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Social Media Consumption and Academic Discipline as Predictors of Mathematics Performance in Filipino Grade 10 Adolescents

John Rolly L. Legaria
CEBU TECHNOLOGICAL UNIVERSITY, Main Campus, R. Palma St., Cebu City, Philippines

Abstract: This study examined social media use, study habits, and mathematics performance among Grade 10 students at Bunga National High School, Toledo City, during School Year 2025–2026 as a basis for an action plan. A descriptive-correlational design included 59 students through total enumeration. An adapted three-part questionnaire collected demographic information, passive and active social media use, and study habits; third-quarter Mathematics grades were obtained from official school records. Data were summarized using frequencies, percentages, means, and reported variability measures, and relationships were examined using Pearson correlation at the 0.05 significance level. Most respondents were 15 years old, slightly more were female, and 67.80% reported family monthly income of ₱10,000 or below. Passive and active social media use were rated High, with means of 3.51 and 3.53, respectively; study habits were Moderate, with a mean of 3.04. Mean Mathematics performance was 85.53, classified as Very Satisfactory. Neither social media use ($r = 0.079$, $p = 0.552$) nor study habits ($r = 0.218$, $p = 0.097$) showed a statistically significant linear association with Mathematics performance. These findings do not establish the absence of an effect. The proposed action plan addresses mathematics support, structured study routines, and responsible social media engagement; intervention effectiveness was not evaluated by the reported correlational analysis.

Keywords: mathematics education; social media use; study habits; mathematics performance; descriptive-correlational design; Bunga National High School, Toledo City.

Introduction

Mathematics supports reasoning, strategic thinking, and analysis for everyday activities and future careers, including financial planning, measurement, technology use, and scientific literacy. Students' confidence, motivation, and attitudes are relevant to their mathematics achievement (OECD, 2024). At the same time, social media platforms have become part of adolescents' communication, information gathering, and daily routines. YouTube, TikTok, Instagram, and Snapchat were among the widely used platforms discussed in the reviewed literature (Anderson et al., 2023). These patterns provide a context for examining digital behavior alongside Mathematics performance.

Social media use is often influenced by psychological factors such as low self-confidence and difficulties in self-regulation. Students who find it challenging to manage their emotions, behavior, and learning habits may be more prone to excessive or problematic use of social media. As a result, they may spend a significant amount of time on networking platforms, which can contribute to distractions and procrastination. Over time, these habits may interfere with both personal growth and academic progress, leading to lower academic performance (Ciacchini et al., 2023; Xu et al., 2023).

Several studies have shown that frequent social media use is linked to poorer academic outcomes. When students devote excessive time to online social interactions, they often have less time for studying and may struggle to keep up with academic responsibilities. Research suggests that the negative effects of social media on learning may be associated with factors such as social anxiety, fear of missing out (FoMO), and ineffective time management, all of which can hinder academic success (Gong et al., 2025; Alhajjaj et al., 2025).

This trend continues to be observed among students today. Time spent on social networking sites can reduce opportunities for focused studying, reviewing lessons, and completing academic tasks, which may ultimately affect academic performance and grade point averages (Bedua et al., 2021). Moreover, recent findings emphasize that social media remains a significant factor in shaping students' learning outcomes. The way students engage with social media can influence their academic achievement regardless of their academic background or prior level of performance (Liu et al., 2022).

But social media use matters more than just academics. The problematic use of social media is associated with lower life satisfaction, higher loneliness and poorer psychological well-being in students, suggesting that over-use of social media can be detrimental to their emotional and mental health. Students' growing dependence on digital platforms may be bad for the development of good study habits. Problems with social media use have been associated with problems in academic concentration and self-regulated learning behaviors which may hinder student engagement and effectiveness in academic tasks (Boniel-Nissim & Alt, 2022). Studies have found that often non-school related digital activities intrude on study time. Students felt that digital distractions, including social media use and other non-academic activities involving technology, negatively influence their academic performance as they interfere with concentration and reduce focus on learning tasks (Pérez-Juárez et al., 2023).

International assessments provide a context for concerns about Filipino learners' academic readiness. PISA 2022 results reported performance below OECD averages in mathematics, science, and reading (OECD, 2023b). These comparisons do not identify the causes of achievement differences within Bunga National High School; the present study examines two specified bivariate associations in its Grade 10 cohort.

Study habits are the routines, strategies, and behaviors students use to support learning beyond classroom instruction. They include time management, regular review, self-testing, note taking, practice, organization of materials, and a distraction-free study environment. These practices support understanding and retention and are relevant to mathematics, where concepts build on earlier learning (Lone, 2021).

Examining social media use and study habits alongside Grade 10 Mathematics performance at Bunga National High School can inform support for learners' digital behavior and study routines. The study tests social media use in relation to Mathematics performance and study habits in relation to Mathematics performance. Its findings inform an action plan for students, teachers, parents, and school administrators without establishing causal effects.

Theoretical and Conceptual Framework

The first theory that supports this study is the Social Learning Theory, which posits that individuals learn behaviors through observation, imitation, and interaction with others in their environment. Learning does not only occur through direct experience but also through observing others' actions and the consequences of those actions (Bandura, 1977). In the context of this study, students may learn certain behaviors through social media platforms, including academic and non-academic behaviors. Students may have difficulty managing their time, engaging in academic tasks, and prioritizing responsibilities due to exposure to social media. When students often see their peers doing more of online activities related to entertainment, they may copy such behaviors which may decrease their time for studying mathematics. In contrast, when social media is used for academic collaboration and learning support, it may have a positive effect on study

habits and performance. Social Learning Theory thus provides a basis for understanding how social media use may be related to students' study behaviors and academic outcomes.

The second theory underpinning this study is the Theory of Planned Behavior, which explains behavior in relation to attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991). In this study, students' decision to use social media or study mathematics is determined by their attitude toward the activities, the influence of peers and significant others, and their perceived ability to manage their time effectively. If students prefer interacting on social media rather than studying, and their peers also prefer online interaction, they are more likely to spend less time on academic activities. However, if students believe good study habits are important for academic achievement and feel they can manage their time, they are more likely to show behaviors that enhance their math performance. Hence, the Theory of Planned Behavior helps to explain how the students' intentions and perceptions affect their social media use and study habits.

