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One Clock, Many Challenges: Investigating the Effects of Multitasking on Time Management Skills and Academic Results

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Abstract
This study investigates the effects of multitasking on students' time management skills and academic performance. In today's fast-paced world, students often juggle multiple responsibilities, including studying, completing assignments, and participating in extracurricular activities. While multitasking is commonly perceived as an efficient strategy, its impact on learning outcomes remains debatable. Using a mixed-method approach, this research examines how multitasking influences students' ability to manage their time effectively and whether it affects their academic achievements. The findings reveal both benefits and drawbacks of multitasking, highlighting the importance of balance and strategic time management. The study aims to provide insights that can help students develop better study habits and improve academic performance.

Keywords: Multitasking, Time Management, Academic Performance, Cognitive Load, Mixed-Methods Research, Task Prioritization, Student Productivity

Introduction

In today's fast-paced academic environment, multitasking has become a common practice among students. Many believe that handling multiple tasks simultaneously improves efficiency. However, research suggests that multitasking can reduce concentration and negatively impact academic performance (Doolittle *et al*., 2021). Despite this, students often engage in multitasking while studying, completing assignments, and managing social interactions, believing it helps them manage their workload more effectively (Clinton-Lisell, 2021).

Cognitive Load Theory suggests that the human brain has a limited capacity for processing multiple streams of information simultaneously. When students multitask, they increase their cognitive load, which can lead to reduced learning efficiency and poor academic outcomes (Sweller, 2020). Studies have shown that frequent task-switching results in time delays and decreased retention of information, making multitasking an inefficient study strategy (Dubravac *et al*., 2024).

Moreover, time management plays a crucial role in academic success. Students with strong time management skills can allocate sufficient time for focused study sessions, reducing the need for multitasking (Trentepohl *et al*., 2022). However, many students struggle with prioritization, leading them to juggle multiple tasks at once, which ultimately affects their academic performance. Institutions should provide training on time management strategies to help students optimize their study habits and reduce cognitive overload (Lavy, 2023).

According to Wilson *et al*. (2021), time management skills significantly impact students' academic performance, particularly in structured environments where workload expectations are high. Additionally, Khan *et al*. (2020) found that students who dedicate more hours to independent study tend to achieve better academic outcomes, highlighting the role of personal motivation in effective time management. Moreover, Fang *et al*. (2021) explored how external factors such as school policies, curriculum structure, and social influences contribute to students' ability to manage their time effectively. These studies collectively emphasize that academic workload, motivation, and institutional support play critical roles in shaping students' time management skills and overall success.

This study investigates the relationship between multitasking, time management, and academic performance among senior high school students. By using a mixed-methods approach, this research aims to provide a comprehensive understanding

of how multitasking influences students' ability to manage their time and achieve academic success. The findings will offer insights into potential interventions to improve students' focus and productivity (Aslam *et al*., 2020).

Objectives of the Study

This study aims is to investigate the effects of multitasking on students' time management skills and academic performance at Noveleta Senior High School. The study aims to: (1) Understand how multitasking influences academic performance. (2) Identify challenges students face in managing their time while multitasking. (3) Explore strategies students use to balance multitasking with effective time management and academic achievement. (4) Analyze how multitasking affects students' ability to prioritize tasks. (5) Assess the impact of multitasking under time constraints on academic outcomes.

