selection process.

This sampling method was used to obtain a representative sample of the population and to ensure that all regular sections were properly represented in the study.

2.4 Research Instrument

This study utilized an adapted survey questionnaire to measure the independent variables, namely time management skills and learning engagement, while academic performance in Mathematics was measured using the respondents' grades in Math 101 (Teaching Mathematics in Elementary Grade) among second-year BEED students at Don Carlos Polytechnic College. Thus, the instrument was divided into three parts for better organization and clarity.

Part I examines the respondents' time management skills. This section is based on the instrument used by Dacoylo et al. (2024). It includes three indicators: time blocking, time tracking, and the use of to-do lists. Each indicator contains a set of statements, with five (5) statements for time blocking and time tracking and four (4) statements for the use of to-do lists, for a total of fourteen (14) statements that assess how students plan, allocate, and manage their time for academic responsibilities.

Part II measures the students' learning engagement in Mathematics. The items are adapted from the Student Engagement Response Scale developed by Mařoco et al. (2016). This section includes statements under behavioral engagement, cognitive engagement, and emotional engagement. In total, it contains fifteen (15) statements that measure the students' level of participation, thinking processes, and emotional involvement in learning Mathematics. Both Part I and Part II use a 5-point Likert scale to determine the respondents' level of agreement with each statement. The instrument was modified by replacing the general subject references with mathematics to ensure that the items are directly relevant to the academic focus of the study.

Part III measured the dependent variable, academic performance in mathematics, using the students' official grades. Grades were obtained from the students themselves, who were asked to provide their mathematics grades honestly and accurately. Academic grades are widely recognized in educational research as valid and reliable indicators of students' academic performance and academic success, as they consistently reflect cumulative learning outcomes and performance across assessments (Richardson, Abraham, & Bond, 2020).

2.5 Scoring Procedure

In determining the level of time management skills in Mathematics in terms of time blocking, time tracking, to-do list. The following rating scale was employed:

Rating	Range	Descriptive Rating	Qualitative Interpretation
5	4.50-5.00	Strongly Agree	Very high
4	3.50-4.49	Agree	High
3	2.50-3.49	Neutral	Moderate
2	1.50-2.49	Disagree	Low
1	1.00-1.49	Strongly Disagree	Very low

In examining the level of learning engagement in Mathematics in terms of behavioral engagement, emotional engagement, and cognitive engagement, the following rating scale was utilized:

Rating	Range	Descriptive Rating	Qualitative Interpretation
5	4.50-5.00	Strongly Agree	Very high
4	3.50-4.49	Agree	High
3	2.50-3.49	Neutral	Moderate
2	1.50-2.49	Disagree	Low
1	1.00-1.49	Strongly Disagree	Very low

In evaluating the level of academic performance in Mathematics, the academic performance of Bachelor of Elementary Education 2 (BEED Math 2) was measured using their official mathematics course grades that were obtained during the first semester.

The grade is according to the 1.00 to 5.00 scale range, with 1.00 as the highest grade, 3.00 as the passing grade, and 5.00 as the failing grade as shown below:

Grade	Percentage Equivalent	Description
1.00	98-100 %	Excellent
1.25-1.50	92-97 %	Very Good
1.75-2.00	85-91 %	Good
2.25	82-84 %	Average
2.50	80-81%	Fair
2.75	76-79 %	Poor
3.00	75%	Passing
5.00	74 % and below	Failed

2.6 Ethical Considerations

The study was conducted in accordance with established research ethics and with the approval of the appropriate authorities at Don Carlos Polytechnic College (DCPC), including the College Dean and Program Head.

Participation was entirely voluntary, and informed consent was obtained after clearly explaining the purpose, procedures, and potential risks of the study. Confidentiality and anonymity were strictly maintained, and no personal identifying information was disclosed. The data collected were used solely for academic purposes. Participants were also informed of their right to refuse to answer any question and to withdraw from the study at any time without penalty, thereby ensuring the ethical integrity of the research process.

Furthermore, this study complied with the provisions of the Data Privacy Act of 2012, ensuring that all personal data collected from the respondents were protected, securely stored, and processed in accordance with data privacy principles. Any information obtained was treated with utmost confidentiality and was used exclusively for research purposes.

2.7 Statistical Treatment

In this study, descriptive statistics were employed to analyze and summarize the data gathered from the respondents. Descriptive statistics were used to determine the level of time management skills, learning engagement, and academic performance in Mathematics among second-year BEED students.

Specifically, mean and standard deviation were computed to describe the level of time management skills in terms of time blocking, time tracking, and to-do list, as well as the level of learning engagement in terms of behavioral, emotional, and cognitive engagement. The mean determined the average response of the students for each indicator.

For academic performance in Mathematics, particularly in Math 101 (Teaching Mathematics in Elementary Grade), frequency counts, percentages, and mean were used to summarize the respondents' grades and classify them according to the given qualitative interpretations.

To determine the significant relationship between time management skills, learning engagement, and academic performance in Mathematics, the Pearson Product-Moment Correlation Coefficient (r) was employed. The level of significance was set at 0.05 alpha level to determine whether the relationships among variables were statistically significant.

3.RESULTS AND DISCUSSIONS

3.1 The level of time management skills of college students in Mathematics in terms of time blocking

The table presents the level of students' time management skills in mathematics in terms of time blocking, with an overall mean score of 3.72, interpreted as "High." Among the indicators, the highest mean of 3.85 indicates that students frequently use time blocking when handling multiple mathematics tasks such as homework, quizzes, and projects. Other indicators, such as experiencing interruptions (3.77), difficulty allocating uninterrupted time (3.68), setting boundaries between study and leisure (3.68), and spending time on gadgets for non-academic purposes (3.60), are all similarly rated as High, suggesting that these behaviors are commonly experienced by the respondents.