The third theory that supports this study is Cognitive Load Theory. The theory states that learning is influenced by the mental effort applied in working memory. However, when students are overloaded with information or distractions, their ability to process and retain new information is reduced (Sweller, 1988). In this study, excessive use of social media can create cognitive overload, which in turn reduces students' ability to concentrate on mathematical problem solving and conceptual understanding. Mathematics requires concentration, logical thinking, and systematic thinking. When students divide their attention between academic work and social media notifications, fewer cognitive resources may be available for deep learning. Social media distractions may affect math performance.

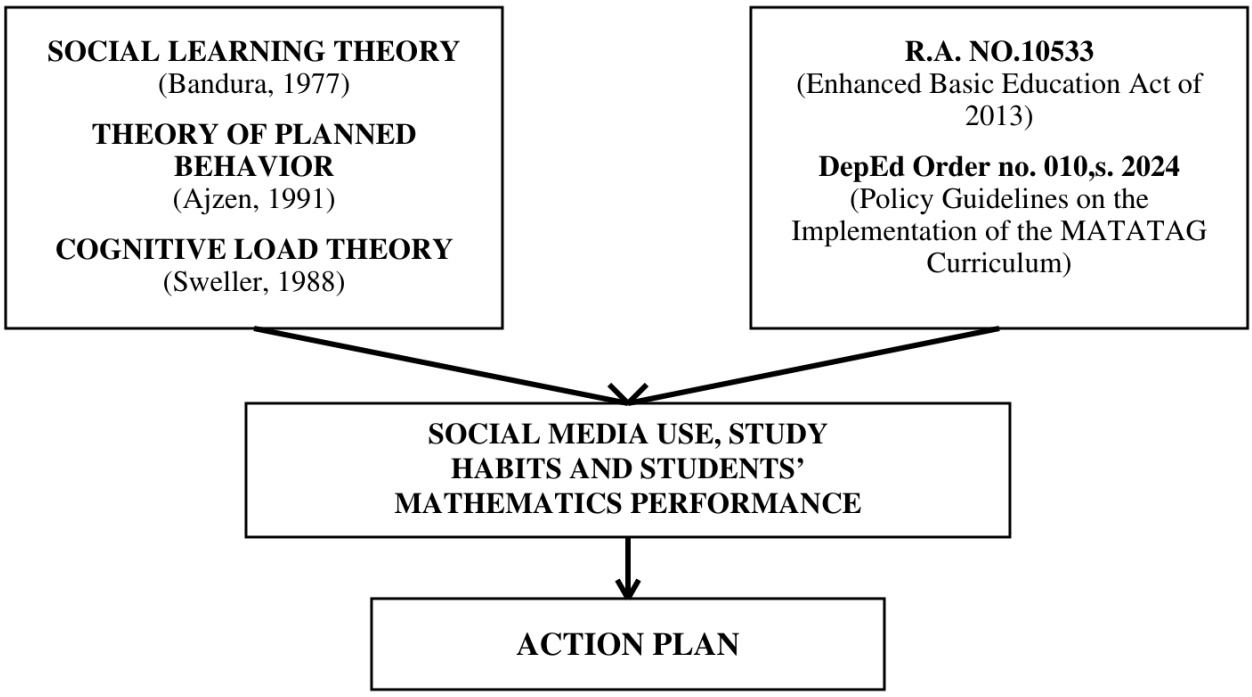


Figure 1. Theoretical–Conceptual Framework of the Study

Legal Bases

The study is also supported by the related educational policies and legal framework in the Philippines. One of which is Republic Act No. 10533 or the Enhanced Basic Education Act of 2013. This law institutionalized the K–12 Basic Education Program which aims to improve the quality of education and produce learners with the needed competencies including critical thinking and problem-solving skills in mathematics. The law stresses the need to improve learning outcomes and to address the issues that affect academic success.

This study is also legally anchored on DepEd Order No. 010, s. 2024 which provides for policy guidelines on the implementation of the MATATAG Curriculum. The policy implies that the

Filipino learners' learning gap must be addressed by improving their basic literacy and numeracy skills. Grasping factors such as social media use and study habits is in line with enhancing mathematics achievement and making sure that students fulfill curriculum standards.

Related Literature and Studies

Social media use is defined as how often people used online platforms for communication, interaction, sharing content, and consuming information. It is also defined as the internet-based applications that enabled the production and sharing of user produced material (Kaplan & Haenlein, 2010). Social media platforms provided opportunities for collaboration, communication, and networking; however, they could also serve as sources of distraction when not used properly.

Studies have shown that the more time students spend on social networking sites for non-academic purposes, the worse their academic performance becomes. Junco (2012) argues that being too involved may have reduced the amount of time students had to study and complete schoolwork. Similarly, frequent users of social networking sites tended to have lower grade point averages than non-users.

Others, however, have argued that social media can be a good contributor to learning if it is used for academic purposes. Tess (2013) pointed out that social media can facilitate communication, collaboration and engagement in learning environments. There may have been academic benefits when students used social media to discuss lessons, share resources, and collaborate on projects.

The reviewed literature distinguishes educational social media use from excessive or non-academic engagement. Study habits concern the practices and strategies students use to support learning. Time management, concentration, and regular review have been associated with academic performance (Credé & Kuncel, 2008). These literature-based associations provide context rather than evidence of an effect within the present cohort.

Gettinger and Seibert (2002) stressed that effective study habits involve organization, goal setting, rehearsal, and monitoring comprehension. These strategies helped learners remember information and use knowledge on tests.

The study habits were particularly important in mathematics where mastery was a matter of practice and repetition in problem solving. Zimmerman (2002) stressed the importance of self-regulated learning where students are actively involved in planning, monitoring and evaluating their own learning processes. Students who were self-regulated were more likely to do well in analytical subjects such as mathematics. In contrast, poor study habits may result in incomplete understanding of lessons and poor problem-solving skills and eventually affect mathematics performance.

