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Grit Level and Reading Comprehension of Grade 12 Students

Roselyn M. Panis[1], Lehai B. Beloro[2]

[1]Teacher II, Department of Education, Division of Camarines Sur, Pasacao District, Rolando R. Andaya Sr. Memorial High School, Bahay, Pasacao, Camarines Sur, Philippines
[2]Head Teacher III, Department of Education, Division of Camarines Sur, Pamplona District, Don Mariano C. Veneracion National High School, Pamplona, Camarines Sur, Philippines

Abstract
This study determined the influence of grit level on the reading comprehension of Grade 12 students at Rolando R. Andaya Sr. Memorial High School in the Pasacao District, Division of Camarines Sur for S/Y 2025-2026. It further identified the grit level of students in terms of overcoming setbacks, attaining goals, and sustaining interest. The study also examined the level of students' reading comprehension in the literal, inferential, and critical levels. Furthermore, it assessed the significant relationship between grit level and reading comprehension. The extent to which grit level influences students' reading comprehension was likewise determined. Based on the findings, a learning module was developed to help improve both the grit level and reading comprehension of the students. The study involved a total enumeration of two hundred Grade 12 students who served as the respondents of the research. A descriptive–correlational research design was utilized to describe the levels of grit and reading comprehension and to determine the relationship between the two variables. Weighted Mean, Performance Level, Standard Deviation, Pearson Product Moment Correlation Coefficient, Coefficient of Determination and modified ADDIE model were utilized in treating the collected data from respondents. Major conclusions were: Grade 12 students demonstrate moderate overall grit, with the strongest performance in sustaining interest, followed by attaining goals, and the lowest in overcoming setbacks; students exhibit average performance in literal and critical reading comprehension but show developing performance in inferential comprehension, indicating challenges in higher-order thinking and making inferences from texts; grit levels have a selective impact on reading comprehension, showing weak but significant positive relationships only with inferential comprehension through attaining goals and sustaining interest; and grit in terms of attaining goals and sustaining interest has a positive but limited effect on inferential reading comprehension

Keywords: Grit, Reading Comprehension, Project GRIT-READ

INTRODUCTION

Reading comprehension is a fundamental skill that enables learners to construct meaning from texts, interpret ideas, and engage critically with information across academic disciplines. The development of strong reading comprehension skills is essential for academic success, particularly at the senior high school level where students are expected to process complex texts, synthesize information, and demonstrate higher-order thinking. However, many learners continue to encounter difficulties in understanding written materials, especially when tasks require inferential reasoning and critical analysis. These challenges often

extend beyond cognitive ability and are influenced by non-cognitive traits such as motivation, perseverance, and sustained engagement in learning tasks. Recent studies highlight that students' persistence and sustained effort play an important role in supporting academic performance, particularly in cognitively demanding tasks such as reading comprehension (Credé et al., 2017; Li et al., 2019; Howard et al., 2018; Tang et al., 2020). Consequently, examining how personal attributes such as grit contribute to reading comprehension has become increasingly important in understanding students' learning outcomes.

At the global level, the importance of literacy development and learner resilience is emphasized in international education agendas. The United Nations' Sustainable Development Goals (SDGs), particularly Sustainable Development Goal 4, aim to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (United Nations, 2015). Reading comprehension serves as a foundational skill that allows individuals to access knowledge, participate in social and economic life, and develop critical thinking abilities necessary for sustainable development. At the same time, non-cognitive attributes such as perseverance, motivation, and resilience are increasingly recognized as essential components of effective learning. International organizations such as UNESCO and the Organisation for Economic Co-operation and Development (OECD) highlight that students who demonstrate persistence and sustained engagement are more likely to overcome learning barriers and achieve academic success. Research across different educational contexts indicates that students with higher levels of grit are more capable of sustaining effort in challenging tasks, including reading comprehension activities that require deep cognitive processing (OECD, 2018; Park et al., 2020; Credé et al., 2017).

These global educational concerns are also reflected in the Philippine educational context, where improving literacy outcomes remains a key priority. National educational initiatives emphasize strengthening reading proficiency and addressing learning gaps among students across grade levels. The Department of Education has implemented programs such as the Every Child a Reader Program (ECARP) and other literacy-focused interventions aimed at enhancing students' reading abilities. In addition, recent learning recovery initiatives highlight the need to address both cognitive and motivational factors that influence students' academic performance. Within the Philippine education system, senior high school students are expected to demonstrate advanced comprehension skills, including the ability to analyze texts, draw inferences, and evaluate information critically. However, reports continue to indicate that many learners struggle with higher-order comprehension tasks, particularly inferential and analytical reading skills. These challenges suggest that improving reading comprehension may require not only strengthening cognitive strategies but also fostering motivational traits that support sustained engagement in learning.

Within this context, grit has emerged as a relevant factor that may influence students' academic performance. Grit refers to the perseverance and sustained effort individuals demonstrate in pursuing long-term goals despite challenges and setbacks. Students who exhibit higher levels of grit are more likely to maintain focus, persist through difficulties, and remain engaged in learning activities over time. Research suggests that learners who demonstrate goal-oriented persistence and sustained interest tend to perform better in complex academic tasks that require continuous cognitive engagement. In reading comprehension, students must actively process information, make inferences, and connect ideas across texts, which requires both cognitive effort and motivational persistence. Studies indicate that students who possess strong perseverance and sustained interest are more capable of engaging deeply with texts and

overcoming challenges associated with reading comprehension tasks (Duckworth & Quinn, 2017; Jachimowicz et al., 2018; Wu & Zhang, 2018).

