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The Influence of Social Media Use and Academic Perseverance on the Research Knowledge among Grade 12 Students

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ABSTRACT: Students today are expected to have research knowledge as part of their academic preparation and curriculum, with perseverance and social media use recognized as key factors that shape the development of these competencies. This study examined the influence of students' academic perseverance and social media use with their research knowledge. Employing a quantitative research design with regression analysis, data were gathered from 236 Grade 12 students using a validated survey questionnaire. Data were analyzed using descriptive statistics including Mann Whitney test, Kruskal Wallis test, Spearman correlation, and linear regression. The findings showed that the majority of respondents were female, enrolled in the STEM strand, and primarily preferred Facebook as their social media platform. Overall, the extent of social media use was rated high, while academic perseverance was generally assessed as very high. In terms of research knowledge, students demonstrated average proficiency. Significant differences were observed in academic perseverance when grouped based on sex and academic strand. Results also show that only academic perseverance shows a significant influence on research knowledge. Hence, the study affirms that while social media use plays only a minimal role, academic perseverance remains a crucial determinant in strengthening the research knowledge of Grade 12 students, highlighting the importance of fostering determination, resilience, and effective time management in senior high school education.

KEYWORDS: Determination, Digital Skills, Literature Review, Resilience, Research Methodology, Time Management.

INTRODUCTION

Research knowledge is one of the important parts of 21st-century skills. It prepares the students to become more actively involved in their education, improving their academic performance and preparing them for college and future employment (Vacalares et al., 2023). Research knowledge helps students enhance their critical thinking skills, gather and analyze material, and articulate their views clearly (Nedjai, 2023). Additionally, research knowledge is essential for students that help them develop important academic abilities and encourage a culture of curiosity and intellectual discipline from an early stage (Kappal, 2023).

However, the growing inclusion of social media has become a popular force that has changed how people live beyond the global scale. As of 2025, there are over 5.24 billion active social media users worldwide, with at least 60% of the global population hooked on platforms like Facebook, Instagram, Twitter, and TikTok (Kemp, 2025). Ohara (2023) emphasized that social media has become a significant platform for communication and collaboration. A study has even noted that young people's overuse of social media sites has produced multiple issues and concerns (Kouroupis & Vagianos (2021). This trend has similarly emerged among individuals with high levels of social media use (Gumasing et al., 2023). Hence, overreliance has indeed led to prolonged use driven by the pursuit of satisfaction and fulfillment.

Academic perseverance, a variable involving determination, resilience, and time management, is considered the cornerstone of academic success having the ability to influence research knowledge (Vestad & Tharaldsen, 2022). Accordingly, determination inspires students to stay focused on their goals despite challenges, while resilience allows them to recover from failure, learn from errors, and handle academic pressure without being discouraged. Meanwhile, effective time management allows students to schedule work, achieve deadlines, reduce pressure, and increase efficiency. These would allow students to stay motivated, overcome challenges, and excel consistently, leading to academic success (Mahnaz et al., 2022).

Nowadays, Grade 12 learners experience several challenges in cultivating research knowledge, especially using social media platforms such as Facebook, Instagram, Twitter, and TikTok that are useful for sharing information. However, they also expose learners to misinformation and trustworthy sources, making it hard to differentiate reliable content and biased information. Respondents in the study of Dimacangun and Guillena (2023) have acknowledged that the nature of social media entertainment tends to be distracting, preventing students from concentrating on research and analysis.

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In one of the private universities in Cagayan de Oro City, senior high school students have encountered research difficulties that need to be addressed. During Practical Research 1 in grade 11, second semester, students have a hard time crafting their qualitative research proposal, from problem formulation to writing review-related literature (RRL) and methodological rigor, as their final output. This dilemma has become even more difficult as they transition to grade 12, first semester, for their quantitative research in Practical Research 2.

With this, although studies have shed some light on different elements influencing research output, there is still a need to investigate how social media use and academic perseverance significantly influence research knowledge thoroughly, which is the aim of the present study. Going through relationships may provide valuable insights into how social media use and academic perseverance affect students' research knowledge and identify strategies and support for students navigating challenges that would improve learning outcomes.