As the use of digital technology in the daily lives of students is increasing, many researchers have examined the relationship between social media use and academic performance. Empirical studies of recent years have provided useful insights into this relationship. First, Zhao (2021) found that the higher the addiction of students to social media, the lower the academic performance. The study also indicated that students who were heavy users of social networking sites had higher levels of stress, and this stress affected their academic performance. Social media use was linked to lower academic performance in students with poor mental health and low meaningful learning, according to Zhang et al. (2024). According to the findings, unregulated social media use poses academic risks.

Other studies indicate social media isn't always bad. As Sakhieva et al. (2024) point out, social media can foster student engagement and learning if intentionally used for educational purposes. These platforms provide a chance for students to collaborate with classmates, exchange academic information, and get to learning resources. The study also showed that the intentional use of social media platforms increased access to educational materials and encouraged cooperative learning. Thus, the way in which people use social media and why is more important than the amount of time they spend on it.

Sultana (2020) reported an association between disciplined study habits, regular review, and academic performance. The study-habits literature provides a rationale for examining students' routines alongside their mathematics grades, without assuming that study habits are the strongest predictor in the present cohort.

Recent studies have further corroborated these conclusions. For example, Lourenço & Paiva (2024) found out that students who planned and managed their study time well showed much better academic performance. The researchers stressed the importance of self-regulated learning and time management as tools that help students stay focused on academic tasks and meet their learning objectives. In addition, these skills were found to have a positive effect on students' performance in mathematics and other academic subjects.

Additionally, Hyasinth & Albina (2024) found that students exhibiting self-regulated learning behaviors such as goal setting, self-monitoring, and self-reflection had better academic performance in mathematics than other students. Self-regulated learners were better able to motivate themselves and to overcome learning difficulties and remain focused on solving mathematical problems. This further strengthened the notion that a strong academic discipline may help students control distractions, including those caused by excessive social media use, and maintain higher levels of academic performance.

The reviewed studies describe a context-dependent relationship among social media use, study habits, and academic performance. Unregulated engagement may be associated with distraction, while educational use may support collaboration. The present study contributes a local examination of two bivariate associations among Grade 10 students and uses the descriptive findings to inform an action plan; it does not estimate a joint predictive model.

THE PROBLEM

Statement of the Problem

This research assessed the social media use, study habits, and mathematics performance of the Grade 10 students at Bunga National High School in the Division of Toledo City for the school year 2025–2026 as a basis for a proposed action plan.

Specifically, this study sought to answer the following queries:

1. What is the profile of the respondents in terms of:

1.1 age and gender,

1.2 parents' highest educational attainment, and

1.3 combined family monthly income?

2. As perceived by the respondents, what is their level of social media use in terms of:

2.1 social media passive, and

2.2 social media active?

3. What is the level of study habits of the respondents?

4. What is the level of mathematics performance of the respondents?

5. Is there a significant relationship between the:

5.1 respondents' social media usage and their mathematics performance,

5.2 respondents' study habits and their mathematics performance?

6. Based on the findings, what action plans may be proposed?

Statement of the Null Hypotheses

Based on the objectives of the study, the following null hypotheses were tested at the 0.05 level of significance:

Ho1: There is no significant relationship between the respondents' social media usage and their mathematics performance.

Ho2: There is no significant relationship between the respondents' study habits and their mathematics performance.

Significance of the Study

This study examined associations between social media use, study habits, and Mathematics performance to inform responsible digital behavior and academic support. Its findings provide a local descriptive basis for the proposed action plan rather than evidence that either measured variable caused changes in grades.

DepEd Officials. The findings may inform consideration of digital literacy, balanced technology use, and mathematics-support initiatives. The proposed activities require evaluation before their effects on achievement can be established.

School Administrators. The findings may guide school-based support for study routines and responsible social media use, including seminars, workshops, monitoring, and identification of learners needing mathematics support.

Teachers. The study describes learners' social media engagement and study behaviors alongside their mathematics grades. These descriptive findings may inform guidance on concentration, time management, independent practice, and balance between digital activities and academic responsibilities.

Students. The findings may encourage reflection on digital engagement and study routines and support efforts to manage time, minimize distractions, and use productive study strategies. The study does not demonstrate that such changes caused higher grades.

Researchers. This study contributed to the existing body of knowledge by providing empirical data on the relationship between social media use, study habits, and mathematics performance. It served as a reference for researchers conducting similar studies in related fields, particularly in educational research and digital behavior studies.

Future Researchers. This study served as a foundation for further investigations on other variables that influenced mathematics performance. Future researchers may replicate this study in different grade levels, subject areas, or educational contexts, or develop intervention programs based on the findings to improve academic outcomes.

Methodology

Research Design

The study used a descriptive-correlational design to describe students' social media use, study habits, and Mathematics performance and examine their bivariate relationships without manipulating conditions (Sousa et al., 2007; Creswell, 2014). The title's academic discipline construct was operationalized through the study-habits questionnaire. Two Pearson correlations were reported; no regression or joint predictive model was supplied.

Flow of the Study

The conceptual framework of this study was anchored on the Input-Process-Output (IPO) Model which presented a systematic flow of how the variables were examined and how the results were generated. This framework illustrated the relationship between the independent variables, which were social media use and study habits, and the dependent variable, which was mathematics performance. The IPO model was used as a guide in understanding how the identified inputs were processed through research procedures to develop meaningful outputs.

The process involved questionnaire administration, collection of third-quarter Mathematics grades from official records, data organization and tabulation, descriptive summaries, and Pearson

correlation analysis. The analysis described the variables and their bivariate associations; it did not evaluate an intervention or fit a joint predictive model.

The output stage used the descriptive findings and correlation results to formulate conclusions, recommendations, and an action plan addressing mathematics support, study routines, and responsible social media use. The proposed activities' effects on Mathematics performance were not measured by the reported analysis.