Methods and Materials

This study employs a sequential explanatory mixed-methods research design, integrating both quantitative and qualitative approaches to provide a comprehensive analysis of the effects of multitasking on students' time management and academic performance. The research is conducted in two phases: the first phase involves a survey-based quantitative study, and the second phase utilizes qualitative interviews to gain deeper insights into students' experiences. A descriptive-correlational research design is used in the quantitative phase to examine the relationship between multitasking and academic performance. The target population consists of Grade 11 and 12 students from Noveleta Senior High School. Stratified random sampling is employed to ensure balanced representation across different academic tracks. A sample size of 90 students is determined based on statistical power analysis to ensure reliability. Data collection methods include a structured survey questionnaire and interviews. The survey questionnaire, utilizing a Likert scale, measures multitasking frequency, time management skills, and self-reported academic performance. For the qualitative phase, 10 purposively selected students participate in semi-structured interviews to provide detailed narratives about their multitasking behaviors, challenges, and coping strategies. Data analysis is conducted using both statistical and thematic methods. Quantitative data is analyzed through descriptive statistics, such as mean and standard deviation, to summarize multitasking habits and time management effectiveness. Pearson correlation analysis determines the strength and direction of the relationship between multitasking and academic performance, while multiple linear regression analysis predicts academic outcomes based on multitasking behavior and time management skills. Thematic analysis is applied to qualitative data to identify recurring patterns and insights from the interview responses. Findings from the qualitative phase are integrated with the quantitative results to provide a holistic understanding of multitasking effects. The study adheres to ethical guidelines, ensuring confidentiality, informed consent, and voluntary participation. Students' identities remain anonymous, and data are used solely for research purposes.

Table 1: Demographic Profile of the Respondents

The study surveyed 100 Grade 11 and 12 students from Noveleta Senior High School, categorizing them by age, gender, and academic track. Most respondents were aged 16 to 18, with a balanced gender distribution. Participants came from different academic tracks, including STEM, HUMSS, ABM, and TVL, ensuring diverse perspectives. This demographic data helps contextualize the study's focus on multitasking and its impact on time management and academic performance.

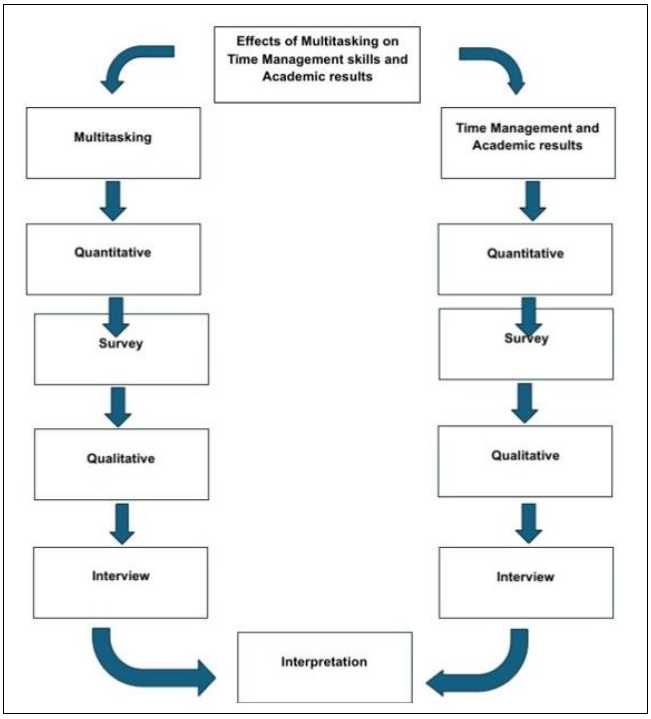

Fig 1: Conceptual Framework of the Study

The conceptual framework outlines how multitasking (independent variable) affects time management skills and academic results (dependent variables). It integrates both quantitative and qualitative approaches to provide a comprehensive understanding of the relationship. The framework emphasizes a balanced analysis, where quantitative data offers measurable results, and qualitative findings add depth and context. This mixed-methods approach ensures that the study captures both the statistical relationships and the real-world experiences of individuals.

Results and Discussion

This study explored the impact of multitasking on time management and academic performance using both statistical analysis and student interviews. Quantitative results showed a weak but significant correlation between multitasking and perceived academic success, though time management skills had a stronger influence on performance. Qualitative findings highlighted key challenges such as prioritization difficulties, cognitive overload, and inefficient time allocation. While multitasking often created a sense of productivity, it frequently led to unfinished or lower-quality work. Students who adopted structured time management strategies reported better focus and efficiency. Overall, the study emphasizes that effective time management is more crucial for academic success than multitasking.