METHODOLOGY

The study utilized a quantitative research design with regression analysis. Accordingly, quantitative research design is a systematic investigation that emphasizes objectivity and statistical analysis to examine relationships among variables (Creswell & Creswell, 2023). One of the private universities in Cagayan de Oro City, Philippines serves as the locale of this study, where grade 12 students serve as the respondents with a sample size of 236 students. The respondents are selected using stratified random sampling, in which the population is divided into smaller groups, called "strata," based on shared characteristics, ensuring that the population is represented proportionately in the sample, thus, increasing the validity and generalizability of results to the whole population (Zhang, 2024).

The research instrument for this study combines adapted and researcher-made instruments which were carefully validated by six experts in various fields. Also, it underwent pilot testing to 50 respondents to ensure the reliability of the instrument. Together, the expert validation and pilot reliability testing ensured that the research instrument was both accurate and dependable, thereby strengthening the credibility and trustworthiness of the study's results (Cano & Lomibao, 2023; Cano & Lomibao, 2022). Part II of the instrument was adapted from the study of AlFaris et al. (2018) that evaluates students' use of social media. Moreover, Part III is a researcher-made instrument directed toward the measurement of different dimensions of academic perseverance, such as determination, resilience, and time management. The instruments in parts II and III were all four-point Likert Scale, which describes the extent of the respondents' attitudes concerning many items on a questionnaire (Tanujaya et al., 2022). Part IV consists of a 21-item multiple-choice test that assesses the knowledge of essential research concepts in respondents. The items cover various aspects of the research process, ranging from the identification of a research problem to the selection of an appropriate research methodology.

Before analyzing the data, normality assumption and some linear regression conditions were carefully checked. Descriptive statistics including Mann Whitney test, Kruskal Wallis test, Spearman correlation, and linear regression were used to analyze and interpret the results of the data at 0.05 level of significance. After analyzing the data statistically, the researchers conducted a follow-up interview to selected respondents to strengthen and verify the quantitative results.

RESULTS AND DISCUSSION

The empirical results of this study, together with their interpretive analysis, are presented in this section to examine how social media use and academic perseverance influence research knowledge.

Profile of the respondents

The frequency and percentage distribution of the respondents according to their profile variables, namely sex, academic strand, and social media platform is found in Table 1. It provides an overview of the composition of the respondents based on these categories, serving as a descriptive summary of their demographic and behavioral characteristics.

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Table 1. Frequency and Percentage Distribution of Respondents

Profile	Category	Frequency	Percentage
Sex	Male	92	39.0
	Female	144	61.0
	TOTAL	**236**	**100**
Academic Strand	STEM	178	75.4
	HUMSS	32	13.6
	ABM	26	11.0
	TOTAL	**236**	**100**
Social Media Platform	Facebook	85	36.0
	TikTok	63	26.7
	Instagram	81	34.3
	Twitter	7	3.0
	TOTAL	**236**	**100**

The findings indicate that females constituted the majority of the sample, representing nearly two-thirds of the participants. The predominance of female respondents is consistent with general enrollment trends in many senior high school programs, where female participation often surpasses that of males in certain academic strands. In terms of academic strand, the majority were enrolled in STEM strand. This reflects the actual enrollment composition of the institution, where STEM typically attracts a larger proportion of senior high school students due to its alignment with science- and technology-related programs in higher education.

Furthermore, Table 1 suggests that while Facebook remains the most widely used platform, Instagram and TikTok are nearly as prominent, indicating a strong shift toward visually driven and interactive platforms among adolescents. This aligns with contemporary trends wherein younger generations increasingly use Instagram and TikTok for social interaction, entertainment, and even academic-related engagement, reflecting the broader digital migration from text-heavy platforms to image- and video-centric ones. The low usage of Twitter may be attributed to its emphasis on microblogging and news updates, which may be less appealing to students in this age group compared to more engaging and entertainment-oriented platforms.

Extent of the respondents' use of social media platform

The extent of use in social media platforms is shown using mean and standard deviation. The overall mean score of 2.90 with a standard deviation of 0.98 indicates that the respondents' extent of social media usage falls under the High descriptive level.