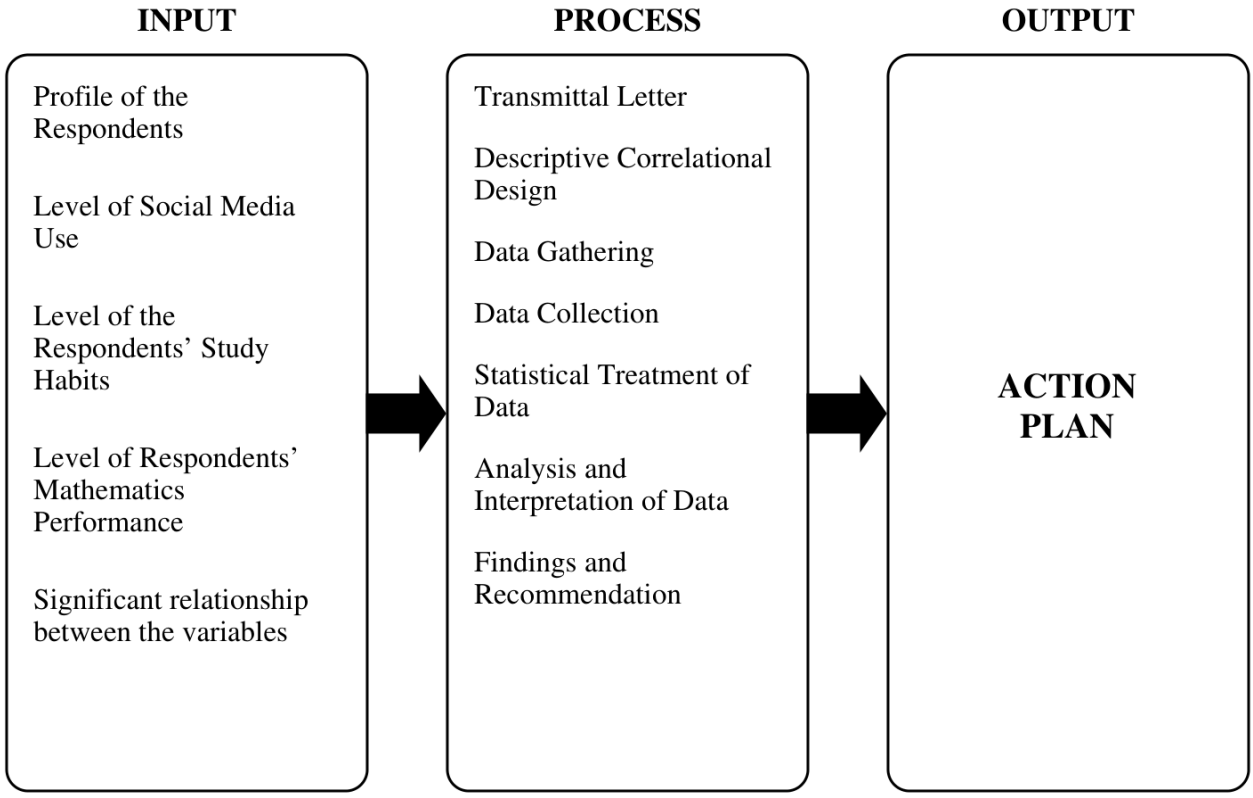


Figure 2. Input–Process–Output Model of the Study

Research Environment

The study was conducted at Bunga National High School, Barangay Bunga, Toledo City, Cebu during School Year 2025 – 2026. The school was established to provide accessible secondary education to the learners of the upland and neighboring communities of the City of Toledo. Since its establishment, it has been a major Learning Center committed to producing academically sound and socially responsible students.

Bunga National High School is located at a distance of about two (2) kilometers from the Toledo–Naga National Highway and about sixteen (16) kilometers from the Poblacion of Toledo City. The school can be accessed by different land transportation modes through the access road from Barangay Poog to Lamac, Pinamungajan, Cebu. However, there were no direct public utility jeepney routes from the city proper to the school, which shows the geographical challenges faced by some learners in getting access to education.

For School Year 2025-2026, the school provided Junior High School (JHS) and Senior High School (SHS) programs with a total population of around 367 students. The institution offered several academic and technical-vocational specializations at the Senior High School level such as Humanities and Social Sciences (HUMSS), Science, Technology, Engineering and Mathematics (STEM), Computer Systems Servicing (CSS), Home Economics (Dressmaking), Electrical Installation and Maintenance (EIM), Food Processing and Bread and Pastry Production (BPP). These specializations were indicative of the school's emphasis on making sure students are imparted with academic knowledge and practical skills that are in line with industry requirements.

The school had 11 classrooms for instruction and was supported by a dedicated group of faculty members composed of teachers assigned to Junior and Senior High School levels. These educators were critical in providing quality education even when resources were scarce.

Over the years, Bunga National High School has been actively involved in numerous academic and co-curricular activities in district and division levels that contribute to the all-round development of its learners. The school continued to pursue its quest for excellence through curriculum implementation, instructional innovation and active involvement in DepEd programs.

Given its setting, available programs, and student population, Bunga National High School provided an appropriate and relevant environment for examining the relationship among social media use, study habits, and mathematics performance among Grade 10 students.



Figure 3. Research Environment

Respondents and Sampling

The study included all 59 Grade 10 students enrolled at Bunga National High School in School Year 2025–2026 through total enumeration. Respondents were enrolled in Mathematics, used social media, and completed the questionnaire. Total enumeration covers this target cohort; it does

not itself eliminate measurement, response, or coverage bias or establish generalizability beyond the school.

Table 1. Distribution of the Respondents

Sections	N	%
Sagittarius	31	52.54
Scorpio	28	47.46
Total	59	100.00

Research Instruments

This research utilized a three-part survey questionnaire to assess the variables investigated in this study.

Part I. This part elicited information on the profile of the respondents in terms of their age, gender, parents' highest educational attainment, and combined family monthly income

Part II. The survey questionnaire administered in this part was adapted from Ozimek et al. (2022) and measured respondents' social media use. This section contained statements measuring two dimensions of social media engagement, social media passive use and social media active use. Passive use of social media included activities such as viewing profiles, reading posts, browsing newsfeeds, and looking at photos or comments without interacting or creating content directly. Conversely, social media active use involved posting photos, sharing links or videos, creating groups or events, responding to invitations, and other activities that involved direct participation and content generation. Respondents indicated their level of agreement with each statement on a 5-point Likert scale: 1 – Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly Agree. The responses were quantified and analyzed using weighted mean and standard deviation to determine the overall level of social media use of the respondents.