Table 1. Time Management Skills of Students in Mathematics in Time Blocking

Indicator	Mean	Qualitative Interpretation
I use time blocking when I juggle multiple mathematics tasks such as homework, quizzes, and projects.	3.85	High
I experience frequent interruptions while working on my mathematics tasks throughout the day.	3.77	High
I struggle to allocate enough uninterrupted time to understand complex mathematics lessons or problems.	3.68	High
I set clear boundaries between my mathematics study time and my personal or leisure activities.	3.68	High

I spend too much time using my gadget during my scheduled mathematics study time for non-math activities.	3.60	High
OVERALL MEAN	3.72	High

Legend:

Range	*Descriptive Rating*	*Qualitative Interpretation*
4.50-5.00	*Strongly Agree*	*Very high*
3.50-4.49	*Agree*	*High*
2.50-3.49	*Neutral*	*Moderate*
1.50-2.49	*Disagree*	*Low*
1.00-1.49	*Strongly Disagree*	*Very low*

Analyzing the data, it can be observed that while students demonstrate a strong tendency to apply time blocking strategies, they simultaneously encounter challenges such as distractions and difficulty maintaining focused study periods. The consistently "High" ratings across both positive and negative indicators suggest that although students are aware of and attempt to practice time management techniques, their implementation may not always be effective due to competing demands and environmental distractions.

This implies that students possess a functional level of time management skills, particularly in organizing tasks; however, their ability to sustain deep focus and minimize interruptions remains a concern. The findings indicate that time blocking alone may not be sufficient unless accompanied by self-regulation strategies and discipline in managing distractions, especially those related to digital device usage. Thus, there is a need for interventions that enhance not only planning skills but also concentration and self-control.

Aeon and Aguinis (2017) reported that students commonly demonstrate a high level of structured time management practices such as scheduling and time blocking. Broadbent and Poon (2018) found that students generally exhibit a high level of time management and self-regulated learning behaviors in academic tasks. Macan et al. (2019) observed that students show a high level of ability in organizing, planning, and allocating study time effectively. Sanchez-Gomez et al. (2020) emphasized that students commonly demonstrate a high level of self-management and behavioral control in handling academic demands. Wolters and Brady (2021) further noted that students exhibit a high level of time management awareness and study organization in academic environments. Supporting these findings, Xu et al. (2022) highlighted that students frequently practice time allocation and scheduling strategies in managing learning activities and academic responsibilities.

3.2 The level of time management skills of college students in Mathematics in terms of time tracking

Table 2 Time Management Skills of Students in Mathematics in Time Tracking

Indicator	Mean	Qualitative Interpretation
I manage my time effectively when participating in mathematics-related extracurricular or academic activities.	3.80	High
I allocate sufficient time to review mathematics topics when preparing for quizzes or examinations.	3.70	High
I estimate how long it will take me to complete my mathematics homework or problem sets.	3.69	High
I monitor how much time I spend studying different mathematics topics or lessons.	3.67	High
I track my time when working on long-term mathematics projects or performance tasks to avoid last-minute work.	3.54	High
OVERALL MEAN	3.68	High

Legend:

Range	*Descriptive Rating*	*Qualitative Interpretation*
4.50-5.00	*Strongly Agree*	*Very high*
3.50-4.49	*Agree*	*High*
2.50-3.49	*Neutral*	*Moderate*
1.50-2.49	*Disagree*	*Low*
1.00-1.49	*Strongly Disagree*	*Very low*

Table 2 presents the students' level of time management skills in terms of time tracking. The overall weighted mean of 3.68 is interpreted as "High," indicating that students generally demonstrate strong awareness of how they allocate their time across various mathematics related tasks. Among the indicators, the highest mean (3.80) was obtained by the statement on effectively managing time when participating in mathematics-related extracurricular or academic activities. This is followed by allocating sufficient time for reviewing mathematics topics (3.70), estimating time needed for homework or problem sets (3.69), and monitoring time spent on different mathematics lessons (3.67). Meanwhile, the lowest mean (3.54), though still interpreted as "High," pertains to tracking time when working on long term mathematics projects or performance tasks.

The results suggest that students are more consistent in managing time for immediate or short-term academic tasks, such as reviewing lessons, completing homework, and participating in activities. Their ability to estimate and monitor time for these tasks reflects a structured and responsive approach to academic demands. However, the comparatively lower mean for long-term project tracking indicates a slight gap in sustained time monitoring over extended periods. This pattern implies that while students can effectively handle routine and near-deadline responsibilities, they may encounter challenges in maintaining consistent time management practices for tasks that require prolonged planning and delayed outcomes.

These findings imply that students possess well-developed time tracking skills that support their day-to-day academic performance in mathematics. Their high level of awareness and ability to allocate time efficiently suggest the presence of self-regulated learning behaviors. However, the lower consistency in tracking long-term tasks may indicate a tendency toward procrastination or difficulty in breaking down complex activities into manageable time segments. This highlights the need to strengthen students' long-term planning and monitoring strategies to ensure sustained productivity and reduce the risk of cramming or last-minute work.

Broadbent and Poon (2018) reported a high level of time monitoring behaviors among students in academic tasks. Macan et al. (2019) found that students generally demonstrate a high level of time tracking and planning practices in managing school responsibilities. Alyami et al. (2021) observed that students commonly exhibit a high level of time monitoring behaviors in handling academic workloads. Khan et al. (2022) noted that students show a high level of discipline and consistency in tracking time for academic tasks. Rasyid and Purwanto (2023) further indicated that students demonstrate a high level of ability in managing both short-term and long-term academic activities through time tracking practices. Wolters and Brady (2021) also described students as having a high level of self-monitoring and time awareness in academic contexts.