Table 2. Mean and Standard Deviation of Social Media Usage

Statement	Mean	SD	Description
1. I use social media platforms to search for research-related information or academic resources.	3.35	0.91	Very High
2. I post or share content on social media that is relevant to my research or academic work.	2.36	0.95	Low
3. I access academic websites or articles through links shared on social media.	3.04	0.91	High
4. I use social media during class sessions to support academic or research tasks.	2.61	1.02	High
5. I follow social media updates to identify potential research topics or current academic issues.	3.05	0.86	High
6. I seek advice or opinions on research topics from social media contacts or groups.	2.95	0.91	High
7. I use social media to help me stay focused and productive in studying or doing research.	2.79	0.98	High
8. I coordinate with classmates through social media for group studies or academic deadlines.	3.53	0.71	Very High
9. I prioritize academic or research activities when using social media.	2.97	0.86	High
10. I share my academic experiences or research findings on social media platforms.	2.36	0.98	Low
Overall	**2.90**	**0.98**	**High**

Legend: 3.25-4.00 (Very High); 2.50-3.24 (High); 1.75-2.49 (Low); 1.00-1.74 (Very Low)

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The findings in Table 2 implies that, on average, the Grade 12 students in the study regularly engage with social media platforms for various academic and non-academic purposes. Their responses reflect a generally strong tendency to utilize social media as part of their daily routines, particularly in areas such as searching for research-related resources, coordinating group tasks, and accessing academic information.

Follow-up interviews reinforced that students frequently rely on social media as a convenient channel for academic coordination, particularly for group studies and research tasks. As one STEM student expressed, "*because there are a lot of student uses social media, or as a media of communication so, which is also easier for us, because we can communicate, even though we are far away to each other."* These statements illustrate how social media platforms, especially Messenger, serve as accessible virtual spaces that facilitate collaboration beyond school premises.

Shafi et al. (2019) found that high school students spend several hours daily on social media, showing greater engagement than younger adolescents. This supports the present study's finding that Grade 12 students regularly use social media not only for leisure but also for academic communication and research-related activities. Similarly, Faverio et al. (2024) reported that most teenagers remain constantly online, with YouTube and other platforms serving as the most popular applications for both entertainment and information.

Respondents' perception of academic perseverance

Table 3 presents the summary of the students perceived level of academic perseverance across its three dimensions: determination, resilience, and time management. It provides an overview of how consistently students sustain effort, motivation, and discipline in accomplishing their research tasks despite various academic challenges.

Table 3. Summary Result of Academic Perseverance

Dimension	Mean	SD	Description
Determination	3.33	0.68	Very High
Resilience	3.34	0.69	Very High
Time Management	3.12	0.72	High
Overall	**3.26**	**0.70**	**Very High**

Legend: 3.25-4.00 (Very High); 2.50-3.24 (High); 1.75-2.49 (Low); 1.00-1.74 (Very Low)

The overall mean score of 3.26 with a standard deviation of 0.70 indicates that the respondents' level of academic perseverance is categorized as Very High. This implies that, on average, the students consistently demonstrate perseverance across determination, resilience, and time management. The standard deviation of 0.70 reflects a moderate variability, suggesting that while most students rated themselves very highly, there are differences in how strongly perseverance is exhibited across individuals.

On the other hand, the lowest mean was observed in Time Management, with a mean of 3.12 and a standard deviation of 0.72, which falls under the High category. This suggests that while students exhibit good time management practices, such as planning, avoiding procrastination, and balancing tasks, this area of perseverance is not as consistently strong as determination or resilience. The standard deviation of 0.72 indicates moderate variability, reflecting that some students manage time effectively while others continue to struggle with issues like procrastination and scheduling. This is supported by the follow-up interview response of an ABM student who mentioned, *"For me, I'm not really able to organize my time because I also tend to procrastinate. Once I hold my cellphone or start another task, I really lose my focus. I just can't handle multitasking. Another reason is that things become disorganized because we're given so many tasks, so some of them get forgotten, and it feels like they get pushed aside."*

Shi (2024) emphasized that perseverance is vital for sustaining effort and focus despite academic challenges, allowing students to remain engaged and complete demanding tasks such as research projects. In the same way, Hossain et al. (2022) described resilience as a protective quality that helps learners manage stress and continue working toward their goals. Tiger Campus (2023), which underscored that time management practices strengthen perseverance by helping students organize tasks effectively.

Level of research knowledge as perceived by the respondents

Table 4 presents the summary of the perceived level of research knowledge of the respondents in terms of problem formulation, literature review, and methodological rigor. The data, expressed through mean scores and standard deviations, provide

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an overview of the students' proficiency across these three core dimensions of research competency, particularly in their Practical Research 1.

