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Grit Level and Academic Performance in Science of Students at Risk of Dropping Out

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Abstract. This study explores the grit level and academic performance of students at risk of dropping out (SARDO) in science and the relationship between the two variables. Embedded mixed-method research design was utilized with a survey as the primary quantitative method. At the same time, documentary analysis and Focus Group Discussion with SARDOs and their class advisers are the embedded qualitative approaches. The study found that the grit level of SARDOs has an overall mean of 1.95, equivalent to "Slightly gritty," which means that they do not have a strong desire to perform better in science. This is evident in their average grade in science for the SY 2023-2024, which shows that 75.73% of them have a "Fairly Satisfactory" performance. Data analysis using Pearson r also revealed that the academic performance in the science of the SARDOs has a highly significant positive relationship to their grit level at 0.91 coefficient of correlation. This suggests that the students with low grit levels have low academic performance in science. It was attributed to the factors disclosed in FGD, such as Poor Literacy and Numeracy, Lack of Self-motivation, Distractions, Economic Factors, Absentee Parents (as uniquely responded by SARDOs), and Mental Condition (as uniquely responded by class advisers). This implies that the development of grit level must go hand in hand with the development of academic performance. This includes proper assessment of the grit level of SARDOs and applying intervention measures such as tutorials, behavioral observations, and counseling programs that target the abovementioned factors.

Keywords: Academic performance; Embedded mixed method; Grit level; SARDO; Students at risk of dropping out.

1.0 Introduction

From a global standpoint, it is undeniable that the nation's progress is highly dependent upon the quality of education its people get. It is one of the most significant elements influencing national growth and a key component in a person's transformation into a productive citizen. However, OECD just recently released the Programme for International Student Assessment (PISA) 2022 results indicating that the students in the Philippines scored less than the average in mathematics, reading, and science, wherein almost no students were top performers in science, meaning that they were proficient at Level 5 or 6 (OECD average: 7%). This is alarming since poor academic performance is strongly linked to school dropout (Oloduowo, Alarape, & Adewole, 2019). If this aggravates, it might contribute to students quitting schooling. The Department of Education identifies them as Student-At-Risk of Dropping Out, commonly known as SARDO.

The dropout rate of students is one of the major concerns in many countries, resulting in a poverty toll and an associated negative economic impact (Dixon et al., 2021). In the Philippines, four out of 10 learners who enter Grade 1 leave school by Grade 10 (Felipe & Marcelo, 2023). Region I also has a dropout rate of 4.04% in the elementary and secondary levels in SY 2019-2020. It decreased to 2.59% in SY 2020-2021, when most students were under modular distance learning due to the pandemic (Philippine Statistics Authority, 2022). Similarly, the Basista District's dropout rate increased from 0.27% in SY 2021-2022 to 1.65% the following year. This poses the question of why this continues despite many studies and interventions. We might be missing an important contributor to this predicament.

Ogresta et al. (2021) found in their study that there is a strong connection between poor academic performance and dropping out. Identified it as one of the four high school dropout types. These are the poor academic achievers, the quiet dropouts, the maladjusted dropouts, and the stressed dropouts. In the local context, Timbal (2019) developed a predictive model to forecast who among the enrolled students will be a dropout. These rules are: if a student has an experience being retained from a previous grade level; if he/she has not experienced retention but his/her number of siblings is more significant than six; if a student has not experienced retention nor has greater than six siblings, but his/her general average of previous grade level is pretty satisfactory and satisfactory, then he/she will probably stop from schooling.

Parenno (2023) also pointed out that the high cost of education, student employment, or when the student is seeking employment were the root causes of dropouts in the Philippines. Likewise, Doll et al. (2013) made a comparative analysis of seven nationally representative studies to understand why students drop out of high school. They categorized it into three factors that affect the student's decision; these are: Push factors include school-consequence on attendance or discipline; Pull factors include out-of-school enticements like jobs and family; and Falling out factors refer to disengagement in students not caused by school or outside pulling factors. The first two factors are extrinsic, and the latter is intrinsic. However, an examination of situations and a deeper understanding of the motivations of dropouts and their parents revealed that dropping out is instead a rational choice (Wan, 2022). These empirical studies typically have focused either on dropout intentions or actual dropout, which has been the leading guiding principle in developing the Drop-Out Reduction Program (DORP). However, they have failed to consider the possible interplay of high school students' intrapersonal aspects, such as grit.