Despite growing recognition of the importance of non-cognitive traits in academic learning, limited research has examined how grit specifically relates to reading comprehension among senior high school students. Many existing studies focus primarily on cognitive aspects of reading, such as vocabulary knowledge, decoding skills, and comprehension strategies, while fewer studies explore how motivational attributes influence students' ability to engage with texts and persist in challenging reading tasks. Understanding the interaction between cognitive and non-cognitive factors is therefore essential in developing more holistic educational interventions that support student learning. By examining how grit relates to reading comprehension, educators can better identify strategies that strengthen both students' academic skills and their perseverance in learning.

Given these considerations, investigating the influence of grit level on students' reading comprehension is essential for understanding how perseverance and sustained effort contribute to academic performance. Generating empirical evidence on this relationship is particularly relevant in senior high schools where learners are expected to demonstrate advanced reading comprehension skills across various academic subjects. Accordingly, the present study examines the influence of grit level on the reading comprehension of Grade 12 students at Rolando R. Andaya Sr. Memorial High School in the Pasacao District, Division of Camarines Sur. By exploring the relationship between grit and reading comprehension, the study aims to provide insights that may guide the development of instructional strategies and intervention programs designed to strengthen both students' perseverance and their comprehension abilities.

Research Objectives

This study determined the influence of grit level on the reading comprehension of Grade 12 students at Rolando R. Andaya Sr. Memorial High School, Pasacao District, Division of Camarines Sur during the School Year 2025–2026. Specifically, the following objectives were attained: (1) the grit level of the students in terms of overcoming setbacks, attaining goals, and sustaining interest; (2) the level of students' reading comprehension in terms of literal, inferential, and critical comprehension; (3) the significant relationship between students' grit level and their reading comprehension; (4) the extent of influence of grit level on the reading comprehension of the students; and (5) the learning module developed to improve students' grit level and reading comprehension based on the findings of the study.

METHODOLOGY

This study employed the descriptive–correlational research method. The descriptive method was utilized because it enables researchers to systematically describe the characteristics, behaviors, and conditions of respondents without manipulating any variables, thereby providing an accurate representation of the phenomenon being studied (Mills & Gay, 2018). In this study, the descriptive approach was used to determine the level of grit among Grade 12 students in terms of overcoming setbacks, attaining goals, and sustaining interest. It was also applied to determine the level of students' reading comprehension in terms of literal, inferential, and critical comprehension. Through descriptive statistics such as weighted mean and standard deviation, the study provided a clear description of students' perseverance and reading comprehension performance.

The correlational method was employed because it allows the researcher to examine the relationship between two or more variables and determine how changes in one variable correspond with variations in

another without establishing causality (Mills & Gay, 2018). In the present study, the correlational approach was used to determine the significant relationship between students' grit level and their reading comprehension. Specifically, it examined how the dimensions of grit—overcoming setbacks, attaining goals, and sustaining interest—are associated with the different levels of reading comprehension, namely literal, inferential, and critical comprehension.

To analyze the relationship between the variables, the Pearson Product–Moment Correlation Coefficient (r) was employed. Pearson correlation is commonly used in educational research to determine the strength and direction of linear relationships between continuous variables (Field, 2018; Pallant, 2020; Turney, 2024). This statistical technique enabled the researcher to determine whether higher levels of grit were associated with higher levels of reading comprehension among the respondents.

Furthermore, the coefficient of determination (r^2) was computed to determine the extent of influence of grit level on students' reading comprehension performance. The coefficient of determination measures the proportion of variance in the dependent variable that can be explained by the independent variable, thereby providing insight into the predictive contribution of grit to reading comprehension outcomes (Field, 2018; Pallant, 2020). This analysis allowed the researcher to determine how much of the variation in students' reading comprehension performance could be explained by their level of grit.

A 4-point Likert Scale was used to measure the grit level of the respondents. The scale enabled students to express the degree to which each statement reflected their behavior and attitudes related to perseverance and sustained effort. The responses were interpreted as follows:

Weight	Scale Interval	Interpretation
4	3.26 – 4.00	Very Much Like Me (VMLM)
3	2.51 – 3.25	Mostly Like Me (MLM)
2	1.76 – 2.50	Somewhat Like Me (SLM)
1	1.00 – 1.75	Not Like Me at All (NLMAA)

The primary instrument used to measure students' grit was an adapted questionnaire based on the Short Grit Scale (Grit–S) developed by Duckworth and Quinn (2009). The questionnaire consisted of fifteen (15) items divided into three dimensions: overcoming setbacks, attaining goals, and sustaining interest. Each dimension contained five indicators designed to measure students' perseverance and sustained effort in academic tasks. Adapted questionnaires are widely used in educational research because they allow researchers to measure psychological and behavioral constructs within specific contexts while maintaining the validity of established instruments (Creswell & Creswell, 2018).

To measure students' reading comprehension, the study utilized an adapted teacher-made test consisting of fifteen (15) multiple-choice items. The test assessed students' performance across three levels of comprehension: literal, inferential, and critical. Each level contained five items designed to measure different cognitive processes involved in reading comprehension. A Table of Specifications (TOS) was prepared to ensure alignment between the learning objectives, comprehension levels, and test items. The use of a TOS helps ensure balanced coverage of learning competencies and improves the validity of teacher-developed assessments (Nitko & Brookhart, 2014).