Table 1: Descriptive Analysis of Multitasking Frequency and Academic Performance

Metric	Multitasking Frequency	Academic Performance
Number of Respondents	90	90
Mean	3.43	3.33
Standard Deviation	1.12	0.99
Minimum	1(Strongly disagree)	1(Strongly disagree)
25th Percentile (Q1)	3	3
Median (Q2)	3.5	3
75th Percentile (Q3)	4	4
Maximum	5(Strongly agree)	5(Strongly agree)

The mean multitasking frequency (3.43) suggests that most respondents engage in multitasking moderately to frequently while studying. The mean academic performance perception (3.33) indicates that students are neutral to slightly positive about the effects of multitasking on academic success. The standard deviation values show moderate variability, meaning responses are fairly distributed across the scale.

Table 2: Response Distribution of Multitasking Frequency and Academic Performance

Response	Multitasking Frequency (n)	Academic Performance (n)
1-Strongly Disagree	9	5
2-Disagree	3	11
3-Neutral	33	31
4-Agree	30	35
5-Strongly Agree	15	8
Total	90	90

In Multitasking Frequency, the highest number of respondents (33 out of 90, or 36.67%) were neutral about how often they multitask while studying. A significant portion (30 respondents, 33.33%) agreed that they frequently multitask. Only 9 respondents (10%) strongly disagreed, meaning very few avoid multitasking completely. In Academic Performance Perception, 35 respondents (38.89%) agreed that multitasking improves their academic performance. However, 31 respondents (34.44%) remained neutral, indicating uncertainty about whether multitasking helps or harms academic performance. A smaller proportion (16 respondents, 17.78%) disagreed or strongly disagreed with the idea that multitasking improves academic outcomes.

Table 3: Pearson Correlation Between Multitasking Frequency and Academic Performance

Variables	Pearson correlation coefficient (r)	p-value
Multitasking frequency & Academic performance	0.292	0.005

The Pearson correlation coefficient ($r = 0.292$) indicates a weak but positive correlation between multitasking frequency and academic performance perception. The p-value (0.005) is statistically significant ($p < 0.05$), meaning that the relationship observed is unlikely to be due to random chance. However, since the correlation is weak, it suggests that multitasking is only slightly associated with perceived academic performance improvements. This means that while students who multitask more frequently tend to report slightly higher academic performance perceptions, the effect is not strong enough to conclude that multitasking directly improves academic outcomes.

Table 4: Multiple Linear Regression Analysis

Predictor	Coefficient (β)	Standard error	t-value	p-value
Multitasking frequency	0.215	0.087	2.47	0.015
Time Management	0.401	0.081	4.95	<0.001
Intercept	1.75	0.45	3.89	<0.001

Multitasking frequency has a small but significant positive effect ($\beta = 0.215$, $p = 0.015$) on academic performance. Time management skills have a stronger positive effect ($\beta = 0.401$, $p < 0.001$), meaning students with better time management skills tend to report higher academic performance. The model suggests that time management skills are a stronger predictor of academic performance than multitasking frequency.

Theme 1: Definition of Execution of Multitasking

The execution of multitasking refers to the process of performing multiple tasks simultaneously or managing several tasks efficiently within a given time frame. It involves dividing attention and resources among different activities to improve productivity and efficiency.

Category 1: Understanding Multitasking

Multitasking is the ability to handle multiple tasks or activities at the same time. It can involve switching between tasks quickly or performing them simultaneously, depending on the situation and available resources.

Code 1: Time Management in Multitasking

Time management in multitasking refers to the ability to efficiently allocate time and resources while handling multiple tasks simultaneously or sequentially. It ensures that tasks are completed effectively without sacrificing quality.