Students' choice to drop out or not perform well in school is also explained by the Expectancy-Value Theory by Wigfield et al. (2021). It is a theory of motivation that describes the relationship between a student's expectancy for success at a task or achieving a goal and the value of task completion or goal attainment. SARDOs might not continue or just easily give up if they are not confident in their ability to succeed in a task. Likewise, they will stop if they perceive the task as unimportant, unuseful, or unenjoyable. However, if the students are gritty towards a specific goal, they remain perseverant to succeed no matter how hard their situations are (Duckworth et al., 2007). The results of these studies can be a basis for crafting a DORP plan focused on academic performance and grit level to save potential dropouts. The researcher tries to address this gap by exploring the possibility of personality traits, such as grit, as an indicator of SARDO in the Philippines. The researcher sees that focusing on students' perseverance and interest can reawaken their lost grit and motivation to continue education and improve their academic performance in science.

2.0 Methodology

2.1 Research Design

This study employed an embedded mixed method design where the quantitative and qualitative data are collected simultaneously, but the qualitative data is embedded within the quantitative data (Yu & Khazanchi, 2017). A survey is the primary quantitative method, while documentary analysis and Focus Group Discussions as the embedded research approaches helped uncover the unknown complexities between grit level and academic performance in the science of the SARDOs.

2.2 Research Locale

The study was conducted in Basista District, Province of Pangasinan, Northern Luzon, Philippines. The needed data were gathered from the public high school learners and teachers in the Basista District, Schools Division I of

Pangasinan, which comprises Basista National High School, Dumpay National High School, and Bayoyong National High School.

2.3 Research Participants

One hundred three (103) identified SARDOs were used as respondents for the study through a purposive sampling technique. This comprises 56 from Basista National High School, 28 from Dumpay National High School, and 19 from Bayoyong National High School. Data were obtained from the Open High School (OHSP) Focal Person and directly from the advisers. They were held responsible for the identification of their school's SARDO following the qualification criteria as absenteeism, poor academic performance, undesirable behavior, disability/underlying illness, and early employment (Berto, 2019, as cited by Bibon, 2021) as indicators for at risk of dropping out. Forty-two (42) among them and an additional 35 class advisers were later subjected to Focus Group Discussions.

2.4 Research Instrument

The grit level of SARDO was determined using an expert-validated Grit Scale adapted from Duckworth (2007). It consists of twelve (12) indicators measured on a 5-point scale from which 5 is Very highly gritty, 4 is Highly gritty, 3 is Moderately gritty, 2 is Slightly gritty, and 1 is Not at all gritty. The statements also have a corresponding Tagalog translation. Six experts evaluated the developed questionnaire for content validity. The reliability measure used for analysis was Krippendorff's Alpha. The obtained alpha value was 0.81, indicating that the raters have "substantial agreement."

2.5 Data Collection and Analysis

The researcher first secured all necessary permits from the authorities concerned and asked permission from the respondents and their parents regarding their participation in the research before the study commenced. Also, all ethical considerations and a debriefing plan were furnished to ensure that all personal information disclosed was confidential. Research triangulation was applied in the study, including the questionnaire, documentary analysis, and focus group discussion. A survey questionnaire was the main data-gathering instrument in the study, and it was a Grit Scale adapted from Duckworth (2007). Research experts evaluated it before it was given to the actual respondents. Then, the researcher administered the survey questionnaire to identify SARDOs with the assistance of class advisers. Secondly, the academic performance in science of the respondents was measured through their average grades in science obtained from their class advisers. The grades were correlated to the obtained grit level of respondents to determine the relationship. Thirdly, documentary analysis from different sources such as grade sheets, anecdotal records, attendance sheets, and accomplished home visitation forms substantiate and confirm the veracity of the results. Subsequently, forty-two (42) of them and 35 advisers underwent FGD in 8 batches to shed light on the question posited by the researcher. The researcher also returned to the participants for debriefing at the end of the study.