3.3 The level of time management skills of college students in Mathematics in terms of to-do-list

Table 3 Time Management Skills of Students in Mathematics in To-Do-List

Indicator	Mean	Qualitative Interpretation
I keep track of upcoming Mathematics assignments, projects, and deadlines.	3.8	High
I review specific Mathematics topics, practice Mathematics problems, and reinforce their understanding of Mathematics course material.	3.75	High
I break down my Mathematics study sessions into specific task and prioritize subjects based on upcoming Mathematics exams or assignments.	3.71	High

I plan for my day efficiently especially allocating time for Mathematics classes, Mathematics study sessions, extracurricular activities and personal commitments	3.62	High
OVERALL MEAN	3.72	High

Legend:

Range	*Descriptive Rating*	*Qualitative Interpretation*
4.50-5.00	*Strongly Agree*	*Very high*
3.50-4.49	*Agree*	*High*
2.50-3.49	*Neutral*	*Moderate*
1.50-2.49	*Disagree*	*Low*
1.00-1.49	*Strongly Disagree*	*Very low*

Table 3 presents the students' level of time management skills in terms of using to-do lists. The overall weighted mean of 3.72, qualitatively interpreted as "High," indicates that the respondents generally use to-do lists to organize their Mathematics-related tasks. Among the indicators, the statement "I keep track of upcoming Mathematics assignments, projects, and deadlines" obtained the highest mean of 3.80, followed by "I review and practice Mathematics lessons using my to-do list" with a mean of 3.75. Meanwhile, "I break down my Mathematics study tasks into smaller activities" recorded a mean of 3.71, while "I plan my daily schedule for Mathematicsrelated activities" obtained the lowest mean of 3.62, although it still falls under the "High" interpretation.

The findings indicate that students consistently use to-do lists to monitor academic requirements, organize study routines, and prioritize Mathematics-related tasks. The high mean in tracking assignments and deadlines reflects students' sense of responsibility and awareness of their academic obligations. Similarly, the high ratings in reviewing and practicing lessons suggest that students use to-do lists as a guide in managing their study habits and improving their learning routines. However, the relatively lower mean in planning daily schedules implies that students may still experience difficulties in allocating their time effectively across different activities. This suggests that while students are capable of identifying and listing their tasks, they may not always apply structured scheduling practices to maximize productivity and balance responsibilities.

The findings imply that students demonstrate effective organizational skills and characteristics of self-regulated learners through their use of to-do lists. Their ability to monitor, prioritize, and manage academic responsibilities contributes positively to their engagement and learning in Mathematics. However, the lower result in daily scheduling highlights the need to further strengthen students' comprehensive time management skills, particularly in balancing academic and personal responsibilities through proper time allocation. Improving students' scheduling practices may help increase productivity, efficiency, and overall academic performance.

Kitsantas et al. (2018) emphasized that students with strong time management and self-regulated learning skills are more capable of organizing Mathematics tasks, setting goals, and maintaining structured study routines. Rasheed et al. (2020) noted that higher levels of time management proficiency support timely completion of Mathematics requirements, reduced procrastination, and consistent academic engagement through planning and monitoring. Wolters and Brady (2021) explained that strong time management enhances students' concentration and ability to manage cognitive demands in complex tasks. Xu et al. (2023) further found that students with high levels of task organization and scheduling skills demonstrate better efficiency and consistency in Mathematics learning. Broadbent and Poon (2018) added that students with higher levels of time management and self-regulation tend to show stronger academic performance and engagement in Mathematics.

3.4 The level of learning engagement of college students in Mathematics in terms of behavioral engagement

Table 4 presents the students' level of behavioral engagement in Mathematics, with an overall weighted mean of 3.88, interpreted as High. Among the indicators, the highest mean of 3.98 indicates that students consistently follow classroom rules during Mathematics lessons. This is followed by paying attention during

Mathematics class with a mean of 3.94, while participation in group activities obtained a mean of 3.88. Meanwhile, completing Mathematics homework on time received the lowest mean of 3.78, although it is still interpreted as High. These results suggest that positive behavioral engagement practices are commonly demonstrated by the respondents during Mathematics instruction.

Table 4 Learning Engagement of Students in Mathematics in Behavioral

Engagement

Indicator	Mean	Qualitative Interpretation
I follow classroom rules during mathematics lessons.	3.98	High
I pay attention during my mathematics class.	3.94	High
I actively participate in group activities during mathematics class.	3.88	High
When I have difficulties in mathematics, I ask questions and participate in class discussions.	3.8	High
I usually complete my mathematics home on time.	3.78	High
OVERALL MEAN	3.88	High

Legend:

Range	*Descriptive Rating*	*Qualitative Interpretation*
4.50-5.00	*Strongly Agree*	*Very high*
3.50-4.49	*Agree*	*High*
2.50-3.49	*Neutral*	*Moderate*
1.50-2.49	*Disagree*	*Low*
1.00-1.49	*Strongly Disagree*	*Very low*

Analyzing the data, it can be observed that students display strong attentiveness, discipline, and participation during classroom activities. The high ratings in following classroom rules and paying attention indicate that students are responsive to structured learning environments and are able to remain focused during instruction. Their participation in group activities further suggests willingness to collaborate and engage with peers in learning tasks. However, the comparatively lower mean in completing homework on time indicates that some students may experience difficulty maintaining the same level of engagement when tasks require independent effort outside the classroom setting.

This implies that students possess a functional and active level of behavioral engagement in Mathematics, particularly in teacher-guided and interactive classroom situations. Their compliance with classroom expectations and attentiveness reflect positive learning behaviors that support academic learning. However, the lower result in homework completion suggests that students may still need support in strengthening consistency, responsibility, and time management skills in accomplishing academic tasks independently. Thus, there is a need for strategies that encourage sustained engagement not only during classroom discussions but also in completing learning activities beyond school hours.