Table 4. Mean and Standard Deviation of Research Knowledge

Dimension	Mean	SD	Descriptive Level
Problem Formulation	5.24	1.92	Average Proficiency
Literature Review	5.12	2.05	Average Proficiency
Methodological Rigor	4.75	2.06	Average Proficiency
Overall	**5.04**	**2.02**	**Average Proficiency**

Legend: 6.00-7.00 (High Proficiency); 3.00-5.99 (Average Proficiency); 1.00-2.99 (Low Proficiency)

Based on Table 4, the overall mean of 5.04 with a standard deviation of 2.02, described as *Average Proficiency*, indicates that the Grade 12 students possess a moderate level of research knowledge. This suggests that they have a fair understanding of the key dimensions of Practical Research 1 such as problem formulation, literature review, and methodological rigor, but still require further improvement to reach higher proficiency. The relatively large standard deviation shows that students vary considerably in their level of research knowledge, with some demonstrating stronger comprehension and others showing weaker grasp of research concepts and processes. Overall, this result implies that while students have acquired essential research knowledge, continuous instruction, guided practice, and exposure to actual research experiences are necessary to further strengthen their proficiency.

From the perspective of Bandura's Social Learning Theory, students' average proficiency in research knowledge reflects how learning through observation and modeling remains underdeveloped. While learners are exposed to examples and guidance from teachers or peers, their ability to internalize and replicate effective research behaviors, such as formulating clear research problems or synthesizing literature, appears limited. This suggests that observational learning, though present, may not have been maximized through consistent modeling or feedback mechanisms. Also, the findings correspond with Bandura's Self-Efficacy Theory, which posits that belief in one's capability shapes effort and persistence. The students' average research proficiency indicates a growing but still limited belief in their capability to perform research-related activities.

Consistent with Caraig (2023) and Paurillo (2019), local studies have shown that scaffolded instruction and mentoring in Practical Research 1 support the development of students' problem formulation skills, highlighting the importance of continuous guidance in refining clarity, focus, and relevance when defining research topics. Without scaffolding tools such as guided templates, examples, or visual organizers, students' working memory may be overburdened, leading to only partial comprehension of research tasks (Sweller, 2011; Caraig, 2023).

Significant difference in social media use when respondents are grouped based on their profile

Table 5 presents the results of the test of significant difference in social media use when respondents are grouped according to their profile variables, namely sex, academic strand, and social media platform. The analysis aimed to determine whether variations in these profiles correspond to significant differences in the respondents' level of social media use.

Table 5. Test of significant difference in social media use when grouped based on profile

Profile	Category	Mean Rank	Test Statistic	p-value	Interpretation
Sex	Male	111.36	-1.349	0.177	Not Significant
	Female	123.06			
Academic Strand	STEM	101.46	2.116	0.347	Not Significant
	HUMSS	119.81			
	ABM	126.02			
Social Media Platform	Facebook	118.44	1.213	0.750	Not Significant
	TikTok	115.94			
	Instagram	122.48			
	Twitter	96.36			

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As shown in Table 5, no significant differences were found in social media use when respondents are grouped across all profile variables. Thus, students demonstrate a similar extent of social media use, showing no variation in their reported engagement regardless of their profiles such as sex, academic strand, and most preferred social media platform.

This result is consistent with the study of Junco (2021) who argued that patterns of social media use among students often cut across demographic lines, with platform choice and frequency of use shaped more by peer culture than by sex or status. Also, Tiger Campus (2023) reported that digital engagement among students reflects global and peer-driven trends, with minimal variation based on academic specialization. In addition, Romano et al. (2021) argued that overlapping functions across platforms blur distinctions in usage, leading students to maintain broadly similar habits of engagement. Therefore, these findings suggest that students' social media behaviors are shaped less by individual demographic differences and more by shared digital cultures, resulting in consistently similar patterns of engagement across diverse groups.

Significant difference in the respondents' level of academic perseverance when grouped based on their profile

Table 6 presents the results of the test of significant difference in the respondents' level of academic perseverance when grouped according to their profile variables, namely sex, academic strand, and social media platform. The analysis aimed to determine whether differences in these profile variables result in significant variations in the respondents' level of academic perseverance.