Part III. An instrument adapted from Charles-Ogan and Alamina (2014) assessed study habits in Mathematics, including time management, concentration, problem-solving behavior, and study routines. Responses were scored on a five-point scale. The instrument description specifies agreement anchors, whereas the scoring procedure specifies frequency anchors; the administered response anchors and any reverse coding are not established by the available documentation.

The questionnaire did not collect the respondents' mathematics performance. It was based on the Third Quarter Mathematics grades obtained from the official school records upon approval of the school authorities. The grades were interpreted using the Department of Education (DepEd) grading scale. Instrument validation and reliability checking were described, but no reliability coefficient, pilot sample size, or validation results were available for independent assessment.

Data Gathering Procedures

Preliminary Stage. The researcher prepared a letter addressed to the Schools Division Superintendent requesting permission to conduct the study. Upon approval, letters were submitted to the School Principal. The researcher explained the purpose, objectives, and procedures of the study.

Data Gathering Stage. After approval, the researcher coordinated with the advisers and mathematics teachers regarding the schedule of questionnaire administration. The respondents were oriented about the study and were assured of confidentiality. Informed consent was secured before distributing the questionnaires. Sufficient time was given to answer the questionnaires, which were collected immediately after. The researcher then gathered the third quarter mathematics grades from official school records with proper authorization.

Post Data Gathering Stage. After collecting the data, the researcher sorted, encoded, tabulated, and statistically treated the responses. The data were analyzed and interpreted according to the objectives of the study. The findings were used as the basis for the proposed action plan.

Ethical Considerations

Parental consent and student assent were obtained before participation. Participation was voluntary, students could withdraw without penalty, and participation carried no academic or grading consequences. Identification codes were used in place of names, and the data were kept confidential for academic use under the stated privacy provisions of Republic Act No. 10173. The stated retention period was one year after study completion; the timing and completion of disposal were not established in the reported procedures. No ethics committee or institutional review board approval details were supplied.

Statistical Analysis

Frequency Count. This tool was used to determine the number of respondents in each category of their profile variables such as age, gender, parents' highest educational attainment, and combined family monthly income. It was the simplest statistical tool used to organize raw data into meaningful categories. This tool helped describe the distribution of respondents across different categories.

Percentage. This tool was used to determine the proportion of respondents in each category relative to the total number of respondents. This made the distribution easier to interpret and compare. This was used in presenting the profile of the respondents in tabular form.

Weighted Mean. This tool was used to determine the level of the respondents' social media use and level of respondents' study habits. The weighted mean was used to determine the level of social media use (passive and active) and the level of study habits of the respondents. Since the responses were measured using a 5-point Likert scale, the weighted mean was appropriate to determine the average response for each variable. The computed means were interpreted using the scoring scale provided in the Scoring Procedure section.

Standard Deviation. This tool was used to measure the spread of the responses of the respondents on the statements of the questionnaires assessing the respondents' social media use and study habits. This tool helped determine the consistency of responses regarding social media use and study habits.

Pearson correlation was used to examine the linear association between social media use and Mathematics performance and between study habits and Mathematics performance. Two-sided p-values were compared with $\alpha = .05$ to determine whether to reject or not reject each null hypothesis. A nonsignificant test does not establish equivalence or the absence of an effect.

Scoring Procedures

Social media items used a five-point agreement scale from 1 (Strongly Disagree) to 5 (Strongly Agree). Mean scores were interpreted with the descriptive categories in Table 2. These ratings describe agreement with the listed activities; they are not direct measurements of daily hours, frequency counts, or problematic-use diagnoses.

Table 2. Social Media Use Rating Scale

Scale	Numerical Rating	Descriptive Rating	Verbal Interpretation
5	4.21-5.00	Very High (VH)	The student uses social media very frequently for various activities such as communication, entertainment, and information sharing, showing strong engagement in both passive and active use.
4	3.41-4.20	High (H)	The student frequently uses social media platforms for communication, browsing, and content sharing.
3	2.61-3.40	Moderate (M)	The student sometimes uses social media but limits engagement to certain activities or specific periods of time.
2	1.81-2.60	Low (L)	The student seldom uses social media and participates in limited online activities.
1	1.00-1.80	Very Low (VL)	The student rarely or almost never uses social media platforms.

Study-habits scores were interpreted with the numerical ranges and descriptive categories shown in Table 3. The scoring procedure specifies 5 – Always, 4 – Often, 3 – Sometimes, 2 – Rarely, and 1 – Never; the instrument description above instead specifies agreement anchors.

Table 3. Study Habits Rating Scale

Scale	Numerical Rating	Descriptive Rating	Verbal Interpretation
5	4.21-5.00	Very High (VH)	The student consistently demonstrates strong and effective study habits such as regular review, time management, concentration during study sessions, and completion of academic tasks.
4	3.41-4.20	High (H)	The student frequently demonstrates good study habits and generally manages study time and academic tasks effectively.
3	2.61-3.40	Moderate (M)	The student sometimes demonstrates good study habits but may occasionally experience difficulties in managing study time or maintaining focus.
2	1.81-2.60	Low (L)	The student seldom demonstrates effective study habits and often struggles with time management or task completion.
1	1.00-1.80	Very Low (VL)	The student rarely demonstrates effective study habits and shows minimal effort in organizing or completing study tasks.

The Mathematics Performance Rating Scale determined the respondents' academic performance based on their Third Quarter Mathematics grades obtained from the official records of the school. The grades were interpreted based on the standard grading system prescribed by the Department of Education. Each grade range was given a descriptive rating reflecting the degree of mastery of mathematical concepts and skills demonstrated by the students. The rating scale served to categorize the level of performance of the respondents in a clear and systematic way and to use such categorizations in the determination of the relationship between mathematics performance, social media use and study habits.