Fredricks et al. (2016) emphasized that students commonly demonstrate a high level of behavioral engagement through attentiveness, participation, and involvement in classroom activities. Wang and Eccles (2016) noted that students who consistently follow classroom rules and remain attentive display a high level of disciplined learning behavior during instruction. Reeve (2018) explained that active participation and compliance with classroom expectations reflect a high level of student involvement in the learning process. Estira (2021) found that students generally exhibit a high level of participation and attentiveness during Mathematics classroom activities. Maamin et al. (2022) further described behaviorally engaged students as active, participative, and attentive in completing academic tasks. Gunuc and Kuzu (2020) highlighted that students commonly demonstrate a high level of classroom engagement through participation, cooperation, and attentiveness during learning activities.

3.5 The level of learning engagement of college students in Mathematics in terms of emotional, engagement, cognitive engagement

Table 5 presents the students' level of emotional engagement in Mathematics, with an overall weighted mean of 3.70, interpreted as High. Among the indicators, the highest mean of 3.83 indicates that students are generally interested in learning Mathematics. This is followed by feeling excited when working on Mathematics tasks with a mean of 3.74, while perceiving the mathematics classroom as an interesting place to learn and liking being in Mathematics class obtained means of 3.70 and 3.65, respectively. Meanwhile, feeling very accomplished in Mathematics at school received the lowest mean of 3.59, although it is still interpreted as High. These results suggest that positive emotional engagement toward Mathematics is commonly demonstrated by the respondents during learning activities.

Table 5. Learning Engagement of Students in Mathematics in Emotional Engagement

Indicator	Mean	Qualitative Interpretation
I am interested in learning mathematics.	3.83	High
I feel excited when working on mathematics tasks.	3.74	High
My mathematics classroom is an interesting place to learn.	3.70	High
I like being in mathematics class.	3.65	High
I feel very accomplished in mathematics at school.	3.59	High
OVERALL MEAN	3.70	High

Legend:

Range	*Descriptive Rating*	*Qualitative Interpretation*
4.50-5.00	*Strongly Agree*	*Very high*
3.50-4.49	*Agree*	*High*
2.50-3.49	*Neutral*	*Moderate*
1.50-2.49	*Disagree*	*Low*
1.00-1.49	*Strongly Disagree*	*Very low*

Analyzing the data, it can be observed that students show strong interest and enjoyment in Mathematics, as reflected in the high mean scores for interest and excitement. This indicates that learners are emotionally receptive and willing to engage in Mathematics-related tasks. The relatively positive ratings for classroom experience also suggest that students perceive their learning environment as engaging and supportive, which contributes to their emotional involvement in the subject. However, the comparatively lower mean in feeling accomplished suggests that while students enjoy Mathematics, some may still experience uncertainty regarding their level of competence or mastery.

This implies that students possess a high level of emotional engagement in Mathematics, particularly in terms of interest, enjoyment, and positive classroom experiences. Such emotional engagement plays an important role in sustaining motivation and encouraging continued participation in learning activities. However, the lower sense of accomplishment suggests that positive feelings toward Mathematics may not always translate into confidence in performance. This indicates the need for instructional strategies that not only maintain students' interest but also strengthen their self-efficacy and sense of achievement in the subject.

Pekrun et al. (2017) emphasized that students commonly demonstrate a high level of positive emotions, such as enjoyment and interest, during Mathematics learning activities. Wang et al. (2019) noted that students generally exhibit a high level of emotional engagement through enthusiasm, interest, and positive participation in classroom learning. Bae and DeBuskLane (2019) found that students often display a high level of enjoyment and sense of belonging in classroom environments. Yang et al. (2021) explained that students commonly experience a high level of emotional involvement when learning takes place in supportive and engaging classrooms. Qiu and Cheng (2022) further highlighted that students demonstrate a high level of interest and enjoyment in Mathematics when classroom activities are interactive and engaging.

3.6 The level of learning engagement of college students in Mathematics in terms of cognitive engagement

Table 6 presents the students' level of cognitive engagement in Mathematics, with an overall weighted mean of 3.934, interpreted as High. Among the indicators, the highest mean of 3.99 indicates that students actively apply previously learned Mathematics concepts to solve new problems. This is followed by seeking clarification when encountering unfamiliar mathematical terms or symbols with a mean of 3.97, and connecting Mathematics concepts with other subjects or real-life situations with a mean of 3.96. Meanwhile, discussing mathematical ideas or problems with people outside the classroom obtained the lowest mean of 3.85, although it is still interpreted as High. These results suggest that students generally demonstrate strong cognitive engagement during Mathematics learning activities.

Table 6 Learning Engagement of Students in Mathematics in Cognitive Engagement

Indicator	Mean	Qualitative Interpretation
I try to use what I have learned in mathematics to solve new problems.	3.99	High
When I do not understand a mathematical term or symbol, I try to find its meaning by asking someone or using reference materials.	3.97	High
I try to connect mathematics with ideas from other subjects or real-life situations.	3.96	High
When studying mathematics, I question myself to make sure I understand the lesson.	3.9	High
I discuss mathematical ideas or problems with people outside the classroom.	3.85	High
OVERALL MEAN	3.93	High

Legend:

Range	*Descriptive Rating*	*Qualitative Interpretation*
4.50-5.00	*Strongly Agree*	*Very high*
3.50-4.49	*Agree*	*High*
2.50-3.49	*Neutral*	*Moderate*
1.50-2.49	*Disagree*	*Low*
1.00-1.49	*Strongly Disagree*	*Very low*

Analyzing the data, it can be observed that students are highly engaged in cognitive processes such as problem-solving, concept application, and meaning-making. The high ratings in applying prior knowledge and seeking clarification indicate that students actively use strategies to enhance their understanding of Mathematical concepts. Their ability to connect lessons to real-life situations and other disciplines further reflects higher-order thinking skills, including analysis, synthesis, and application. However, the comparatively lower mean in discussing Mathematical ideas outside the classroom suggests that students may have limited opportunities or motivation to extend cognitive engagement beyond formal learning environments.