Table 6. Test of significant difference in academic perseverance when grouped based on profile

Profile	Category	Mean Rank	Test Statistic	p-value	Interpretation
Sex	Male	107.63	-2.305	0.021	Significant
	Female	125.44			
Academic Strand	STEM	116.27	10.170	0.006	Significant
	HUMSS	101.92			
	ABM	151.10			
Social Media Platform	Facebook	113.14	3.261	0.353	Not Significant
	TikTok	113.49			
	Instagram	126.89			
	Twitter	131.64			

Table 6 shows no significant difference only on social media platform. Thus, there is no significant difference in academic perseverance across students who primarily use Facebook, TikTok, Instagram, or Twitter. The results suggest that students' level of academic perseverance remains consistent regardless of the social media platform they most often use. This indicates that perseverance is relatively stable across groups, meaning that whether students prefer Facebook, TikTok, Instagram, or Twitter, their determination, resilience, and time management in academic tasks tend to remain at comparable levels. Differences in platform preference do not correspond to measurable variations in how they sustain effort, cope with challenges, or remain committed to academic goals. This result implies that the choice of platform serves mainly as a medium for communication and information, but it does not appear to create distinct patterns in perseverance.

In terms of sex, Table 6 indicates that there is a significant difference in academic perseverance of Grade 12 students whether they are male or female. Particularly, the result implies that female students exhibit stronger perseverance in accomplishing academic tasks compared to male students. The difference may reflect variations in determination, resilience, or time management strategies between the two groups. These findings highlight the importance of developing support programs that encourage perseverance among male learners to ensure balanced academic persistence across groups. This result is supported by Shi (2024), who emphasized that perseverance is sustained through determination and self-regulation, traits that may manifest more strongly among female learners.

Also, Table 6 indicates that there is a significant difference in academic perseverance of Grade 12 students when grouped based on their academic strand. Further analysis showed that ABM students demonstrate greater perseverance than their peers in STEM and HUMSS, potentially due to the practical, business-oriented nature of their strand which may encourage stronger commitment and time management. This supports the study of Calderón et al. (2020) stating that learners in management-related

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fields often demonstrate higher levels of perseverance because their task-oriented activities demand sustained focus and accountability.

Significant difference in the respondents' level of research knowledge when grouped based on their profile

Table 7 presents the test of significant difference in research knowledge when the respondents are grouped according to sex, academic strand, and social media platform. As shown, no significant differences were found in research knowledge when respondents are grouped across all profile variables. Thus, students demonstrate a similar level of research knowledge regardless of their profiles such as sex, academic strand, and most preferred social media platform.

Table 7. Test of significant difference in research knowledge when grouped based on profile

Profile	Category	Mean Rank	Test Statistic	p-value	Interpretation
Sex	Male	108.99	-1.750	0.080	Not Significant
	Female	124.57			
Academic Strand	STEM	132.18	1.178	0.555	Not Significant
	HUMSS	116.95			
	ABM	116.33			
Social Media Platform	Facebook	113.16	2.408	0.492	Not Significant
	TikTok	115.80			
	Instagram	127.42			
	Twitter	104.43			

The findings align with the study of Calderón et al. (2020) who noted that research performance is generally shaped by academic exposure and learning opportunities, which are shared across male and female students in standardized programs. In the study of Rulida et al. (2024) conducted in the Philippines, male and female senior high school students performed comparably in their academic outputs, which was attributed to equal classroom environments and similar exposure to instructional strategies that support balanced learning opportunities.

Additionally, Palacios et al. (2023) emphasized that institutional support, mentorship, and access to learning resources are stronger determinants of research competence among senior high school students than curricular orientation. In the Philippine context, the Practical Research subjects required across all strands foster similarity in skill development, as technology-assisted and collaborative research activities enable students from diverse programs to engage in comparable processes, thereby minimizing differences and narrowing potential skill gaps (Rulida et al., 2024; Romano et al., 2021). Finally, learners across various contexts also encounter similar difficulties in synthesizing literature and applying methodological principles, suggesting that these challenges stem from structural issues in research instruction rather than differences in platform use (Lucas et al., 2021).

Significant relationship between social media use and research knowledge

Table 8 presents the test on the significant relationship between social media use and research knowledge among students using Spearman Rho correlation. The analysis provides both overall and dimension-specific findings, highlighting how social media use relates to problem formulation, literature review, and methodological rigor.