Table 4. Mathematics Performance Rating Scale

Scoring Range	Descriptive Rating	Verbal Interpretation
90-100	Outstanding	The student demonstrates exceptional mastery of mathematical concepts and consistently performs beyond expected standards.
85-89	Very Satisfactory	The student demonstrates strong understanding of mathematical concepts with only minimal errors in performance tasks and assessments.
80-84	Satisfactory	The student demonstrates adequate understanding of mathematical concepts and meets the required academic standards.
75-79	Fairly Satisfactory	The student shows basic understanding of mathematical concepts but needs improvement in certain skills and problem-solving abilities.
below 75	Did not Meet the Expectations	The student demonstrates limited understanding of mathematical concepts and requires academic intervention and additional support.

Operational Definitions

Action Plan. This refers to the output of the study which set of recommended programs, strategies, and interventions proposed by the researcher based on the findings of the study to improve students' mathematics performance and guide proper social media use and study habits.

Mathematics Performance. This refers to the performance of the respondents in the mathematics for the Third Quarter.

Social Media Active. This refers to the respondents' engagement in participatory activities on social media platforms such as posting photos, sharing links or videos, creating groups or events, responding to invitations, and other forms of direct interaction.

Social Media Passive. This refers to the respondents' engagement in viewing or browsing activities on social media platforms such as reading posts, checking profiles, viewing photos, and scrolling through newsfeeds without directly posting or interacting.

Social Media Use. This refers to the overall level of engagement of the respondents in social media activities, including both passive and active behaviors, as measured by the adopted questionnaire.

Study Habits. This refers to the learning practices, routines, and strategies employed by the respondents in studying Mathematics, including time management, concentration, problem-solving behavior, and preparation for assessments, as measured by the Students' Study Habit Assessment Scale.

Results and Discussion

Respondent Profiles

Table 5. Age and Gender of the Respondents

Age (years)	Female f	Female %	Male f	Male %	Total f	Total %
17 and above	1	1.69	5	8.47	6	10.17
16	9	15.25	6	10.17	15	25.42
15	21	35.59	17	28.81	38	64.41
Total	31	52.54	28	47.46	59	100.00

The cohort included 31 female students (52.54%) and 28 male students (47.46%). Most were 15 years old (38; 64.41%), followed by 16-year-olds (15; 25.42%) and students aged 17 or above (6; 10.17%). These profile data do not establish that age or gender explains differences in social media use or Mathematics performance.

Table 6. Parents' Highest Educational Attainment

Educational Attainment	Mother f	Mother %	Father f	Father %
College Graduate	4	6.78	2	3.39
College Level	8	13.56	7	11.86
High School Graduate	23	38.98	18	30.51
High School Level	10	16.95	12	20.34
Elementary Graduate	7	11.86	11	18.64
Elementary Level	7	11.86	9	15.25
Total	59	100.00	59	100.00

High school graduation was the most common educational category for mothers (23; 38.98%) and fathers (18; 30.51%). These categories were pluralities rather than majorities. Four mothers (6.78%) and two fathers (3.39%) were college graduates. Parental education is descriptive here; no profile–performance association was tested.

Table 7. Combined Family Monthly Income

Monthly Income (in pesos)	f	%
above 30,000	2	3.39
25,001-30,000	0	0.00
20,001-25,000	1	1.69
15,001-20,000	8	13.56
10,001-15,000	8	13.56
10,000 and below	40	67.80
Total	59	100.00

Forty respondents (67.80%) reported monthly family income of ₱10,000 or below. The ₱10,001–15,000 and ₱15,001–20,000 groups each included eight respondents (13.56%). Two (3.39%) reported income above ₱30,000, one (1.69%) reported ₱20,001–25,000, and none reported ₱25,001–30,000.

Social Media Use

Table 8. Passive Social Media Use

Item	Indicator	WM	SD	Description
1	I look at the photo albums of the other users.	3.00	1.00	Moderate
2	I look at the profiles/pages of other users, or read through them.	3.10	1.21	Moderate
3	I look at the stories of my friends/my subscriptions.	3.83	1.05	High
4	I read private messages that other users send me.	3.58	1.35	High
5	I read entries on the chronicles and personal pages of other users.	3.15	1.28	Moderate
6	I read through the comments on other users' pictures.	3.32	1.24	Moderate
7	I read the comments on my own pictures.	4.17	1.02	High
8	I look at links or video clips posted on other	3.66	1.20	High

	people's profile pages.			
9	I look at the profile pages of my relatives.	3.71	1.03	High
10	I look at the newsfeed to see the latest activities of other users.	3.42	1.16	High
11	I read entries in my own chronicle.	3.63	1.20	High
	Aggregate Weighted Mean	3.51		High
	Mean of displayed item SDs		1.16	—

Legend: 4.21-5.00-Very High; 3.41-4.20-High; 2.61-3.40-Moderate;1.81-2.60-Low;1.00-1.80-Very Low

Note. WM = weighted mean; SD = standard deviation. The mean of item SDs is a descriptive average of item variability and is not the SD of a respondent-level composite score.

Passive use had a mean of 3.51 (High). Reading comments on one's own pictures received the highest item mean (4.17), while looking at other users' photo albums received the lowest (3.00). Items 1, 2, 5, and 6 were Moderate, and the remaining items were High.

Table 9. Active Social Media Use

Item	Indicator	WM	SD	Description
1	I create events or invite users to events.	3.07	1.05	Moderate
2	I post links or video clips myself.	3.36	1.19	Moderate
3	I post photos with my family.	3.90	1.05	High
4	I create groups.	3.75	1.11	High
5	I post photos.	3.86	1.01	High
6	I respond to event invitations.	3.39	1.27	Moderate
7	I create highlights.	3.39	1.05	Moderate
	Aggregate Weighted Mean	3.53		High
	Mean of displayed item SDs		1.10	—

Legend: 4.21-5.00-Very High; 3.41-4.20-High; 2.61-3.40-Moderate;1.81-2.60-Low;1.00-1.80-Very Low

Note. WM = weighted mean; SD = standard deviation. The mean of item SDs is a descriptive average of item variability and is not the SD of a respondent-level composite score.