The respondents of the study consisted of two hundred (200) Grade 12 students enrolled at Rolando R. Andaya Sr. Memorial High School during the School Year 2025–2026. The respondents were selected

using total enumeration sampling, which involves including all members of the population in the study. Total enumeration is appropriate when the population size is manageable and when the researcher intends to obtain comprehensive data from all members of the group (Creswell & Creswell, 2018; Etikan et al., 2015). By involving all Grade 12 students, the study ensured that the findings accurately represented the experiences and characteristics of the entire population within the school.

Finally, the findings of the study served as the basis for developing an intervention module entitled Project GRIT-READ (Goal Reinforcement and Inferential Thinking for Reading Engagement and Academic Development). The development of the module followed a Modified ADDIE Model, specifically the Analysis, Design, and Development phases, to ensure that the instructional intervention was systematically derived from the research findings and aligned with evidence-based instructional design principles (Biech, 2017; Branch, 2020). Through this process, the module was designed to strengthen students' grit levels while simultaneously improving their inferential reading comprehension skills.

RESULTS AND DISCUSSION

Grit level of Grade 12 Students. This section presented the results and discussion of the grit levels of Grade 12 students in terms of overcoming setbacks, attaining goals, and sustaining interest, as reflected in Tables 1a to 1c, with the overall summary shown in Table 1d. The presentation highlights how students demonstrate perseverance and sustained effort in academic tasks, particularly in relation to their reading comprehension activities.

Overcoming Setbacks

Overcoming setbacks. Table 1a presents the grit levels of Grade 12 students in terms of overcoming setbacks. The results show that among the indicators, the statement "I see mistakes as opportunities to improve myself" obtained the highest weighted mean of 2.15, interpreted as Somewhat Like Me (SLM). This was followed by "I continue working hard even after experiencing failure" with a weighted mean of 2.10, and "When I face challenges in my studies, I do not easily give up" with a weighted mean of 2.09, both interpreted as Somewhat Like Me (SLM).

However, lower ratings were observed for "I try again even after several unsuccessful attempts" with a weighted mean of 1.28, and "I remain focused even when learning becomes difficult" with a weighted mean of 1.13, both interpreted as Not Like Me at All (NLMAA). The average weighted mean (AWM) of 1.75, interpreted as Not Like Me at All, indicates that students generally demonstrate low grit in overcoming setbacks.

Table 1A
Grit Level of Grade 12 Students in terms of Overcoming Setbacks

Indicators	WM	Int	Rank
I continue working hard even after experiencing failure.	2.10	SLM	1
When I face challenges in my studies, I do not easily give up.	2.09	SLM	3
I see mistakes as opportunities to improve myself.	2.15	SLM	2
I remain focused even when learning becomes difficult.	1.13	NLMAA	5
I try again even after several unsuccessful attempts.	1.28	NLMAA	4

AWM	1.75	Not like me at all	

Note. WM =Weighted Mean, Int.=Interpretation, AWM=Average Weighted Mean, 3.36=Very much like me (VMLM) , 2.51-3.25=Very much like me (VMLM),1.76-2.50 =Somewhat like me (SLM), 1.00-1.75=Not like me at all (NLMAA).

The results reveal that while students recognize the importance of learning from mistakes and continuing to exert effort despite failure, they struggle with maintaining persistence when faced with repeated challenges. This pattern suggests that students possess an awareness of perseverance but may lack consistent strategies for coping with difficulties and sustaining effort over time. The relatively low AWM indicates that resilience in overcoming setbacks remains limited among the respondents.

These findings imply that Grade 12 students may encounter difficulties in maintaining perseverance when academic tasks become demanding, particularly in activities that require sustained cognitive engagement such as reading comprehension. Students who struggle to persist through challenges may be more likely to disengage from complex reading tasks that require inference, interpretation, and critical analysis. Consequently, strengthening students' resilience and coping strategies may help improve their ability to persist in challenging academic activities.

The results are supported by several studies emphasizing the importance of grit in academic achievement. For instance, Credé et al. (2017) reported that perseverance significantly predicts student engagement and academic success. Similarly, Jachimowicz et al. (2018) highlighted that persistence in overcoming challenges enhances students' learning outcomes. Research by Eskreis-Winkler et al. (2014) also emphasized that students who sustain effort despite setbacks are more likely to achieve long-term academic goals. Additional studies by Li et al. (2019), Howard et al. (2018), and Wu and Zhang (2018) further indicate that students with higher levels of grit demonstrate stronger persistence and improved performance in cognitively demanding academic tasks.

From a theoretical perspective, these findings are supported by Duckworth's Grit Theory, which emphasizes perseverance and sustained passion for long-term goals as key determinants of success. Similarly, Self-Determination Theory (Deci & Ryan) explains that intrinsic motivation and perceived competence encourage individuals to persist despite challenges. Goal-Setting Theory (Locke & Latham) also highlights that clearly defined goals can motivate individuals to maintain effort when confronted with obstacles. Furthermore, Vygotsky's Sociocultural Theory, particularly the Zone of Proximal Development (ZPD), suggests that learners' ability to overcome academic challenges can be strengthened through scaffolding, guided instruction, and collaborative learning. Together, these theoretical perspectives provide a comprehensive explanation for the observed patterns of low resilience among students in overcoming setbacks.