This study used descriptive and inferential data analysis. Weighted mean was used to describe the grit level of SARDO using the following mean range scales: 4.50-5:00 – (Very much like me) Very highly gritty, 3:50-4:49 – (Mostly like me) Highly gritty, 2:50-3.49 – (Somewhat like me) Moderately gritty, 1:50-2.49 – (Not much like me) Slightly gritty, 1.00-1.49 – (Not like me at all) Not at all gritty. Meanwhile, the level of performance in the science of SARDO was described using the DepEd Order no.31 s.2020 or the Interim Guidelines for Assessment and Grading in light of the Basic Education Learning Continuity Plan where a grade of 90-100 – Outstanding, 85-89 – Very Satisfactory, 80-84 – Satisfactory, 75-79 – Fairly Satisfactory, below 75 – Did not meet the expectation. Furthermore, Pearson Product Moment Correlation (r) was used to determine the relationship between grit level and academic performance in the science of SARDO. Their Grit level was correlated to their average grade in science at the end of School Year 2023-2024 using Microsoft Excel. In addition, the qualitative data obtained from the Focus Group Discussion were interpreted using attribute analysis, which examines the frequency with which specific characterizations or descriptors are used. However, the emphasis is on adjectives, adverbs, descriptive phrases, and qualifiers used by the participants rather than the targets of these parts of speech (Bergin, 2018). This interpretive process was employed to gain insight into the attributions and particular implications of the group discussion results. Lastly, an Implication Analysis of grit level was carried out to formulate an intervention model that would fill the gap in the existing practices in the field.

2.6 Ethical Considerations

Research ethics govern the standards of conduct for scientific research. It is important to adhere to ethical principles to protect research participants' dignity, rights, and welfare. Pondering on this note, the researcher secured all necessary permits from the proper authorities. The purpose and research process were also clearly explained to the participants and their parents before the study. They were told that their participation was voluntary and that all information disclosed to the researcher was confidential. The researcher also returned to the participants for debriefing at the end of the study to ensure that the process had not affected them in any way. As such, this research was reviewed by the ethics committee of the Lyceum-Northwestern University to ensure that the appropriate ethical standards were upheld.

3.0 Results and Discussion

3.1 Grit Level of SARDOs Towards Learning Science

This part presents and discusses the grit level of SARDOs towards learning science. The grit level of SARDO was determined using a grit scale consisting of twelve (12) indicators measured through a 5-point scale from which 5 is very highly gritty, 4 is highly gritty, 3 is moderately gritty, 2 is slightly gritty, and 1 is not at all gritty. Table 1 displays the grit level of SARDOs from the public secondary schools of Basista District, where the overall mean is 1.95 with a descriptive equivalence of "Slightly gritty." Meanwhile, indicator 7, "I often set a goal for my studies or science projects but later choose to pursue a different one," has the highest mean of 2.46 but still falls under "Slightly gritty." This depicts that high-level tasks can be more efficiently accomplished in groups due to difficulty. This result can be related to the Expectancy-Value theory, which states that students will give up the task if they find it hard to accomplish (Wigfield et al., 2021). The teacher should also try to match the challenge level with the abilities of the students to avoid frustration among them.

Table 1. *Grit Level of SARDOs for Every Indicator in the Grit Instrument*

Indicators	Mean	Grit Level
1. I overcame obstacles to complete a significant task assigned to me by my science teacher.	2.36	Slightly gritty
2. In my science activities, new ideas and projects sometimes distract me from previous ones.*	1.95	Slightly gritty
3. My interests in science change from year to year.*	2.21	Slightly gritty
4. Hindrances in accomplishing my science tasks do not discourage me. I do not give up easily.	2.15	Slightly gritty
5. I have been obsessed with a certain science idea or project for a short time but later lost interest.*	1.77	Slightly gritty
6. I work hard to complete the tasks given to me by my science teacher.	2.35	Slightly gritty
7. I often set a goal for my studies or science projects but later pursue a different one.*	2.49	Slightly gritty
8. I have difficulty focusing on science projects that take over a few months to complete.*	1.45	Not at all gritty
9. I finish whatever I begin. I complete all science activities assigned to me.	1.55	Slightly gritty
10. I have achieved a goal that took years of work.	1.48	Not at all gritty
11. I become interested in new things or activities every few months.*	1.67	Slightly gritty
12. I am hardworking. I finish my science tasks no matter how difficult they are.	2.00	Slightly gritty
Overall Mean	**1.95**	**Slightly gritty**