Active use had a mean of 3.53 (High). Posting photos with family received the highest item mean (3.90), and creating events or inviting users to events received the lowest (3.07). Items 3, 4, and 5 were High; items 1, 2, 6, and 7 were Moderate.

Table 10. Summary of Respondents' Level of Social Media Use

Component	WM	Mean of item SDs	Description
Social Media Passive	3.51	1.16	High
Social Media Active	3.53	1.10	High
Grand Weighted Mean	3.52		High
Mean of component item-SD averages		1.13	—

The reported overall mean was 3.52 (High). The value 1.13 is the average of the two reported component item-SD averages, not a composite-score SD. Passive and active means differed descriptively by 0.02; no significance test of that difference was supplied.

Study Habits

Table 11. Level of Study Habits of the Respondents

Item	Indicator	WM	SD	Description
1	I study mathematics even when I am very tired.	2.88	0.95	Moderate
2	I study mathematics first by deciding what area to study.	2.98	0.88	Moderate
3	I study mathematics for about 50 minutes and then take about ten minutes break before starting again.	2.93	1.06	Moderate
4	I practice mathematics always with textbook.	2.80	1.05	Moderate
5	I study mathematics with a friend(s), quiz each other, compare notes and predict test question.	2.98	1.17	Moderate
6	In solving a problem, I pay much attention to details.	3.51	1.07	High
7	I study mathematics for a very long period without regard to my time table.	2.78	1.04	Moderate
8	I feel good when I solve mathematics problems by myself.	3.32	1.17	Moderate
9	I study mathematics with a high level of concentration.	3.15	1.20	Moderate
	Aggregate Weighted Mean	3.04		Moderate
	Reported summary SD (method unconfirmed)		1.06	—

Legend: 4.21-5.00-Very High; 3.41-4.20-High; 2.61-3.40-Moderate; 1.81-2.60-Low; 1.00-1.80-Very Low

Study habits had an aggregate mean of 3.04 (Moderate). Paying attention to details in problem solving was the highest-rated item (3.51; High), while studying for a long period without regard to a timetable was the lowest (2.78; Moderate). All other items were Moderate. The reported summary variability value, 1.06, is not established as a composite-score SD.

Mathematics Performance

Table 12. Level of Mathematics Performance of the Respondents

Level	Numerical Range	f	%
Outstanding	90-100	19	32.20
Very Satisfactory	85-89	16	27.12
Satisfactory	80-84	11	18.64
Fairly Satisfactory	75-79	13	22.03
Did not Meet the Expectations	Below 75	0	0.00
Total		59	100.00
Mean		85.53	
SD		5.77	

Outstanding was the largest performance category (19; 32.20%), followed by Very Satisfactory (16; 27.12%), Fairly Satisfactory (13; 22.03%), and Satisfactory (11; 18.64%). No respondent was below 75. The reported mean grade was 85.53 (Very Satisfactory), with a reported SD of 5.77. The group's mean classification does not mean that most individual students were in the Very Satisfactory category.

Relationships with Mathematics Performance

Table 13. Social Media Use and Mathematics Performance

Variables	r-value	Strength of Correlation	p - value	Decision	Result
Social Media Usage and Mathematics Performance	0.079	Negligible Positive	0.552	Do not reject Ho	Not Significant

*significant at p<0.05 (two-tailed)

The reported association between social media use and Mathematics performance was positive but small ($r = 0.079$, $p = 0.552$). At $\alpha = .05$, the null hypothesis was not rejected. This does not establish that social media has no effect on Mathematics performance.

Table 14. Study Habits and Mathematics Performance

Variables	r-value	Strength of Correlation	p - value	Decision	Result
Study Habits and Mathematics Performance	0.218	Negligible Positive	0.097	Do not reject Ho	Not Significant

*significant at p<0.05 (two-tailed)

The reported association between study habits and Mathematics performance was positive ($r = 0.218$, $p = 0.097$). At $\alpha = .05$, the null hypothesis was not rejected. Statistical nonsignificance is not proof of no relationship, no effect, or equivalence.

Discussion

The results describe high passive and active social media use, moderate study habits, and a Very Satisfactory mean Mathematics grade within this single-school cohort. Passive browsing and active participation may serve different purposes. The reviewed literature distinguishes general engagement from collaborative academic use and indicates that context matters (Dimacangun & Guillena, 2023; Liu et al., 2022; Godard & Holtzman, 2024). The present questionnaire results do not isolate the effects of educational and non-educational social media use.

Neither reported Pearson test reached the .05 significance threshold. This supports non-rejection of the two null hypotheses within the reported analysis, rather than the conclusion that the variables have no bearing on performance. Other influences were discussed in the literature (Datu & Yang, 2021; Alhadabi & Karpinski, 2020), but were not tested as explanatory factors in this study. A joint predictive model was not reported.

The Moderate study-habits rating identifies a descriptive support priority even though the bivariate correlation was not significant. The source's discussion of practice testing, distributed practice, and active retrieval (Dunlosky et al., 2013), together with variation in the quality of study behavior (Credé & Kuncel, 2008; Nonis & Hudson, 2010), informs the proposed support activities. Their effectiveness cannot be inferred from this cross-sectional correlation analysis.

Output of the Study

High passive and active social media ratings and Moderate study habits informed the supplied action plan's emphasis on balanced digital engagement, structured study routines, concentration, and problem-solving practice. The Very Satisfactory mean grade and the distribution across performance categories also informed remediation and enrichment activities intended to strengthen Mathematics learning.

The two nonsignificant correlations do not establish that the proposed activities will improve grades. The action plan specifies objectives, strategies, participants, budgets, funding sources, schedules, expected outcomes, and source-reported accomplishments. The accomplishment entries

and “Successfully implemented” remarks are retained as reported implementation claims. Their sequence relative to the study’s third-quarter data collection and their measured effects were not documented by a separate intervention evaluation.