Attaining Goals

Attaining goals. Table 1b presents the grit levels of Grade 12 students in terms of attaining goals. The results indicate that the statement "I set long-term academic goals for myself" obtained the highest weighted mean of 2.90, interpreted as Mostly Like Me (MLM). This was followed by "I am willing to put in extra effort to accomplish important objectives" with a weighted mean of 2.75, also interpreted as Mostly Like Me (MLM).

Moderate responses were observed for "I work consistently toward achieving my goals" with a weighted mean of 2.37 and "I prioritize my goals over short-term distractions" with a weighted mean of 2.11, both

interpreted as Somewhat Like Me (SLM). The lowest rating was recorded for "I stay committed to my goals even when progress is slow" with a weighted mean of 1.44, interpreted as Not Like Me at All (NLMAA). The average weighted mean (AWM) of 2.31 indicates that students somewhat demonstrate grit in attaining goals.

Table 1B
Grit Level of Grade 12 Students in terms of Attaining Goals

Indicators	WM	Int	Rank
I set long-term academic goals for myself.	2.90	MLM	1
I work consistently toward achieving my goals.	2.37	SLM	3
I am willing to put in extra effort to accomplish important objectives.	2.75	MLM	2
I stay committed to my goals even when progress is slow.	1.44	NLMAA	5
I prioritize my goals over short-term distractions.	2.11	SLM	4
AWM	2.31	Somewhat like me	

Note. WM =Weighted Mean, Int.=Interpretation, AWM=Average Weighted Mean, 3.36=Very much like me (VMLM) , 2.51-3.25=Very much like me (VMLM),1.76-2.50 =Somewhat like me (SLM), 1.00-1.75=Not like me at all (NLMAA).

The findings suggest that while students are capable of setting academic goals and expressing willingness to exert effort toward achieving them, they experience difficulty maintaining commitment when progress becomes slow or challenging. This pattern indicates that students may initially demonstrate motivation and goal orientation, but sustaining effort over time remains a challenge.

These results imply that students' moderate engagement in goal-directed behavior may influence their academic performance, particularly in tasks requiring long-term persistence such as reading comprehension and project-based learning. While students are capable of initiating goals, the lack of sustained commitment may hinder their ability to fully achieve academic objectives.

These findings align with studies highlighting the importance of goal-directed persistence in academic success. Research by Duckworth and Quinn (2017) indicates that students with higher levels of grit are more likely to achieve long-term goals. Similarly, Credé et al. (2017) found that perseverance and goal commitment significantly influence academic achievement. Studies by Tang et al. (2020) and Alhadabi and Karpinski (2020) further emphasize that goal-setting behaviors promote sustained engagement and improved learning outcomes.

From a theoretical perspective, these results are consistent with Goal-Setting Theory, which suggests that clear and challenging goals enhance motivation and performance. Likewise, Self-Determination Theory explains that intrinsic motivation and perceived competence strengthen students' commitment to academic tasks. In addition, Duckworth's Grit Theory emphasizes that sustained effort and persistence toward long-term goals are essential components of academic achievement.

Sustaining Interest

Sustaining Interest. Table 1c presents the summary showing the grit levels of Grade 12 students in terms of sustaining interest. The results reveal that "I stay passionate about tasks that are important to me" obtained the highest weighted mean (WM = 3.58, Very Much Like Me), indicating that students generally demonstrate strong enthusiasm toward activities they consider meaningful or personally important. This

was followed by "I maintain enthusiasm for projects until they are completed" (WM = 2.96, Mostly Like Me), suggesting that many students remain motivated when working on tasks that capture their attention. Moderate responses were observed for "I do not frequently change my long-term goals" (WM = 2.04, Somewhat Like Me), indicating that students show some level of consistency in maintaining their academic interests. However, lower ratings were reported for "I continue pursuing areas of interest even when they become challenging" (WM = 1.54, Not Like Me at All) and "I remain interested in my goals over a long period of time" (WM = 1.53, Not Like Me at All). The overall average weighted mean of 2.33, interpreted as Somewhat Like Me, indicates that students demonstrate moderate levels of sustaining interest in academic tasks.

Table 1c
Grit Level of Grade 12 Students in terms of Sustaining Interest

Indicators	WM	Int	Rank
I remain interested in my goals over a long period of time.	1.53	NLMAA	5
I do not frequently change my long-term goals.	2.04	SLM	3
I stay passionate about tasks that are important to me.	3.58	VMLM	1
I maintain enthusiasm for projects until they are completed.	2.96	MLM	2
I continue pursuing areas of interest even when they become challenging.	1.54	NLMAA	4
AWM	2.33	Somewhat like me	

Note. WM =Weighted Mean, Int.=Interpretation, AWM=Average Weighted Mean, 3.36=Very much like me (VMLM) , 2.51-3.25=Very much like me (VMLM),1.76-2.50 =Somewhat like me (SLM), 1.00-1.75=Not like me at all (NLMAA).

The results indicate that students generally display enthusiasm and passion for tasks they consider important; however, their ability to maintain sustained interest over a long period of time appears to be limited. While learners may initially demonstrate strong motivation and excitement toward specific academic activities, maintaining consistent engagement when tasks become challenging or prolonged remains difficult. This pattern suggests that students' persistence may depend largely on their immediate interest in the task rather than on long-term commitment to academic goals.