This implies that students possess a high level of cognitive engagement in Mathematics, characterized by active problem-solving, critical thinking, and the use of effective learning strategies. Their behaviors indicate deep learning, as they go beyond memorization and actively construct understanding of Mathematical concepts. However, the lower engagement in informal discussions suggests that cognitive engagement is more evident within structured classroom settings than in external or peer-based learning contexts. Thus, there is a need to encourage students to further extend their cognitive engagement through collaborative discussions, peer interaction, and real-world application of Mathematical concepts.

Fredricks et al. (2016) emphasized that students commonly demonstrate a high level of cognitive engagement through critical thinking, problem-solving, and self-regulated learning strategies. Lei et al. (2018) noted that students who actively

invest effort in understanding complex concepts display a high level of cognitive involvement in learning tasks. Greene (2018) explained that students who frequently apply learning strategies such as seeking clarification, connecting ideas, and applying knowledge demonstrate a high level of cognitive engagement. Bond et al. (2020) further highlighted that students commonly show a high level of meaningful engagement when actively participating in learning activities and constructing understanding of concepts. Maamin et al. (2022) also described cognitively engaged students as active learners who consistently apply analysis, reasoning, and problemsolving skills during Mathematics instruction. Wang and Degol (2020) noted that students with high cognitive engagement frequently demonstrate persistence, strategic thinking, and active mental effort in academic tasks.

3.7 The level of academic performance of college students in Mathematics

Table 7 presents the level of academic performance of college students in Mathematics based on their grades and corresponding qualitative interpretations. The table reveals that the majority of the respondents obtained grades ranging from 1.75–2.00, with a frequency of 63 or 63% of the total respondents, interpreted as "Good." This was followed by 23 respondents or 23% who obtained grades between 1.25–1.50, interpreted as "Very Good." Meanwhile, 9% of the students were categorized as "Average," while only a small percentage fell under "Excellent," "Fair," and "Poor." No students obtained grades interpreted as "Passing" or "Failed." The overall mean grade of 1.81 indicates a qualitative interpretation of "Good," suggesting that the respondents generally performed well in Mathematics.

Table 7. Academic Performance of College Students in Mathematics

Valid	Frequency	Percent	Qualitative Interpretation
1.00	1	1%	Excellent
1.25 -1.50	23	23%	Very Good
1.75 – 2.00	63	63%	Good
2.25	9	9%	Average
2.50	1	1%	Fair
2.75	3	3%	Poor
3.00	0	0%	Passing
5.00	0	0%	Failed
Total	100	100%	
OVERALL MEAN: 1.81			Good

The findings indicate that most college students demonstrated satisfactory to above-average academic performance in Mathematics. The concentration of responses within the "Good" category suggests that students possess adequate mathematical knowledge, problem-solving skills, and understanding of mathematical concepts necessary for college-level learning. The relatively high percentage of students under the "Very Good" category further implies that a considerable number of respondents are capable of achieving higher academic standards. Moreover, the absence of failing grades indicates that the respondents were able to meet the minimum academic requirements in Mathematics. However, the presence of students categorized under "Average," "Fair," and "Poor" suggests that some learners may still encounter difficulties in understanding complex mathematical concepts, which may be influenced by factors such as learning habits, motivation, instructional methods, or emotional engagement.

The overall mean of 1.81, interpreted as "Good," signifies that the academic performance of college students in Mathematics is generally favorable. This implies that the students are academically capable of coping with the demands of Mathematics courses in tertiary education. The result may also indicate that students are benefiting from effective teaching strategies, appropriate learning resources, and supportive academic environments that contribute to their achievement in Mathematics. Furthermore, the predominance of "Good" and "Very Good" ratings suggests that students are developing competencies in critical thinking, analytical reasoning, and mathematical problem-solving. Nevertheless, the existence of a few students with lower performance levels highlights the need for continuous academic support, intervention programs, and learner-centered instructional approaches to help struggling students improve their mathematical performance.

The findings are supported by recent studies emphasizing that academic performance in Mathematics is influenced by student engagement,

motivation, and effective teaching strategies. OECD (2016) stated that supportive learning environments improve students' mathematical achievement. Fredricks et al. (2017) explained that engaged students tend to perform better academically. Han and Ellis (2020) found that self-regulated learning contributes to higher Mathematics performance. Mega et al. (2022) highlighted that motivation and emotional engagement positively affect academic achievement, while Chen et al. (2025) concluded that teacher support and active learning experiences enhance students' performance in Mathematics. These studies support the present finding that the respondents generally demonstrated a "Good" level of academic performance.

3.8 Correlation analysis Between the Academic Performance and Time Management skills

Table 8. Correlation analysis Between the Academic Performance and Time

VARIABLES	CORRELATION COEFFICIENT (r)	PROBABILITY (p)
Time Management Skills	.356	.000**

Management skills

ns – not significant

* p < 0.05

** p < 0.01

Table 8 presents the correlation analysis between academic performance and time management skills of college students. The table shows a correlation coefficient (r) of 0.356 with a probability value (p) of .000. Since the p-value is lower than the 0.05 level of significance, the relationship between the variables is considered statistically significant.