Intervention Plan

Rationale

Teachers identify learners who require support as well as those who perform well. The Moderate study-habits rating provides a descriptive basis for supporting routines, concentration, and mathematics practice. The proposed activities also address potential digital distractions, without assuming that social media use caused lower grades in this cohort.

Mathematics is often considered as a challenging subject due to its abstract nature and the need for continuous practice and understanding of concepts. Students who do not develop effective study habits may find it difficult to keep up with the lessons. At the same time, excessive use of social media may interrupt students’ focus and reduce the time allotted for studying.

Neither correlation reached the .05 significance threshold. This result does not rule out possible relationships or establish intervention effectiveness. The plan nevertheless proposes guidance on time management, study routines, and responsible social media use as educational support priorities.

Students’ academic challenges have been observed over the years and it is important that this concern will be addressed in order to further improve students’ performance and prevent possible learning difficulties.

Objectives

The action plan proposes the following objectives:

Increase students’ performance in Mathematics;

Improve students’ study habits, particularly time management and concentration;

Promote responsible and balanced use of social media;

Develop students’ self-discipline in managing academic tasks; and

Increase students’ participation and engagement in learning.

Scheme of Implementation

The scheme provides for presenting the action plan to the school principal, guidance coordinator, and teachers; sharing findings during meetings or in-service training; providing copies of suggested activities; and monitoring implementation. The matrix also records accomplishment claims dated June–December 2025. Those entries are distinguished from the proposed procedures because their timing relative to data collection and evidence of evaluated outcomes are not established in the reported study.

Table 15. Action Plan — Mathematics Academic Performance

Field	Details
Areas of Concern	Mathematics Academic Performance
Objectives	To further improve Mathematics performance and increase number of students reaching Outstanding level
Strategies	- Conduct remediation and enrichment classes - Implement differentiated instruction - Provide weekly problem-solving drills - Use formative assessments and feedback sessions
Persons Involved	Teachers, School Head, Students
Budget	P10,000.00

Source of Budget	School MOOE
Time Frame	June – August 2025
Expected Outcome	Increased number of Outstanding learners; improved mastery of competencies
Actual Accomplishment	Conducted remediation and enrichment sessions among identified learners. Weekly problem-solving drills and formative assessments were implemented. Majority of students demonstrated improved mastery of competencies and increased participation during Mathematics classes.
Remarks	Successfully implemented

Table 16. Action Plan — Social Media Passive Use

Field	Details
Areas of Concern	Social Media Passive Use
Objectives	To redirect passive social media use into academic-related engagement
Strategies	- Integrate educational social media tasks (math videos, tutorials) - Create class group chats for academic discussion - Assign reflective tasks based on math-related content
Persons Involved	Teachers, Students
Budget	P5,000.00
Source of Budget	School MOOE
Time Frame	September – October 2025
Expected Outcome	Students use social media as a learning tool
Actual Accomplishment	Educational social media activities were integrated into Mathematics learning. Class group chats were utilized for academic discussions and sharing of learning resources. Students exhibited greater engagement in accessing mathematics-related content online.
Remarks	Successfully implemented

Table 17. Action Plan — Social Media Active Use

Field	Details
Areas of Concern	Social Media Active Use
Objectives	To enhance productive and collaborative use of social media
Strategies	- Organize online math challenges - Encourage posting of math solutions/videos - Conduct online peer tutoring activities
Persons Involved	Teachers, Students, ICT Coordinator
Budget	P5,000.00
Source of Budget	School MOOE
Time Frame	November 2025
Expected Outcome	Increased academic participation in online platforms
Actual Accomplishment	Online mathematics challenges, peer tutoring, and student-generated mathematics solution posts were conducted. Students actively participated in collaborative online learning activities.
Remarks	Successfully implemented

Table 18. Action Plan — Study Habits (Time Management and Discipline)

Field	Details
Areas of Concern	Study Habits (Time Management and Discipline)
Objectives	To improve study habits and structured routines
Strategies	- Conduct study skills seminars - Provide study schedule templates - Implement guided study sessions - Encourage use of textbooks
Persons Involved	Teachers, Guidance Counselor/ Guidance Designate, Students
Budget	P10,000.00
Source of Budget	School MOOE
Time Frame	November – December 2025
Expected Outcome	Improved consistency in study routines
Actual Accomplishment	Study skills seminars and guided study sessions were conducted. Students were provided with study schedule templates and were encouraged to follow structured study routines. Improvement in students' time management and study discipline was observed.
Remarks	Successfully implemented

Table 19. Action Plan — Study Habits (Concentration and Problem Solving)

Field	Details
Areas of Concern	Study Habits (Concentration and Problem Solving)
Objectives	To enhance concentration and independent problem-solving skills
Strategies	- Conduct focus and mindfulness exercises - Provide structured problem-solving activities - Use gamified math tasks - Provide conducive study environment
Persons Involved	Teachers, Students
Budget	P5,000.00
Source of Budget	School MOOE
Time Frame	November – December 2025
Expected Outcome	Improved focus and engagement in math learning
Actual Accomplishment	Focus-building activities, structured problem-solving tasks, and gamified mathematics activities were implemented. Students demonstrated improved concentration during learning sessions and greater confidence in solving mathematical problems independently.
Remarks	Successfully implemented

Conclusion

Among the 59 Grade 10 respondents, neither social media use nor study habits showed a statistically significant linear association with third-quarter Mathematics performance at $\alpha = .05$. The null hypotheses were not rejected. These findings do not establish that the variables have no bearing on performance or identify the causes of students' grades.

High passive and active social media ratings, Moderate study habits, and a Very Satisfactory mean Mathematics grade informed the action plan's educational priorities. The study's descriptive-correlational design does not establish causal effects, and the reported associations do not evaluate the effectiveness of the proposed activities.

Motivation, teaching strategies, learning environment, cognitive ability, and respondent-profile characteristics were discussed as possible considerations, but their relationships with grades were not tested in the supplied analysis. Further evaluation is needed before attributing performance differences or intervention outcomes to these factors.

Recommendations

In the light of the findings of the study, it is highly recommended that the proposed action plan to improve the mathematics performance, study habits and responsible social media use of the respondents be adopted.

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