These findings imply that students' fluctuating levels of interest could influence their academic performance, particularly in activities that require sustained effort and concentration such as reading comprehension, research projects, and long-term academic tasks. When students struggle to maintain consistent interest, they may experience reduced engagement, which can affect their ability to complete tasks that require deeper cognitive processing and persistence. Strengthening students' ability to sustain motivation and remain focused on long-term goals may therefore help improve their academic performance.

The results are supported by several studies emphasizing the importance of sustained interest in learning. For instance, Credé et al. (2017) reported that persistence and sustained interest significantly influence academic engagement and achievement. Similarly, Duckworth and Quinn (2017) found that students who maintain passion and commitment toward long-term goals demonstrate stronger academic performance. Research by Howard et al. (2018) and Li et al. (2019) also indicates that sustained engagement in

challenging tasks enhances students' persistence and learning outcomes. Additional studies by Tang et al. (2020), Alhadabi and Karpinski (2020), and Wu and Zhang (2018) further confirm that students who maintain consistent interest and motivation are more likely to overcome academic challenges and achieve their learning goals.

From a theoretical perspective, these findings are supported by Duckworth's Grit Theory, which emphasizes the importance of perseverance and sustained passion for long-term goals in achieving success. The results are also consistent with Self-Determination Theory, which explains that intrinsic motivation and a sense of competence encourage individuals to remain engaged in meaningful tasks. Likewise, Goal-Setting Theory highlights that clearly defined goals promote persistence and sustained effort in completing challenging activities. Furthermore, Vygotsky's Sociocultural Theory, particularly the Zone of Proximal Development, suggests that learners can maintain engagement and develop higher levels of persistence when provided with appropriate guidance, scaffolding, and collaborative support. These theoretical perspectives collectively explain why students may demonstrate enthusiasm in the early stages of learning but require additional support to sustain their interest over extended periods of academic engagement.

Summary of Grit Level. Table 1d presents the overall summary of the grit levels of Grade 12 students across three dimensions: overcoming setbacks, attaining goals, and sustaining interest. Among these aspects, sustaining interest obtained the highest average weighted mean (AWM = 2.33), interpreted as Somewhat Like Me, indicating that students demonstrate moderate ability to maintain enthusiasm and engagement in academic tasks. This was closely followed by attaining goals (AWM = 2.31, Somewhat Like Me), suggesting that students show moderate commitment in setting and pursuing academic objectives. In contrast, overcoming setbacks recorded the lowest average weighted mean (AWM = 1.75, Not Like Me at All), indicating that students experience difficulty in maintaining persistence when confronted with academic challenges or repeated failures. The overall average weighted mean of 2.13, interpreted as Somewhat Like Me, indicates that students demonstrate moderate levels of grit across the three dimensions.

Table 1D
Summary of Grit Level of Grade 12 Students

Aspects	AWM	Int.	Rank
Overcoming Setbacks	1.75	NLMAA	3
Attaining Goals	2.31	SLM	2
Sustaining Interest	2.33	SLM	1
Over-All AWM	2.13	Somewhat like me	

Note. WM =Weighted Mean, Int.=Interpretation, AWM=Average Weighted Mean, 3.36=Very much like me (VMLM) , 2.51-3.25=Very much like me (VMLM),1.76-2.50 =Somewhat like me (SLM), 1.00-1.75=Not like me at all (NLMAA).

The results reveal a noticeable variation in students' grit across the three dimensions. While students demonstrate moderate levels of goal-setting and sustained interest, their ability to overcome setbacks appears to be relatively weak. This pattern suggests that although students may possess motivation and

enthusiasm for learning, they may struggle to maintain perseverance when confronted with academic difficulties or prolonged challenges. The disparity between sustaining interest and overcoming setbacks indicates that students may initially engage in learning activities but encounter difficulties sustaining effort when obstacles arise.

These findings imply that students' moderate levels of grit may support engagement in academic tasks, but their limited resilience when facing setbacks could hinder long-term academic growth. In particular, students who struggle to cope with difficulties may find it challenging to persist in tasks that require extended effort and higher-order thinking, such as inferential reading comprehension and problem-solving activities. Consequently, interventions that strengthen perseverance, resilience, and adaptive coping strategies may help students maintain consistent effort and achieve their academic goals.

The findings are supported by several studies emphasizing the importance of grit in academic achievement. For example, Credé et al. (2017) reported that perseverance and sustained effort significantly predict academic success and student engagement. Similarly, Duckworth and Quinn (2017) highlighted that students who demonstrate consistent effort and passion for long-term goals are more likely to achieve higher levels of academic performance. Research by Jachimowicz et al. (2018) and Howard et al. (2018) also indicates that perseverance and sustained interest are critical components of academic grit that contribute to students' persistence in challenging learning tasks. Additional studies by Li et al. (2019), Tang et al. (2020), and Wu and Zhang (2018) further confirm that students with higher levels of grit demonstrate greater engagement and improved learning outcomes.

From a theoretical perspective, these results are supported by Duckworth's Grit Theory, which emphasizes perseverance and sustained passion as key determinants of long-term success. Similarly, Self-Determination Theory explains that intrinsic motivation and perceived competence influence students' persistence in academic tasks. Goal-Setting Theory further highlights the importance of clearly defined goals in sustaining effort and commitment toward achieving desired outcomes. In addition, Vygotsky's Sociocultural Theory, particularly the concept of the Zone of Proximal Development (ZPD), suggests that learners' perseverance and resilience can be strengthened through guided instruction, scaffolding, and collaborative learning experiences. Together, these theoretical perspectives provide a comprehensive explanation of the moderate levels of grit observed among Grade 12 students in this study.