The obtained correlation coefficient of 0.356 indicates a low positive correlation between academic performance and time management skills. This means that as time management skills increase, academic performance also tends to improve. The result suggests that students with better time management skills are more likely to achieve higher academic performance in Mathematics. The significant p-value further confirms that the relationship between the two variables is not due to chance.

The findings imply that time management skills play an important role in students' academic performance in Mathematics. Students who effectively manage their time are more likely to organize their study schedules, complete academic tasks on time, and allocate sufficient time for learning activities, which may contribute to better academic achievement. The positive correlation further indicates that improved time management is associated with higher academic performance among college students. A significant relationship exists between time management skills and academic performance in Mathematics among college students at the 0.05 level of significance; therefore, the hypotheses is accepted.

The findings are supported by studies which emphasize that time management significantly influences students' academic achievement. Britton and Tesser (2016) stated that effective time management contributes to better academic outcomes among college students. Macan et al. (2017) explained that students who organize and prioritize their tasks tend to achieve higher academic performance. In 2019, Nasrullah and Khan found that proper time allocation and scheduling positively affect students' learning and achievement in Mathematics. Similarly, Aeon and Aguinis (2021) revealed that time management practices improve productivity and academic success. Moreover, Chen et al. (2025) concluded that students with strong time management skills demonstrate better academic performance because they are more capable of balancing academic responsibilities and study demands.

3.9 Correlation analysis Between the Academic Performance and Learning Engagement

Table 9 presents the correlation analysis between academic performance and learning engagement of college students. The table shows a correlation coefficient (r) of -0.189 with a probability value (p) of .059. Since the p-value is greater than the 0.05 level of significance, the relationship between academic performance and learning engagement is considered not significant.

Table 9. Correlation analysis Between the Academic Performance and Learning Engagement

VARIABLES	CORRELATION COEFFICIENT (r)	PROBABILITY (p)
Learning Engagement	-.189	.059^{ns}

ns – not significant

* p < 0.05

The obtained correlation coefficient of -0.189 indicates a very low negative correlation between academic performance and learning engagement. This suggests that there is only a slight relationship between the two variables. Although the negative coefficient implies that higher learning engagement may be associated with better academic performance, the relationship is too weak to be statistically significant. The p-value of .059 further confirms that no significant relationship exists between academic performance and learning engagement.

The findings imply that learning engagement may not be a strong predictor of academic performance in Mathematics among college students. Although students may actively participate in learning activities, other factors such as motivation, study habits, teaching strategies, time management, and personal circumstances may have a stronger influence on their academic achievement. This indicates that engagement in learning does not necessarily translate to higher academic performance. There is no significant relationship between learning engagement and academic performance in Mathematics among college students at the 0.05 level of significance; the hypotheses is rejected.

The findings are supported by studies which show that learning engagement does not always have a significant relationship with academic performance. Freeman (2016) found that the effect of engagement on achievement becomes weaker when other influencing variables are considered. Fredricks et al. (2017) explained that engagement contributes to achievement indirectly through motivation and self-regulation. In 2019, Lei et al. reported that some dimensions of engagement have only minimal influence on students' academic outcomes. Similarly, Mega et al. (2022) emphasized that emotional and behavioral engagement alone may not strongly predict academic success without effective learning strategies. Furthermore, Chen et al. (2025) concluded that academic performance is influenced by multiple interconnected factors, and learning engagement by itself may not significantly determine students' achievement in Mathematics.

4. ACKNOWLEDGMENT

The researchers sincerely express their deepest gratitude to everyone who contributed to the completion of this study. This work would not have been possible without the guidance, support, and encouragement received throughout the process.

The researchers offer their highest praise and thanksgiving to Almighty God for His divine guidance, wisdom, and strength. His blessings have been a constant source of inspiration and perseverance, enabling the researchers to overcome challenges and successfully complete this endeavor.

The researchers would like to thank their research adviser, Mr. Oscar J. Arigo., for his patience, dedication, and expert guidance. His insights and suggestions played a vital role in improving the quality and direction of this research.

The researchers also extend their appreciation to the members of the research committee, Mr. Ariel M. Berico, MS, Mrs. Fe B. Nambatac, PhD and Ms. Marianeña Rama, MS, for their valuable comments, thoughtful recommendations, and time devoted to reviewing this study. Their contributions helped strengthen and refine this work.

The researchers give special thanks to the participants who willingly shared their time and cooperation. Their responses and involvement were essential in gathering the data needed for this research.

The researchers are also grateful to their families and friends for their constant encouragement,

understanding, and moral support, which inspired them to persevere despite challenges.

The researchers finally extend their heartfelt appreciation to all individuals who, in various ways, have contributed to the completion of this study. Whether through advice, encouragement, technical assistance, or other forms of support, each effort has been invaluable.

REFERENCES

[1]. Abad, F. (2021). *Behavioral engagement and academic achievement in mathematics among college students*.

[2]. Adams, R. V., & Blair, E. (2019). Impact of time management behaviors on undergraduate engineering students' performance. *SAGE Open, 9*(1), 1–11. https://doi.org/10.1177/2158244018824506

[3]. Aeon, B., & Aguinis, H. (2017). It's about time: New perspectives and insights on time management. *Academy of Management Perspectives, 31*(4), 309–330. https://doi.org/10.5465/amp.2016.0166

[4]. Aloysian Journal. (2021). *Student engagement and mathematics performance among Filipino students*.

[5]. Alyami, M., et al. (2021). *Time monitoring behaviors and academic workload management among students*.

[6]. Ambrose, S. A., Bridges, M. W., DiPietro, M., Lovett, M. C., & Norman, M. K. (2018). *How learning works: Seven research-based principles for smart teaching*. Jossey-Bass.

[7]. Appleton, J. J., Christenson, S. L., & Furlong, M. J. (2008). Student engagement with school: Critical conceptual and methodological issues.
a. *Psychology in the Schools, 45*(5), 369–386.