> *"If you can't manage your time, multitasking is a must but if you can't handle multiple tasks, take one at the time".*

Theme 2: Benefits of Multitasking

Multitasking offers several benefits, particularly in improving productivity and time efficiency. By handling multiple tasks simultaneously or switching between them efficiently, individuals can complete their work faster and make better use of their time. This is especially useful in professional and academic settings where deadlines and responsibilities pile up. Additionally, multitasking enhances adaptability, allowing individuals to shift between different activities smoothly and manage unexpected tasks without significant disruption. It also helps develop essential skills such as cognitive flexibility, problem-solving, and decision-making. When done effectively, multitasking enables individuals to maximize their output while maintaining a balanced workflow. However, it is important to manage multitasking properly to avoid reduced focus and errors.

Category 2: Effects of Multitasking

Multitasking can boost productivity and adaptability by allowing individuals to handle multiple tasks efficiently. It also enhances problem-solving and decision-making skills. However, it can reduce focus, increase stress, and lead to more mistakes due to divided attention. Excessive multitasking may also affect memory and cognitive performance. While beneficial, it should be managed wisely

to maintain efficiency and accuracy.

Code 2: Multitasking Benefits and Drawbacks

Multitasking has both benefits and drawbacks. It can be efficient for simple tasks, like listening to a podcast while cleaning, and timesaving when handling multiple activities at once, such as checking emails during a meeting. It also boosts productivity for tasks you are already familiar with. However, multitasking can reduce the quality of work, especially for complex tasks, as it leads to mistakes and distractions. It also causes mental fatigue from constant switching and may slow down task completion. Additionally, juggling too many tasks can increase pressure, leading to feelings of being overwhelmed and stressed. Overall, while multitasking can be useful in some situations, focusing on one task at a time is often more effective.

> *"Being a multitasker helped my academic performance because it made my work faster, but it also made it more stressful to do because when you multitask, you think about how much more you have to do*".

Theme 3: Drawbacks of Multitasking

Multitasking has several drawbacks that can affect productivity and well-being. One major issue is reduced focus, as constantly switching between tasks can lead to mistakes and lower-quality work. It also increases stress and mental fatigue, making it harder to concentrate on complex tasks. Additionally, multitasking can slow down overall efficiency since shifting attention between activities takes extra time. Over time, excessive multitasking may negatively impact memory and cognitive performance. While it may seem efficient, multitasking can sometimes do more harm than good if not managed properly.

Category 3: Strategies of Effective Multitasking

Effective multitasking requires prioritization, task batching, and time blocking to manage tasks efficiently. Using productivity tools like calendars and to-do lists helps track progress, while mindful multitasking ensures focus on compatible tasks. Regular breaks also prevent fatigue and maintain concentration. With these strategies, multitasking becomes more efficient without compromising quality.

Code 3: Causes Inefficiency in Completing Tasks

Multitasking can cause inefficiency in completing tasks because it divides your focus and attention between multiple activities. When you switch back and forth between tasks, your brain must constantly reorient itself, which takes time and mental energy. This reduces the amount of time spent working on each task and can result in slower progress. Additionally, trying to focus on too many things at once can lead to mistakes or missed details, requiring more time to fix errors later. As a result, multitasking often ends up taking longer to finish tasks than if you had focused on one thing at a time.

> *" Whenever I multitask, my focus and concentration affects me because it gives me stress to do a lot of things at the same time".*

Theme 4: Impact on Academic Performance and Stress

Multitasking can reduce focus and comprehension, leading to lower academic performance and ineffective studying. It also increases stress, causing mental fatigue and anxiety. To improve efficiency and well-being, it's better to focus on one task at a time and use proper time management strategies.

Category 4: Tools and Techniques for Productivity

To enhance productivity, various tools and techniques can help manage tasks efficiently. Time management tools like Google Calendar, Trello, and Notion assist in organizing schedules and tracking progress. To-do list apps such as Todoist and Microsoft to Do help prioritize and break down tasks. Effective techniques include Pomodoro Technique, which uses timed work intervals with short breaks to maintain focus, and task batching, which groups similar activities to minimize distractions. Time blocking sets specific periods for different tasks, ensuring dedicated focus. Additionally, mindful multitasking helps balance multiple tasks without reducing efficiency. Using the right combination of tools and techniques can improve productivity while minimizing stress.