Reading Comprehension of Students

Reading Comprehension. Table 2 presents the reading comprehension performance of Grade 12 students in terms of the literal, inferential, and critical dimensions. Among the three aspects, critical comprehension obtained the highest mean score (M = 2.61, SD = 0.47), interpreted as Average Performance (AP). This was followed closely by literal comprehension (M = 2.56, SD = 0.44), which was also interpreted as Average Performance (AP). In contrast, inferential comprehension recorded the lowest mean score (M = 2.22, SD = 0.46), interpreted as Developing (D). The overall mean score of 2.46 (SD = 0.49) indicates that students generally demonstrate a developing level of reading comprehension performance.

Table 2
Reading Comprehension of Students

Aspects of Reading Comprehension	Number of Items	Mean	SD	PL	Int.
Literal	5	2.56	0.44	51.24	AP
Inferential	5	2.22	0.46	44.35	D

Critical	5	2.61	0.47	52.25	AP
Average	15	2.46	0.49	49.28	D

Note. WM =Weighted Mean, Int.=Interpretation, AWM=Average Weighted Mean, 3.36=Very much like me (VMLM) , 2.51-3.25=Very much like me (VMLM),1.76-2.50 =Somewhat like me (SLM), 1.00-1.75=Not like me at all (NLMAA

The results indicate that students demonstrate relatively stronger performance in literal and critical comprehension, while they experience greater difficulty in inferential comprehension. Literal comprehension involves identifying explicitly stated information in the text, which students appear capable of performing at an average level. Similarly, students demonstrate moderate ability in critical comprehension, which involves evaluating and analyzing textual information. However, their lower performance in inferential comprehension suggests difficulty in interpreting implicit meanings, drawing conclusions, and connecting ideas across texts.

These findings imply that students may rely primarily on surface-level reading strategies that focus on retrieving explicit information rather than engaging in deeper analytical processing. Inferential comprehension requires higher-order thinking skills, including the ability to integrate prior knowledge, analyze contextual clues, and make logical interpretations beyond the information directly presented in the text. When students struggle with inferential reasoning, they may encounter challenges in understanding complex academic materials and performing tasks that require deeper cognitive engagement.

The results are supported by several studies emphasizing the challenges associated with inferential comprehension among secondary learners. For instance, Afflerbach et al. (2018) reported that inferential comprehension often presents greater difficulty for students compared to literal comprehension because it requires deeper cognitive processing. Similarly, Snow (2016) highlighted that students frequently struggle with interpreting implicit meaning and synthesizing information across texts. Research by McKeown et al. (2017) and Taylor et al. (2018) further indicates that students typically perform better on tasks involving explicit information than those requiring inferential reasoning. Additional studies by Cain et al. (2016) and Kim and Phillips (2019) also confirm that inferential comprehension remains a significant challenge for many learners in secondary education.

From a theoretical perspective, these findings align with Duckworth's Grit Theory, which suggests that sustained effort and perseverance are necessary for completing cognitively demanding tasks such as inferential reading. Similarly, Self-Determination Theory emphasizes that students' motivation and engagement influence their willingness to persist in challenging learning activities. Goal-Setting Theory also highlights that clearly defined learning goals can improve students' focus and persistence in complex reading tasks. In addition, Vygotsky's Sociocultural Theory, particularly the Zone of Proximal Development, suggests that guided instruction, scaffolding, and collaborative learning can help students develop higher-order comprehension skills. Through structured support and meaningful learning activities, students can gradually improve their ability to interpret and analyze complex texts.

Test on Relationship between Grit Levels and Reading Comprehension of Students

Relationship between Grit Levels and Reading Comprehension. Table 3 presents the results of the Pearson Product–Moment Correlation Coefficient analysis examining the relationship between the grit levels of Grade 12 students and their reading comprehension performance in terms of literal, inferential, and critical dimensions. The results indicate that most of the correlations between grit and reading comprehension

were very weak and not statistically significant. However, two significant relationships were identified between specific grit dimensions and inferential comprehension.

Specifically, attaining goals demonstrated a weak positive and significant relationship with inferential comprehension ($r = 0.277$, $p = 0.013$). Similarly, sustaining interest showed a weak positive and significant relationship with inferential comprehension ($r = 0.229$, $p = 0.043$). In contrast, overcoming setbacks did not show significant relationships with any of the reading comprehension dimensions, with correlations recorded as very weak or negligible.

Table 3

Test on Relationship between Grit Levels and Reading Comprehension of Students

Grit Level	Reading Comprehension	r value	Interpretation (r)	pvalue	Interpretation (Sig.)
Overcoming Setbacks	Literal	0.1	Very weak positive	0.382	Not Significant
	Inferential	0.11	Very weak positive	0.333	Not Significant
	Critical	-0.02	Negligible	0.863	Not Significant
Attaining Goals	Literal	0.032	Negligible	0.777	Not Significant
	Inferential	0.277	Weak positive	0.013	Significant
	Critical	-0.02	Negligible	0.863	Not Significant
Sustaining Interest	Literal	0.14	Very weak positive	0.218	Not Significant
	Inferential	0.229	Weak positive	0.043	Significant
	Critical	0.119	Very weak positive	0.297	Not Significant

Note. The Pearson correlation coefficient (r) values are interpreted as follows: 0.00 and ±0.19 negligible or very weak relationship; ±0.20 to ±0.39=weak relationship; ±0.40 and ±0.59 moderate relationship; ±0.60 to ±0.79 strong relationship; and ±0.80 and ±1.00 very strong relationship.