Table 8. Test on the significant relationship between social media use and research knowledge

Variables		Correlation Coefficient	Coefficient Interpretation*	p-value	Relationship Interpretation
Social Media Use	Problem Formulation	0.025	Very Weak	0.698	Not Significant
	Literature Review	-0.007	Very Weak	0.911	Not Significant
	Methodological Rigor	0.257	Very Weak	0.0001	Significant
Overall *(Social Media Use vs. Research Knowledge)*		**0.103**	**Very Weak**	**0.114**	**Not Significant**

**Note: Very Weak* $(\pm 0.01 - 0.30)$*; Weak* $(\pm 0.31 - 0.50)$*; Strong* $(\pm 0.51 - 0.70)$*; Very Strong* $(\pm 0.71 - 0.99)$

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The overall result in Table 8 shows a very weak positive correlation and no significant relationship between social media use and research knowledge. The very weak and statistically not significant relationship implies that frequent engagement with social media platforms does not necessarily contribute to students' acquisition or enhancement of research-related abilities. This suggests that while students may spend substantial time online, their activities are likely focused more on social interaction and entertainment rather than on academic or research-oriented learning.

Caraig (2023) emphasized that structured research training provided in *Practical Research* subjects remains a stronger determinant of research competence than online activity, suggesting that social media use mainly supports surface-level engagement. The overall relationship between social media use and research knowledge was not significant, while one dimension (methodological rigor) showed a significant but weak correlation. This can be explained through Sweller's Cognitive Load Theory, which states that learning occurs effectively when cognitive resources are properly managed.

Significant relationship between academic perseverance and research knowledge

Table 9 presents the test on the significant relationship between academic perseverance and research knowledge using Spearman Rho correlation with ρ as correlation coefficient and p as the p-value. The table aims to identify whether students who demonstrate higher perseverance in completing academic tasks also exhibit greater understanding and proficiency in research-related competencies.

Table 9. Test on the significant relationship between academic perseverance and research knowledge

Academic Perseverance	**Research Knowledge**			
	Problem Formulation	Literature Review	Methodological Rigor	**Overall**
Determination	ρ = 0.346 p = 0.0001*	ρ = 0.234 p = 0.0001*	ρ = 0.282 p = 0.0001*	ρ = 0.309 p = 0.0001*
Resilience	ρ = 0.198 p = 0.002*	ρ = 0.216 p = 0.001*	ρ = 0.250 p = 0.0001*	ρ = 0.237 p = 0.0001*
Time Management	ρ = 0.133 p = 0.041*	ρ = 0.107 p = 0.100	ρ = 0.228 p = 0.0001*	ρ = 0.169 p = 0.009*
Overall	ρ = 0.260 p = 0.0001*	ρ = 0.200 p = 0.0001*	ρ = 0.270 p = 0.0001*	**ρ = 0.226** **p = 0.0001***

**Note: Significant at* $\alpha = 0.05$

The overall result in Table 9 reveals a positive and significant relationship between academic perseverance and research knowledge. This indicates that students who demonstrate stronger academic perseverance tend to have higher levels of research knowledge. Although the strength of the correlation is weak, the significance of the result suggests that consistent academic effort and persistence meaningfully contribute to the development of research-related skills. In essence, the finding implies that the more students persevere in accomplishing their academic responsibilities, the more they improve their capability to comprehend and apply research concepts effectively.

The strongest relationship was found with problem formulation, suggesting that determined students are more capable of identifying and articulating researchable problems, a crucial foundation of the research process. A weaker but still significant relationship with literature review indicates that determination aids students in exerting effort to search, evaluate, and synthesize scholarly works, though it is not the dominant factor contributing this knowledge. Meanwhile, the significant relationship with methodological rigor implies that determined students are more inclined to persist in applying appropriate procedures, adhering to research standards, and ensuring accuracy in analysis.