Notably, the respondents perceive that indicator 8, "I have difficulty maintaining my focus on science projects that take more than a few months to complete," ranks last with a mean of 1.45, which falls under the "Not at all gritty." This implies that SARDOs were easily distracted by whatever intervening factors diverted their focus. This finding aligns with what the respondents revealed in FGD and with the ideas of Raganta et al. (2021), wherein the SARDOs are preoccupied with their responsibilities due to poor economic status, consequently loosening their stamina to continue their education. Likewise, most students who spend more time on electronic gadgets have a high level of dependency on gadgets and poor academic achievement (Othman, 2020).

3.2 Performance Level of SARDOs in Science

The following are the performance levels of SARDO in science, which were based on the percentage of average grades for the whole school year. These data are further verified through other documents, such as class records, attendance sheets, accomplished home visitation forms, etc., presented by the class advisers and science teachers. It is reflected in Table 2 that most of the respondents have a "Fairly Satisfactory" performance, which is evident at 75.73 %, followed by a "Satisfactory" performance at 14.56%, while 6.80% have reached "Very Satisfactory." Moreover, none of them got "Outstanding." The three students, comprising 2.91% of those who "Did Not Meet Expectations," were enrolled in remedial classes during the vacation. The advisers backed up this data by disclosing in the FGD that SARDOs have to devote serious and sustained effort to pass the subject.

Table 2. *Performance Level of SARDOs in Science*

Grading Scale	Frequency	Percentage	Performance Level in Science
90-100	0	0%	Outstanding
85-89	7	6.80%	Very Satisfactory
80-84	15	14.5%	Satisfactory
75-79	78	75.7%	Fairly Satisfactory
Below 75	3	2.91%	Did Not Meet Expectations

3.3 Relationship Between Grit Level and Academic Performance in Science of SARDOs

This part highlights the relationship between SARDO students' grit levels and academic performance in science. The obtained individual means of their grit level and final grades in science were compared, and the results served as the foundation for interpreting the extent of association between the two factors. Table 3 shows that the academic performance in science of the SARDOs has a highly significant positive relationship to their grit level since the correlation coefficient is greater than the critical value at 1%. The lower the students' grit level, the worse their academic performance in science will be since the coefficient of correlation exceeds 1%. This suggests that the students with low academic performance in science have low grit levels. Therefore, they must develop persistence and an innate desire to learn and perform better in class to get a higher grade and pass the subject.

Table 3. *Relationship of Grit Level and Academic Performance in Science of SARDOs*

Variables	Coefficient of Correlation	Interpretation
Grit Level & Academic Performance in Science of SARDOs	0.910	Highly significant
Critical Values at 2-tail test 5% level = 0.195 1% level = 0.254		

This result adheres to the conclusion of Duckworth et al. (2007), who noted that success was a significant predictor of grit. Since intelligence has been proven and documented as a strong predictor of achievement (Pishgadam et al., 2022), educational reformers shall consider personality factors, like grit, to determine the commitment and stamina of the students to finish school. This suggests that students with low grades in previous grade levels must undergo grit level assessment upon enrolment to impede any prefigured academic mishaps.

3.4 Factors Affecting the Grit Level of SARDOs toward their Academic Performance

This section encapsulates the factors affecting the grit level of SARDOs toward their academic performance as perceived by themselves and class advisers. The data presented the significant attributes obtained from focus group discussions.

Common Responses of SARDOs and Class Advisers

Poor Literacy and Numeracy. The SARDOs emphasized their difficulties in engaging themselves during class. The majority said they were having a hard time understanding the science concepts. The teachers claimed that the learners cannot advance into higher competencies since they lack the foundation skills in reading and mathematics. S3 stated that:

" I am having a hard time understanding what I am studying, so when I have to do something, I do not even know what I am going to do."