The results indicate that only inferential comprehension demonstrated significant relationships with specific dimensions of grit, particularly attaining goals and sustaining interest. This suggests that students who set clear academic goals and maintain engagement in learning tasks are more likely to demonstrate stronger ability in making inferences and interpreting implicit meanings in texts. Inferential comprehension requires deeper cognitive processing, including connecting ideas, drawing conclusions, and integrating information from different parts of a text. Students who remain motivated and goal-oriented may therefore be better equipped to persist in such cognitively demanding tasks.

On the other hand, the absence of significant relationships between overcoming setbacks and the reading comprehension dimensions suggests that resilience alone may not directly influence students' comprehension abilities. Instead, the results indicate that goal-directed behavior and sustained engagement may play a more influential role in supporting higher-order reading skills. These findings highlight the

importance of integrating motivational traits with cognitive learning strategies to enhance students' academic performance.

The findings are supported by several studies highlighting the relationship between grit and academic performance. For instance, Credé et al. (2017) reported that perseverance and sustained effort contribute to improved academic engagement and achievement. Similarly, Duckworth and Quinn (2017) emphasized that students who demonstrate strong commitment toward long-term goals are more likely to succeed in challenging academic tasks. Research by Howard et al. (2018) and Li et al. (2019) further indicates that goal-directed behavior and sustained motivation enhance students' inferential reasoning and comprehension skills. Additional studies by Tang et al. (2020), Alhadabi and Karpinski (2020), and Wu and Zhang (2018) also confirm that students with higher levels of grit tend to perform better in tasks requiring deeper cognitive engagement.

From a theoretical perspective, these findings are supported by Duckworth's Grit Theory, which emphasizes perseverance and sustained passion for long-term goals as critical determinants of academic success. Similarly, Self-Determination Theory suggests that intrinsic motivation and engagement influence students' persistence in challenging academic tasks. Goal-Setting Theory further explains that students who establish clear learning objectives are more likely to remain focused and engaged in tasks requiring sustained effort. In addition, Vygotsky's Sociocultural Theory, particularly the Zone of Proximal Development, highlights the role of guided instruction and scaffolding in helping students develop higher-order cognitive skills such as inferential comprehension. These theoretical perspectives collectively explain why goal-oriented behavior and sustained engagement are associated with improved inferential reading performance among students.

Extent of Influence of Grit Level to the Reading Comprehension of the Students

Extent of Influence of Grit Level to the Reading Comprehension of the Students. Table 4 presents the extent to which students' grit level influences their reading comprehension, particularly in the inferential dimension. The analysis was conducted using the coefficient of determination (r^2) to determine the proportion of variance in reading comprehension that can be explained by the grit dimensions that showed significant relationships in the previous analysis.

The results indicate that attaining goals has a correlation value of $r = 0.277$ with inferential comprehension, corresponding to an r^2 value of 0.077, which is interpreted as a weak influence. This means that approximately 7.7% of the variance in inferential comprehension performance can be explained by students' ability to attain goals. Similarly, sustaining interest recorded a correlation value of $r = 0.229$ with inferential comprehension, corresponding to an r^2 value of 0.052, which is also interpreted as a weak influence. This indicates that 5.2% of the variance in inferential comprehension can be attributed to students' sustained interest in learning tasks.

Table 4

Extent of Influence of Grit Level to the Reading Comprehension of the Students

Grit Level	Reading Comprehension	rvalue	r^2	Interpretation
Attaining Goals	Inferential	0.277	0.077	Weak
Sustaining Interest	Inferential	0.229	0.052	Weak

Note. r^2 values can be interpreted as follows: 0.00 and 0.03 = negligible or very weak relationship, 0.04 to 0.15 weak relationship, 0.16 and 0.35 =moderate relationship, 0.36 to 0.62 = strong relationship, 0.63 and

1.00 =very strong relationship.

The findings indicate that while certain dimensions of grit contribute to students' reading comprehension, particularly in inferential reasoning, their overall influence is relatively limited. The low r^2 values suggest that although students who set academic goals and maintain interest in learning activities may demonstrate better inferential comprehension, grit alone explains only a small portion of the variation in students' reading performance. This implies that other factors, such as vocabulary knowledge, prior knowledge, reading strategies, and instructional practices, may also play significant roles in shaping students' comprehension abilities.

These results suggest that developing students' grit may support improvements in inferential comprehension; however, strengthening grit alone may not be sufficient to substantially improve reading comprehension performance. Educational interventions should therefore integrate motivational strategies with explicit instruction in reading comprehension skills. Combining grit development with structured reading instruction may help students improve both their persistence and their ability to interpret and analyze complex texts.

The findings are consistent with previous research examining the influence of grit on academic outcomes. For instance, Clark and Malecki (2019) reported that goal-directed behaviors and perseverance contribute to academic performance, although their influence may be limited when considered independently from other learning factors. Similarly, Duckworth et al. (2019) highlighted that grit influences achievement indirectly through motivational processes such as engagement and persistence. Studies by Singh et al. (2020) and Zhao and Sun (2021) also indicate that grit is positively related to academic performance, but its predictive power tends to be modest when compared with cognitive and instructional factors.