[8]. https://doi.org/10.1002/pits.20303

[9]. Areepattamannil, S., & Freeman, J. G. (2018). Academic engagement and mathematics achievement among students. *School Psychology*
a. *International, 39*(4), 355–368.

[10]. https://doi.org/10.1177/0143034318774399

[11]. Baculanta, R. S., et al. (2025). Emotional engagement and mathematics achievement among Filipino learners. *Journal of Educational Research and Practice, 15*(2), 112–128.

[12]. Bae, C. L., & DeBusk-Lane, M. (2019). Middle school engagement profiles: Implications for motivation and achievement in learning. *Contemporary*
a. *Educational Psychology, 56*, 151–163.

[13]. https://doi.org/10.1016/j.cedpsych.2018.12.001

[14]. Bernardo, A. B. I. (2022). *Time management skills and academic achievement among senior high school students*.

[15]. Bond, M., Bedenlier, S., Marín, V. I., & Händel, M. (2020). Emergency remote teaching in higher education: Mapping the first global online semester. *International Journal of Educational Technology in Higher Education,*

[16]. *17*(1), 1–24. https://doi.org/10.1186/s41239-020-00282-x

[17]. Britton, B. K., & Tesser, A. (1991). Effects of time-management practices on college grades. *Journal of Educational Psychology, 83*(3), 405–410. https://doi.org/10.1037/0022-0663.83.3.405

[18]. Broadbent, J., & Poon, W. L. (2015). Self-regulated learning strategies and academic achievement in online higher education learning environments: A systematic review. *The Internet and Higher Education, 27*, 1–13. https://doi.org/10.1016/j.iheduc.2015.04.007

[19]. Bruner, J. S. (1961). The act of discovery. *Harvard Educational Review, 31*(1), 21–32.

[20]. Chen, X., et al. (2025). *Teacher support, learning engagement, and academic achievement in mathematics*.

[21]. Cheong Tian Ming, et al. (2024). *Time management skills and mathematics achievement among students*.

[22]. Credé, M., & Kuncel, N. R. (2008). Study habits, skills, and attitudes: The third pillar supporting collegiate academic performance. *Perspectives on Psychological Science, 3*(6), 425–453. https://doi.org/10.1111/j.17456924.2008.00089.x

[23]. Dacoylo, et al. (2024). *Time management skills questionnaire*.
[24]. Dela Cruz, R., & Torres, P. (2020). *Time management and academic achievement among Filipino college students*.
[25]. Dela Peña, M., & Lumabao, J. (2019). *Time management and mathematics performance among senior high school students in Cebu City*.
[26]. Delos Reyes, J. (2021). *Time management difficulties and academic performance among Grade 9 learners*.
[27]. Delos Santos, J. (2020). Cognitive engagement and mathematics performance of Filipino learners. *Asia Pacific Journal of*
[28]. *Multidisciplinary Research, 8*(3), 55–62.
[29]. Estira, K. L. A. (2021). *Interactive instructional approaches and mathematics achievement among students*.
[30]. 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
[31]. Fredricks, J. A., Filsecker, M., & Lawson, M. A. (2016). Student engagement, context, and adjustment: Addressing definitional, measurement, and methodological issues. *Learning and Instruction, 43*, 1–4.
[32]. https://doi.org/10.1016/j.learninstruc.2016.02.002
[33]. Fredricks, J. A., et al. (2017).*Studentengagement and academic performance in educational settings*.
[34]. Freeman, J. G. (2016). *Student engagement and academic achievement in mathematics*.
[35]. Fu, X., et al. (2025). *Time management and learning engagement among students*.
[36]. Ganzon, R. V., & Edig, M. M. (2022). Self-directed learning skills and academic performance in mathematics among Filipino students. *International Journal of Educational Studies, 15*(2), 88–102.
[37]. Garcia, L. M. (2021). Emotional engagement and academic performance in mathematics. *Journal of Educational Psychology Research, 13*(1), 67– 79.
[38]. Goodwood Journal. (2022). *Academic performance and influencing factors in education*.
[39]. Greene, B. A. (2018). *Cognitive engagement and self-regulated learning in mathematics education*.
[40]. Greene, J. A. (2018). *Self-regulation in education*. Routledge.
[41]. Gunuc, S., & Kuzu, A. (2020). *Student engagement in classroom learning environments*.
[42]. Han, F., & Ellis, R. A. (2020). Personalised learning networks in higher education: Their effects on self-regulated learning and academic performance. *Educational Technology Research and Development,*
[43]. *68*(6), 2939–2961. https://doi.org/10.1007/s11423-020-09775-1
[44]. ISPSC. (2023). *Student engagement and mathematics performance report*.
[45]. Jang, H., Kim, E. J., & Reeve, J. (2016). Why students become more engaged or more disengaged during the semester: A selfdetermination theory dual-process model. *Learning and Instruction, 43*, 27–38. https://doi.org/10.1016/j.learninstruc.2016.01.002
[46]. Khan, A., et al. (2022). *Time tracking discipline and academic performance among students*.
[47]. Kitsantas, A., et al. (2018). *Self-regulated learning and time management in mathematics achievement*.
[48]. Lei, H., et al. (2018). *Student engagement and academic achievement*.
[49]. Local School Academic Review. (2023). *Mathematics performance and learning engagement report*.
[50]. Local School Focus Group. (2023). *Factors affecting students' mathematics performance*.
[51]. Local School Observation Report. (2023). *Classroom engagement and mathematics achievement observations*.
[52]. Maamin, M., et al. (2022).*Cognitive and*

behavioral engagement in mathematics learning.

[53]. Macan, T. H., et al. (2017). *Time management behavior and academic performance among students*.