Similar to the statement of S13, S27 said:
"... it is hard to understand what ma'am discusses, especially when it comes to computations; I am having a hard time keeping up with the lesson because I need to know plus, minus, divide, and multiplication."

The responses above are analogous to teachers T7 and T18 responses:
"They cannot keep up in class because they cannot read or have low comprehension skills …"

This outstanding problem can be resolved as concluded by Casingal (2022), who used results from the Phil IRI's pre-and post-tests. His study revealed that the Phil-IRI and remedial classes are practical due to the increased number of independent-level learners. Out of 767 learners, 117 become independent readers and 45 non-readers; it goes down to seven. Additionally, remedial classes must be conducted properly, focusing on students' reading

and arithmetic difficulties and identifying least-mastered skills. Also, a system of regular progress monitoring for SARDOs should be established to ensure that interventions are effective and to adjust strategies as needed.

Lack of Self-Motivation. The learner participants manifested a lack of self–motivation in learning. For the respondents, it is irrelevant to put forth effort in studying science since they do not see its immediate application and importance. The teachers even said encouraging them is challenging because they do not manifest the intrinsic desire to perform better. S1 shared:

" I am too lazy to study because I cannot use those things in life."

Likewise, S2 said:
"… I am bored in class".

The teachers also mentioned:
"Sometimes, no matter how much encouragement and effort you give them, it is useless because they do not help themselves." – T11
"…they are hard to motivate because they show that they are not interested." – T7
"…learning is not their priority …."-T30

This conforms to the study of Teng (2024), where motivational beliefs had significant predictive effects on Self-Regulated Learning. Since role modeling has long been proven to promote character and personality formation (Kenny et al., 2004), integrating a growth mindset in schools must be part of intervention plans to address personality and character issues such as poor self-motivation. Growth mindset instruction must be done by integrating autobiographical sketches of local or international figures who went through life difficulties and succeeded in schooling or life. However, the results of Gam-ad (2016) show that SARDOs can still thrive in classes. Engaging the students in enjoyable and unusual activities like games and puzzles improved their learning, as revealed in their pre-test and post-test scores. Teachers should conduct lessons in exciting ways to improve learning, where students become more active, interactive, and entertained while learning.

Distractions. The participants emphasized the learners' difficulties maintaining focus in class because their minds are preoccupied with many things, such as social media, mobile games, commitments, and issues with family and friends. According to S13:

"Even though my teacher is talking, my mind is still in ML (online game) …"

Likewise, S18 also mentioned that:
"…I always think of Facebook (laughs)…"

Issues with family, friends, and love life are also major contributing factors. S7, S15, and S33:
"…I cannot study well, especially if there is a problem at home …."- S7
"Sometimes I am not in the mood to study when my boyfriend and I have LQ (lovers' quarrel..."-S15
"...I am happier when I am with friends… sometimes we are planning an outing or the next thing to do …"-S33

The teachers also expressed that:
"…students are so addicted to cell phones. That is almost all they do. They do not have time to study." –T16
"Students are so hooked to cell phones. You cannot separate them from the device even for a moment." –T20

This result supports Schmidt's (2020) findings that multitasking while doing schoolwork has a significant detrimental effect on students' learning and performance. Learners must be free from distractions to improve their motivation and self-regulated learning. Teachers can also implement structured classroom routines that minimize distractions, such as designated breaks and clear rules on the use of gadgets during class hours. Likewise, they should be provided with training on strategies to manage classroom distractions and techniques to redirect students' attention effectively.

Economic Factors. Another common theme that emerged was economic factors. The respondents disclosed that life misfortunes tied SARDOs to premature duties, like early employment to sustain family needs, which detracted their long-term commitment to schooling. S23 shared:

"Of course, because I was working, ma'am, I could not study well... I did not have enough money for school."

Likewise, S42 shares the same sentiments:
"I have to help my family to work. Otherwise, we will have nothing to eat".

S9 also added:
"There is no one else to count on at home, just me because my parents are at work. I am tired, so I do not have time to study."