From a theoretical perspective, these results are supported by Duckworth's Grit Theory, which emphasizes that perseverance and sustained effort contribute to long-term success but interact with other personal and contextual factors. Self-Determination Theory also explains that intrinsic motivation and engagement influence students' academic persistence, though these motivational traits may only partially predict learning outcomes. Goal-Setting Theory further suggests that students who establish clear academic goals are more likely to demonstrate sustained effort and improved performance. Additionally, Vygotsky's Sociocultural Theory, particularly the concept of the Zone of Proximal Development, highlights the importance of instructional support, scaffolding, and collaborative learning in enhancing students' higher-order cognitive skills. Together, these theoretical perspectives explain why grit contributes positively—but only partially—to students' inferential reading comprehension.

Module to Improve the Grit Level and Reading Comprehension of Students

The proposed intervention module, Project GRIT-READ (Goal Reinforcement and Inferential Thinking for Reading Engagement and Academic Development), is grounded on the Modified ADDIE Model to systematically address the gaps identified in students' grit levels and reading comprehension performance.

Analysis Phase. The findings of the study served as the foundation for program development. Results revealed that Grade 12 students demonstrated low grit in overcoming setbacks (AWM = 1.75, interpreted as Not Like Me at All), indicating limited resilience when confronted with academic challenges and repeated failures. Although students showed moderate grit in attaining goals (AWM = 2.31) and sustaining interest (AWM = 2.33), the data suggested inconsistency in maintaining commitment, particularly when progress was slow or tasks became difficult. In terms of reading comprehension, students performed at a developing level overall (M = 2.46), with inferential comprehension emerging as the weakest dimension

(M = 2.22). While literal and critical comprehension were at average performance levels, students struggled with drawing conclusions, interpreting implicit meanings, and connecting ideas within texts. Furthermore, the correlation analysis revealed that only the grit dimensions of attaining goals (r = 0.277) and sustaining interest (r = 0.229) had weak but significant relationships with inferential comprehension. However, the extent of influence was minimal, as indicated by low r^2 values (0.077 and 0.052), suggesting that grit explains only a small proportion of the variance in inferential comprehension performance. These findings indicate the need for an integrated intervention that strengthens goal-directed behaviors and sustained engagement while simultaneously providing explicit instruction in inferential reading strategies. The analysis clearly shows that resilience alone is insufficient to improve comprehension outcomes, and that both motivational and cognitive components must be addressed.

Design Phase. The module was structured to directly respond to the weaknesses identified in the analysis. The primary objective of Project GRIT-READ is to enhance students' inferential reading comprehension by strengthening specific grit dimensions, particularly goal attainment, sustained interest, and resilience in overcoming setbacks. The instructional design integrates explicit teaching of inferential strategies with structured grit-building activities. The module emphasizes helping students develop the ability to make inferences, draw conclusions, predict outcomes, and interpret implicit textual meanings, as these skills were identified as the most underdeveloped. At the same time, it incorporates systematic goal-setting mechanisms to improve students' commitment to long-term academic objectives. Since students demonstrated difficulty sustaining persistence when progress was slow, the program includes progress monitoring strategies and reflective activities to maintain motivation over time. The design also embeds resilience-building components, recognizing that students' low performance in overcoming setbacks may hinder sustained academic growth. By aligning instructional strategies with both cognitive skill development and motivational reinforcement, the program ensures that grit enhancement is not treated as an isolated intervention but as a complementary element integrated into reading instruction.

Development Phase. Instructional materials, tools, and structured activities were created to operationalize the module design. Inferential reading modules were developed to provide guided practice in higher-order comprehension skills, including exercises focused on identifying implied meanings, analyzing contextual clues, and synthesizing information across paragraphs. These modules incorporate scaffolded questioning techniques to gradually move students from guided support to independent reasoning. Additionally, a goal-tracking workbook was developed to facilitate structured goalsetting and monitoring. This module allows students to establish quarterly reading goals, record weekly progress, and reflect on obstacles encountered during learning tasks. To address the identified weakness in overcoming setbacks, a resilience toolkit was designed, consisting of reflection sheets, error-analysis forms, and structured reattempt activities that encourage students to view mistakes as opportunities for improvement. Teacher support materials were also prepared to guide educators in modeling inferential thinking strategies, reinforcing perseverance behaviors, and providing scaffolded assistance aligned with students' developmental needs. Through these developed materials and structured activities, the module concretely translates the study's findings into targeted instructional interventions that address both the cognitive demands of inferential comprehension and the motivational dimensions of grit.

Conclusion

1. Grade 12 students demonstrate moderate overall grit, with the strongest performance in sustaining interest, followed by attaining goals, and the lowest in overcoming setbacks. This indicates that while

they are generally motivated and engaged, their ability to persist through challenges is comparatively limited.

2. Grade 12 students exhibit average performance in literal and critical reading comprehension but show developing performance in inferential comprehension, indicating challenges in higher-order thinking and making inferences from texts.
3. Students' grit levels have a selective impact on reading comprehension, showing weak but significant positive relationships only with inferential comprehension through Attaining Goals and Sustaining Interest, while overcoming setbacks does not significantly influence performance.
4. Students' grit in terms of Attaining Goals and Sustaining Interest has a positive but limited effect on inferential reading comprehension, contributing only a small portion to their overall performance.
5. Project GRIT-READ was effectively designed using the Modified ADDIE Model to strengthen students' inferential reading skills while simultaneously enhancing grit through goal-setting, sustained engagement, and resilience-building activities.

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