Code 4: Multitasking Leads to Pressure

Multitasking leads to pressure because it involves juggling multiple tasks at once, which can overwhelm your brain and decrease efficiency. When you try to focus on several things simultaneously, you're dividing your attention, which can result in mistakes or slower progress on each task. This constant switching between tasks also increases mental fatigue and stress, as your brain works harder to keep track of everything. Instead of completing tasks more quickly, multitasking often causes you to feel rushed and under pressure, as deadlines and responsibilities pile up. Focusing on one task at a time typically leads to better results, with less stress and a greater sense of accomplishment.

> *"Yes, the stress, kasi nga habang nag m-multitask ka mas na p-pressure ka sa pag gawa kasi alam mo sa sarili mong marami kang gagawin kaya pinag sabay sabay mo na".*

Theme 5: Task Priorization and Management

Task prioritization is the process of identifying and ranking tasks based on urgency and importance to ensure efficient completion. It helps in focusing on high-priority activities first, preventing missed deadlines and reducing stress. Common techniques include the Eisenhower Matrix, which categorizes tasks into urgent-important levels, and the ABC method, which assigns priority labels to each task. Task management, on the other hand, involves organizing, tracking, and completing tasks effectively. This includes setting clear goals, using productivity tools like Trello or Notion, and applying time management techniques such as time blocking and task batching. Proper prioritization and management improve productivity, reduce overwhelm, and ensure smoother workflow execution.

Category 5: Individual Differences and Perspectives

Individual differences refer to the unique traits, abilities, and learning styles that make each person distinct, influenced by factors like genetics and experiences. Perspectives are personal viewpoints shaped by beliefs and background, leading to different ways of interpreting situations. Recognizing these differences helps improve communication, teamwork, and inclusivity.

Code 5: Prioritizing Tasks Based on Deadlines and Difficulty

Prioritizing tasks based on deadlines and difficulty is an effective strategy for managing time and staying on track. Tasks with looming or tight deadlines should be given

priority, as they need to be completed soon to avoid missing important dates or causing delays. By focusing on these tasks first, you can ensure that you meet your commitments on time. On the other hand, more difficult tasks, which may require more effort or time, should also be addressed early in the day when you are most focused and energized. Breaking down challenging tasks into smaller, manageable steps can help make them feel less overwhelming. By balancing both deadlines and task difficulty, you ensure that you handle time-sensitive responsibilities while also making progress on more complex tasks before they become more difficult to manage.

> *"Multitasking helped my academic performance when I efficiently balanced studying for multiple subjects by creating a structured schedule, but it also hurt me when I tried to complete assignments while listening to lectures, leading to missed important details".*

Conclusion

This study provides valuable insights into the effects of multitasking on students' time management skills and academic performance. The findings suggest that while multitasking is a widespread practice among students, it does not necessarily lead to improved academic outcomes. Quantitative analysis revealed a weak but significant correlation between multitasking frequency and academic performance, suggesting that students who multitask may perceive themselves as more productive, but this perception does not always translate into academic success. Qualitative findings further highlighted the challenges of multitasking, including difficulties in prioritization, cognitive overload, and inefficient time allocation. Many students struggled with task-switching and reported decreased comprehension and retention when engaging in multiple academic activities simultaneously. The integration of both quantitative and qualitative findings underscores the importance of effective time management strategies. Students who adopted structured approaches such as time-blocking and prioritization techniques demonstrated improved focus and efficiency, mitigating the negative effects of multitasking. Given these findings, it is recommended that educational institutions implement time management training programs and promote single-task study sessions to enhance learning outcomes. Ultimately, while multitasking remains a reality in students' daily lives, its role in academic performance should be reconsidered. Encouraging focused and deliberate study practices, minimizing distractions, and fostering an academic environment that prioritizes deep learning over simultaneous task execution can significantly improve students' academic success. Future research should explore intervention programs and long-term strategies to help students manage their workload effectively while minimizing the adverse effects of multitasking.

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