The teachers also shared similar perspectives:
"The others are working students, so they do not have time to study …" –T2
"Because when the student is receiving money, work will be his priority."-T29

Identifying the grit level must serve as a springboard alongside identifying the causes for dropping out since the literature believes that resilient students do not exhibit quitting behavior despite life impediments (Adebusuyi, 2018). This indicated that some students experiencing economic challenges for dropping out might not display quitting behavior because of their strong determination and will-driven motivation to graduate. The schools can also establish community networks or partnerships to support SARDOs, such as food assistance programs, free school supplies, or childcare services for those with family responsibilities. Moreover, they can develop work-study programs that allow students to earn a small income while completing school tasks and balancing their financial needs and academic responsibilities.

Unique Response of SARDOs
Absentee Parents. The learner participants uniquely responded to the lack of parents' presence. They revealed that their parents' involvement, support, and appreciation of what they do mattered to them. For them, it is irrelevant to exert much effort in their studies when their parents are indifferent. S18 said that:

"…my mama does not care about me... it is okay with her no matter my grade is …"

In the same manner, S35 answered:
"They do not say anything. They do not even ask how my studies are".

S41 also added:
"Since then (elementary), they have not taught me at home. They are always busy with their work."

This phenomenon is important to consider, given recent research by McCormick et al. (2014) demonstrating that active parent involvement in adolescence predicts lower levels of future school problems. Hence, home-school communication must be established and strengthened through emotionally supportive teachers and administrators. This action can help parents better understand their children's school challenges and monitor their problematic behaviors. Schools are encouraged to create support groups for parents, especially those who may feel disconnected due to work commitments, offering them a platform to share experiences and strategies for balancing responsibilities.

Unique Response of Class Advisers
Mental Condition. The class advisers uniquely responded to learners' underlying mental condition as a contributing factor. They claim that some learners are undiagnosed but with manifestations of learning disability, which causes their low grit level to perform better in their class. The teachers cannot respond appropriately to their needs because of a lack of training.

"Others seem misplaced because even if you know a student has a learning disability, they are still mainstreamed in the class… it would be ok if we had special training to handle their case." –T13

Sakarya and Doenyas (2021) revealed in their study that teachers' special education training increased their willingness to teach inclusive classes and intention to implement special education techniques in the regular education classroom. This means that teachers are willing to teach inclusive classes as long as they know exactly what to do and how to deal with students with special needs inside their classrooms. This suggests that the Department of Education must provide professional development workshops to train teachers on identifying and supporting students with learning disabilities and other mental health challenges. They could also partner with educational psychologists, special education experts, and counselors to assist in diagnosing and creating individualized learning plans for students with mental health or learning difficulties.

3.5 Proposed Intervention Model

This research found that grit level has a highly significant relationship with academic performance in science, and the low grit level of SARDOs is affected by factors such as Poor Literacy and Numeracy, Lack of Self-motivation, Distractions, Economic Factors, Absentee Parents, and Mental Condition as exposed by them and their class advisers during the FGD. These consequently result in their poor academic performance in science. Integrating these substantial elements into the intervention model is vital for identifying and providing intervention measures to SARDOs in a school. The need to explicate grit level beforehand will be the first course for identifying SARDOs in the model. The abovementioned factors are also strategically integrated into the core body of the model - the intervention methods, emphasizing factors directly related to the SARDOs. With these at hand, the researcher proposed the AWA Intervention Model. Figure 1 shows the AWA Intervention Model. It focuses on academics as well as personal and character traits vital to self-improvement. It has three phases: assess, Workout, and Advance/Adjust.