[54]. Macan, T. H., et al. (2019). *Planning and organizing study time among college students*.

[55]. Manalo, J., & Atienza, R. (2021). *Time management practices and academic outcomes among pre-service teachers*.

[56]. Mařoco, J., et al. (2016). *Student Engagement Response Scale*.

[57]. Medina, A. (2022). *Emotional engagement and standardized mathematics performance among students*.

[58]. Medina, R., et al. (2022).*Structured study tools and mathematics achievement among students*.

[59]. Mega, C., Ronconi, L., & De Beni, R. (2014). What makes a good student? How emotions, self-regulated learning, and motivation contribute to academic achievement. *Journal of Educational Psychology, 106*(1), 121–131. https://doi.org/10.1037/a0033546

[60]. Mega, C., et al. (2022). *Learning engagement, motivation, and academic success*.

[61]. Nasrullah, S., & Khan, M. S. (2015). The impact of time management on the students' academic achievements. *Journal of Literature, Languages and Linguistics, 11*, 66–71.

[62]. Navarro, P., et al. (2022). *Time planning and mathematics achievement among students*.

[63]. Navarro, P., & Villanueva, J. (2022). *Time management skills and mathematics learning outcomes among junior high school students in Davao City*.

[64]. Organisation for Economic Co-operation and Development. (2016). *PISA 2015 results (Volume I): Excellence and equity in education*. OECD Publishing. https://www.oecd.org/pisa/

[65]. Organisation for Economic Co-operation and Development. (2018). *PISA 2018 results*. OECD Publishing. https://www.oecd.org/pisa/

[66]. Organisation for Economic Co-operation and Development. (2022). *PISA 2022 results: Learning during and after the pandemic*. OECD

[67]. Publishing. https://www.oecd.org/pisa/

[68]. Pathuddin, et al. (2016). *Time management skills and mathematics learning performance*.

[69]. Pathuddin, et al. (2025). *Time allocation and conceptual understanding in mathematics learning*.

[70]. Pekrun, R., et al. (2017). *Achievement emotions and student engagement in mathematics learning*.

[71]. Peteros, E., et al. (2021). *Time management, self-efficacy, and mathematics performance among working high school students in Cebu*.

[72]. Qiu, F., & Cheng, Y. (2022). *Interactive classroom activities and students' emotional engagement in mathematics*.

[73]. Ramos, J., & Lim, P. (2017). *Time management skills and academic stress among college students in Metro Manila*.

[74]. Ramos, P., & Santos, R. (2023). *Structured study schedules and mathematics achievement among junior high school students in Cebu*.

[75]. Rasheed, R. A., et al. (2020). *Time management and self-regulated learning among students in mathematics education*.

[76]. Rasyid, M., & Purwanto, A. (2023). *Time tracking practices and academic task management among students*.

[77]. Reeve, J. (2018). Students' classroom engagement produces longitudinal changes in classroom motivation. *Journal of Educational Psychology, 110*(4), 527–540. https://doi.org/10.1037/edu0000234

[78]. Rejas, M., & Tan, R. (2023). *Learning behaviors and academic performance in online mathematics classes*.

[79]. Reyes, A. P. (2019). *Emotional engagement and academic achievement in mathematics*.

[80]. Reyes, A. P., & Santos, M. (2020). *Time management practices and mathematics achievement among public secondary school students in Quezon Province*.

[81]. Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic

performance: A systematic review and meta-analysis. *Psychological Bulletin, 138*(2), 353–387.

[82]. https://doi.org/10.1037/a0026838

[83]. Salmela-Aro, K., & Upadyaya, K. (2018). *Role of engagement and study behaviors in academic achievement*.

[84]. Sanchez-Gomez, M., et al. (2020).*Self-management and academic performance among students*.

[85]. Santos, R. J., et al. (2022). Time management and academic performance of Filipino students. *Asia Pacific Journal of Education, 42*(3), 456–470.

[86]. Skinner, E. A., Kindermann, T. A., & Furrer, C. J. (2009). A motivational perspective on engagement and disaffection. *Educational and*

a. *Psychological Measurement, 69*(3), 493–525.

[87]. https://doi.org/10.1177/0013164408323233

[88]. Wang, M. T., & Degol, J. L. (2020). School climate: A review of the construct, measurement, and impact on student outcomes. *Educational Psychology Review, 28*(2), 315–352. https://doi.org/10.1007/s10648015-9319-1

[89]. Wang, M. T., & Eccles, J. S. (2012). Social support matters: Longitudinal effects of social support on students' engagement and achievement. *Child Development, 83*(3), 877–895. https://doi.org/10.1111/j.14678624.2012.01745.x

[90]. Wang, M. T., & Eccles, J. S. (2016). Multilevel predictors of math engagement and achievement. *Journal of Research on Adolescence, 26*(3), 633–

[91]. 648. https://doi.org/10.1111/jora.12209

[92]. Wang, X., et al. (2019).*Emotional engagement and participation in mathematics classrooms*.

[93]. Wang, X., et al. (2026). *Time management training and academic adjustment among students*.

[94]. Wolters, C. A., & Brady, A. C. (2021). College students' time management: A self-regulated learning perspective. *Educational Psychology Review,*

[95]. *33*(4), 1319–1351. https://doi.org/10.1007/s10648-020-09519-z Wright, J. (2002). *The Pickle Jar Theory of time management*.

[96]. Xu, J., et al. (2022). *Time allocation strategies and academic responsibilities among students*.

[97]. Xu, J., et al. (2023). *Task organization, scheduling skills, and mathematics learning efficiency*.

[98]. Yang, X., et al. (2021). Teacher support, engagement, and mathematics achievement. *Educational Studies in Mathematics, 106*(3), 1–20.