This result supports Shi (2024), who emphasized that perseverance sustains students' engagement and enables them to persist through demanding tasks such as research proposals. During the follow-up interview, a HUMSS student supported this finding by mentioning, *"Yes I believe that better academic perseverance will result to better research knowledge, because if a student is determined, resilient, and have a good time management, they can have better research."*

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Significant Influence of Social Media Use and Academic Perseverance on Research Knowledge

Table 10 presents the results of the multiple linear regression analysis conducted to determine which among social media use and academic perseverance significantly influences students' research knowledge. The regression model was tested using both unstandardized and standardized coefficients, together with the corresponding *t*-values and *p*-values to assess the significance of each predictor. The overall model fit was evaluated using R^2, adjusted R^2, and the *F*-test to establish whether the combined variables significantly account for the variance in research knowledge. The model summary indicates that the regression model is statistically significant, confirming that the predictors collectively explain variation in students' research knowledge.

Table 10. Model 1 Test on the Significant Influence of Social Media Use and Academic Perseverance on Research Knowledge

Predictors	Unstandardized Coefficients (B)	Standardized Coefficients (β)	t-value	p-value	Interpretation
(Constant)	2.481	-----	3.113	0.002	-----
Social Media Use	-0.035	-0.014	-0.208	0.835	Not Significant
Academic Perseverance	0.830	0.246	3.781	0.0001	Significant
Model Summary: $R^2 = 0.059$; *Adjusted* $R^2 = 0.051$*; F-value* $= 7.334$*; p-value* $= 0.001$*; Interpretation* = Significant					

However, Table 10 reveals that among the two predictors, only academic perseverance has a significant influence on research knowledge. This implies that higher levels of academic perseverance are associated with higher levels of research knowledge, and academic perseverance serves as a meaningful contributor in explaining students' ability in writing a research proposal. On the other hand, social media use yielded a non-significant result, indicating that students' use of social media has no significant influence on research knowledge in this model. These findings suggest that while perseverance consistently supports students in sustaining the demands of research, social media use does not provide a substantial contribution when examined alongside perseverance.

Shi (2024) emphasized that perseverance is essential for maintaining sustained effort in long-term projects such as research, directly contributing to deeper engagement and stronger outputs. Similarly, Hossain et al. (2022) described perseverance as a protective quality that allow learners to stay focused under academic pressure, which is vital in demanding tasks like research writing. Finally, based on the findings presented in Table 10, the regression equation model can be established and is given by

$$Y = 2.481 + 0.830X + \varepsilon$$

where Y is the research knowledge, X is the academic perseverance (predictor), and ε is the error term.

Furthermore, Table 11 reveals that among the three dimensions of academic perseverance, only determination emerged as a significant predictor of research knowledge. This indicates that students with stronger determination are more likely to demonstrate higher levels of research knowledge. This underscores the importance of persistence and goal-directed effort in completing demanding research tasks such as problem formulation, literature synthesis, and methodological application.

Table 11. Model 2 Test on the Significant Influence of the Dimensions of Academic Perseverance on Research Knowledge

Predictors	Unstandardized Coefficients (B)	Standardized Coefficients (β)	t-value	p-value	Interpretation
(Constant)	1.048	-----	1.326	0.186	-----
Determination	0.891	0.277	3.549	0.0001	Significant
Resilience	0.250	0.080	1.022	0.308	Not Significant
Time Management	0.062	0.021	0.298	0.766	Not Significant
Model Summary: $R^2 = 0.115$; *Adjusted* $R^2 = 0.104$*; F-value* $= 10.097$*; p-value* $= 0.0001$*; Interpretation* = Significant					

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This result supports the view that determination sustains engagement with challenging academic tasks, while perseverance serves as a resource that enables learners to maintain focus even when confronted with setbacks (Shi, 2024; Hossain et al., 2022). Given that determination emerged as the only significant predictor, these findings highlight its pivotal role in driving students' research performance. This suggests that regardless of other factors, students who possess strong determination are more likely to remain focused, persist through challenges, and successfully complete complex research tasks.

CONCLUSION

The study found that while students exhibited high social media use and very high academic perseverance, only perseverance, particularly determination, significantly influenced their research knowledge, emphasizing its key role in developing research such as problem formulation, literature review, and methodological rigor. Differences in perseverance were also observed across sex and academic strand, suggesting that students' perseverance levels vary by demographic and academic context. Overall, the findings highlight that perseverance, more than social media use, drives effective research learning. Therefore, educational efforts should focus on fostering determination, goal-setting, and sustained effort, while future research may explore other influencing factors like digital literacy, motivation, and study habits to further strengthen students' research competencies.

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