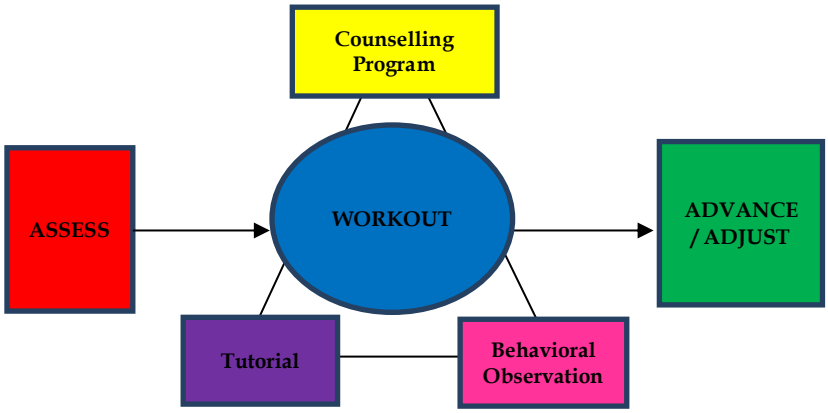

Figure 1. Proposed AWA Intervention Model

Assess. The grit instrument must be used to level off the grit of the incoming students on the first day of classes. Students with poor grit levels (Not At All Gritty and Slightly Gritty) qualify for the intervention plan. This can be verified through interviews with parents and previous teachers.

Workout. This stage lets the teacher do the three processes: Counseling Program, Tutorial, and Observation. The Counselling Program targets personal and environmental factors such as Lack of Self-Motivation, Distractions, Economic Factors, and Absentee Parents to revive grit among students. These factors also affect students' personalities and character and shall be considered for improvement since they contribute to the power of determination in committing to long-term goals (Mellergers, 2018). Another process is the Tutorial, where the students are given one-on-one academic teaching until they finish the class. Instruction with strong remedial components effectively alleviates literacy and numeracy issues (Casingal, 2022). Thus, this is expected to address negative factors such as poor Literacy and Numeracy and, partly, Mental Condition.

The last process under this phase is the Behavioral Observation of whether SARDOs have developed high grit levels or showed no improvement. This is based on students' overt behavior recorded in the teacher's anecdotal records and class performance.

Advance/Adjust. This is the stage in the model where the teacher has to decide whether the students will advance to the next level or adjust and modify the strategies to improve their standing as SARDOs. The cycle of the AWA must be kept continuous for students who showed no significant growth in grit and academic performance.

4.0 Conclusion

The poor grit levels of SARDOs toward learning science are highly related to their final grades in the science subject. This will lead to dropping out if their interest in learning continues to vitiate. Likewise, SARDOs would be more likely to succeed and improve in their performance if they cultivate their grit toward learning with the help of parents, teachers, administrators, and the community. Moreover, low grit level toward academic performance in science was attributed by SARDOs and their class advisers to factors such as Poor Literacy and Numeracy, Lack of Self-motivation, Distractions, and Economic Factors. Learner respondents uniquely responded to Absentee Parents, while class advisers uniquely responded to Mental Conditions. These contributory factors are concentrated on the learner's personal traits, relationships, and material factors. The teacher factor did not transpire from the responses during FGD, but the researcher does not discount the possibility of its covert contribution.

The data above implies that SARDOs' academic performance in science can be reversed or improved if the identified factors affecting low grit levels are successfully resolved, thus, the proposed AWA intervention model. As such, a grit assessment must be administered to SARDOs upon enrolment. Qualified SARDOs can undergo the *Counselling Program*. Cultivating a growth mindset among students must be the primordial goal of this program. On the other hand, teachers are encouraged to design lessons that connect science concepts to real-life situations (e.g., environmental issues, health, and technology) to demonstrate their practical importance and relevance to everyday life. This further motivates them to learn (Gam-ad, 2016). Through counseling, family-centered interventions involving parents or guardians can be created and intensified to address issues at home that may impact students' ability to concentrate in school. Problems with gadget use can also be resolved by setting clear rules on their use at home and in school during class hours. In addition, community linkages can be established and strengthened to provide support services for SARDOs who are struggling financially.

Tutorials can be given to students with poor Literacy, numeracy, and Mental Conditions until they can finish the class. However, it is better if schools establish clear referral pathways for students requiring specialized support beyond what they can provide, ensuring students receive proper care from external professionals. *Behavioral Observation* can determine whether SARDOs have developed high grit levels or did not show any grit improvement. This should be reflected in the students' anecdotal records and class performance. Following this cycle can help teachers decide whether to adjust the intervention protocol or advance the student to the next level. It is recommended that educators consider using the AWA intervention model in identifying and planning a suitable course of action for learners who are more likely to quit school.

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7.0 Conflict of Interests

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